

MILLENNIUM HERITAGE GROUP (Pty) Ltd

PHASE 1

ARCHAEOLOGICAL IMPACT ASSESSMENT
RELATING TO THE PROPOSED DEVELOPMENT OF LEPHALALE
RAILWAY YARD AND ASSOCIATED TWO BORROW PITS NEAR
STEENBOKPAN, LEPHALALE LOCAL MUNICIPALITY, WATERBERG
DISTRICT OF THE LIMPOPO PROVINCE, SOUTH AFRICA



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EXECUTIVE SUMMARY

This report provides the results of an archaeological impact assessment study for the proposed Lephalale Railway yard and its associated two borrow pits within the Lephalale Local Municipality of the Waterberg District, Limpopo Province. The study area is located roughly 22 kilometers west of Lephalale Central Business District (CBD) situated near Medupi power station and newly established mine. The proposed development will impact several properties namely: Portion 1(remaining extent) and Remainder of Geelhoutkloof 359LQ, Farm Enkeldraai 319LQ, farm Kringgaatspruit 318LQ (now Pontes Estate 712) and Buffelsjagt 317LQ. The proposed project will require 22 hacters of private land to develop the railway yard. The new yard will extend 4.8km along the existing Lephalale/Thabazimbi single railway yard on privately owned game farm. The vast area is slightly flat with undulating areas dominated by rocky outcrops and isolated hills to the west. Generally, this area is known for sparsely distribution of archaeological sites, ranging from Khoi- San rock art, Iron Age and recent past periods including burial sites (Huffman 2007).

Naledzi Environmental Consultants requested Millennium Heritage Group (Pty) Ltd, an independent heritage consulting company to assess the heritage sensitivity of the Lephalale area proposed for the railway yard and its associated two borrow pits. A multi-stepped methodology was used to address the terms of reference. To begin with, a desktop study was carried out to identify any known heritage sites and their significance. This involved consulting contract archaeology reports filed on SAHRIS, research reports and academic publications. Finally, the study was guided by the National Heritage Resources Act of 1999 and SAHRA Minimum Standards for impact assessment. Desktop

study was followed by fieldwork. Systematic foot surveys covered the most sensitive areas of affected game farms targeted for railway yard establishment. In addition, desktop studies indicated that the archaeology of the region is characterized by Stone Age, well represented by rock art sites that are located further to the north and south of the proposed study area. The other phase of occupation consisted of Ndebele who had settled amongst the Ngwato in Botswana who arrived in the area during the Pre-colonial times.

Based on this study, the following conclusions were reached:

The surveys of the top soil show no evidence of archaeological materials remains, capped or distributed as surface scatters on both the proposed railway yard and the proposed two borrow pits. There is no indication of graves or burial sites within the proposed areas. There are no primary or secondary effect at all that are important to archaeologists, scientists or the general public that will be impacted in terms of generally protected heritage resources according to the National Heritage Resources Act 25 of 1999. No further studies/Mitigations are recommended for the proposed railway yard and its associated two borrow pits.

- ❖ Should chance finds be recovered during the construction of the Railway yard and its associated infrastructures, work must be stopped immediately. A report must be made to the nearest heritage authority. Based on this assessment we recommend to the Provincial Heritage Resource Agency or South African Heritage Resource Agency to approve the project as planned.

ACKNOWLEDGEMENTS:

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1. INTRODUCTION

Transnet SOC LTD commissioned studies for the proposed development of a Railway yard and associated infrastructures. Two borrow pits were identified within the project area where gravel materials will be sources for the proposed project. The proposed project area falls within the Lephalale Local Municipality of the Waterberg District, Limpopo Province. The study area is located roughly 21.79 kilometers west of Lephalale Central Business District (CBD) near a coal mine and Medupi power station. The proposed development will affect several properties that includes: Portion 1(remaining extent) and Remainder of Geelhoutkloof 359LQ, Farm Enkeldraai 319LQ, farm Kringgaatspruit 318LQ (now Pontes Estate 712) and Buffelsjagt 317LQ. The proposed project will require 22 hacters of private land to develop the railway yard. The new yard will extend 4.8km along the existing Lephalale/Thabazimbi single railway yard on privately owned game farm. To ensure that the proposed development meets the environmental requirements in line with the National Environmental Management Act 107 of 1998 as amended in 2010, they appointed Naledzi Environmental Consultants as an Independent Environmental Assessment Practitioner, who then appointed Millennium Heritage Group (PTY) LTD to undertake archaeological impact assessment of the proposed project.

The development triggers listed activities under the National Environmental Management Act (107 of 1998) (NEMA) EIA Regulation of 2014 (as amended in April 2017). As a result Transnet require Environmental Authorization from the National Department of Environmental Affairs (DEA) and is required to undertake a Scoping and EIA study before it can commission the Project. Triggered listed activities forming part of the application

include activity 4 under GNR 325, Activities 24&64 under GNR 327 and Activities 4&12 under GNR324. A mining Permit and Environmental Authorization is required from the Department of Mineral Resources(DMR) for establishment of borrow pits in line with the MPRDA and NEMA EIA Regulations of 2014 and is subject to the Basic Assessment process. Application will be made in terms of the NEMA EIA Regulation for listed Activities 21&27 Under GNR327 to the DMR. As per the NEMA EIA regulation archaeological Impact Assessment (AIA) report form part of a series of appendices prepared for the Scoping and EIA study as well as the Basic assessment process.

To comply with relevant legislations, the applicant Transnet requires information on the heritage resources that occur within or near the proposed site and their heritage significance. The objective of the study is to document the presence of archaeological and historical sites of significance to inform and provide guidance on the proposed construction of a railway yard. Apart from contributing towards the preservation of the heritage resources, the studies provide information and awareness of the types of archaeological and heritage sites that occur within the proposed study area. The document enables the developer to align their functions and responsibilities to advance development activities and at the same time minimizing potential impact on archaeological and heritage sites. Heritage Impact Assessment is conducted in line with the National Heritage Resources Act of 1999 (Act No. 25 of 1999). The Act protects heritage resources through formal and general protection. The Act provides that certain developmental activities require consents from relevant heritage resources authorities. In addition to heritage legislations, the South African Heritage Resources Agency (SAHRA) has developed minimum standards used in impact assessment, while these local standards, are operational they area strengthened

by the International Council of Monuments and Sites (ICOMOS) published guideline for assessing impacts. The Burra Charter of 1999, requires a cautious approach to the management of sites; it sets out firmly that the cultural significance of heritage places must guide all decisions.

The National Heritage Resources Act (NHRA - Act No. 25 of 1999) protects all structures and features older than 60 years (Section, 34), archaeological sites and materials (Section 35) and graves and burial sites (Section, 36). To comply with the legislation, the applicant requires information on the heritage resources, that occur in the area proposed for development and their significance. This will enable the Applicant to take pro-active measures to limit the adverse effects that the development could have on such heritage resources.

2. RELEVANT LEGISLATION

Two sets of legislation are relevant for the purposes of this study in as far as they contain provisions for the protection of tangible and intangible heritage resources including burials and burial grounds.

2.1. The National Heritage Resource Act (25 of 1999)

This Act established the South African Heritage Resource Agency (SAHRA) as the prime custodian of the heritage resources and makes provision for the undertaking of heritage resources impact assessment for various categories of development as determined by section 38. It also provides for the grading of heritage resources (Section, 7) and the

implementation of a three-tier level of responsibility and functions from heritage resources to be undertaken by the State, Provincial and Local authorities, depending on the grade of heritage resources (Section, 8)

In terms of the National Heritage Resource Act 25, (1999) the following is of relevance:

Historical remains

Section 34 (1) No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant Provincial Heritage Resources Authority.

Archaeological remains

Section 35(3) Any person who discovers archaeological and paleontological materials and meteorites during development or agricultural activity must immediately report the find to the responsible heritage resource authority or the nearest local authority or museum.

Section 35(4) No person may, without a permit issued by the responsible heritage resources authority-

- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- trade in, sell for private gain, export or attempt to export from republic any category of archaeological or paleontological material or object or any meteorite; or

- bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment which assist with the detection or recovery of metal or archaeological material or object or such equipment for the recovery of meteorites.

Section 35(5) When the responsible heritage resource authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or paleontological site is underway, and where no application for a permit has been submitted and no heritage resource management procedures in terms of section 38 has been followed, it may

- serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order
- carry out an investigation for obtaining information on whether an archaeological or paleontological site exists and whether mitigation is necessary;
- if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
- recover the cost of such investigation from the owner or occupier of the land on which it is believed an archaeological or paleontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.

Subsection 35(6) the responsible heritage resource authority may, after consultation with the owner of the land on which an archaeological or paleontological site or meteorite is

situated; serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

Burial grounds and graves

Section 36 (3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority:

- (i) 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
- (ii) bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.

Subsection 36 (6) Subject to the provision of any person who during development or any other activity discover the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resource authority which must, in co-operation with the South African Police service and in accordance with regulation of the responsible heritage resource authority-

- (I) carry out an investigation for obtaining information on whether such grave is protected in terms of this act or is of significance to any community; and
if such grave is protected or is of significance, assist any person who or community which is a direct descendant to decide for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

Cultural Resource Management

Section 38(1) Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development*...

- must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

development 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:

- (i) Construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (ii) Any change to the natural or existing condition or topography of land, and
- (iii) Any removal or destruction of trees, or removal of vegetation or topsoil;

place means a site, area or region, a building or other structure

structure means any building, works, device or other facility made by people and which is fixed to the ground.

2.2. The Human Tissue Act (65 of 1983)

This act protects graves younger than 60 years, these falls under the jurisdiction of the National Department of Health and the Provincial Health Department. Approval for the

exhumation and reburial must be obtained from the relevant provincial MEC as well as relevant Local Authorities.

3. TERMS OF REFERENCE

The terms of reference for the study were to undertake a Heritage Impact Assessment for the proposed Railway yard and associated two borrow pits and submit a specialist report, which addresses the following:

- Executive summary
- Scope of work undertaken
- Methodology used to obtain supporting information
- Overview of relevant legislation
- Results of all investigations
- Interpretation of information
- Assessment of impact
- Recommendation on effective management measures
- References

4. TERMINOLOGY

The Heritage Impact Assessment (HIA) referred to in the title of this report includes a survey of heritage resources as outlined in the National Heritage Resources Act, 1999 (Act No25 of 1999) Heritage resources, (Cultural resources) include all human-made phenomena and intangible products that are result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyle of the people or groups of people of South Africa.

The term 'pre – historical' refers to the time before any historical documents were written or any written language developed in a area or region of the world. The historical period and historical remains refer, for the project area, to the first appearance or use of 'modern' Western writing brought South Africa by the first colonist who settled in the Cape in the early 1652 and brought to the other different part of South Africa in the early 1800.

The term 'relatively recent past' refers to the 20th century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may soon, qualify as heritage resources.

It is not always possible, based on the observation alone, to distinguish clearly between archaeological remains and historical remains or between historical remains and remains from the relatively recent past. Although certain criteria may help to make this distinction possible, these criteria are not always present, or when they are present, they are not always clear enough to interpret with great accuracy. Criteria such as square floors plans (a historical feature) may serve as a guideline. However circular and square floors may occur together on the same site.

The 'term sensitive remains' is sometimes used to distinguished graves and cemeteries as well as ideologically significant features such as holy mountains, initiation sites or other sacred places. Graves are not necessarily heritage resources if they date from the recent past and do not have head stones that are older than sixty years. The distinction between 'formal' and 'informal' graves in most instances also refers to graveyards that were used by colonists and by indigenous people. This distinction may be important as different

cultural groups may uphold different traditions and values regarding their ancestors. These values should be recognized and honored whenever graveyards are exhumed and relocated.

The term 'Stone Age' refers to the prehistoric past, although Late Stone Age people lived in South Africa well into the historical period. The Stone Age is divided into an Early Stone Age (3Million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years ago to 40 years ago) and the Late Stone Age (40 000 years to 200 years ago).

The term 'Early Iron Age' and Late Iron Age respectively refers to the periods between the first and second millenniums AD.

The 'Late Iron Age' refers to the period between the 17th and the 19th centuries and therefore includes the historical period.

Mining heritage sites refers to old, abandoned mining activities, underground or on the surface, which may date from the pre-historical, historical or relatively recent past.

The term 'study area' or 'project area' refers to the area where the developers wants to focus its development activities (refer to plan)

Phase I studies refer to survey using various sources of data in order to establish the presence of all possible types of heritage resources in a given area.

Phase II studies includes in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include documenting of rock art, engravings or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavation of archaeological sites; the

exhumation of bodies and the relocation of grave yards, etc. Phase II work may require the input of specialist and require the co-operation and the approval of SAHRA.

5. METHODOLOGY

Source of information

i. Desktop studies

A desktop study was performed to gain information on the heritage resources in the area. Stone Age periods are well represented by rock art sites that are located further to the north and south of the proposed study area. The Iron Age occupations of the Lephalale region seems to have taken place on a significant scale with few at least three different phases of occupations have been identified, however the last period of pre-colonial occupations consisted of Ndebele who had settled amongst the Ngwato in Botswana who arrived in the area during the Pre-colonial times. These communities did not settle in large numbers as a result few sites of cultural significance exist mentioned in close proximity to water sources. According to van Warmelo (1935) The Ga- Seeleka communities were the only group of people who occupied the northern section of Lephalale are approximately 50 kilometers north of the CBD. Burial grounds were recorded and exhumed during the construction of Medupi power station. The expectation from this desktop study is that it is highly possible to heritage belonging to these different phases.

ii. Field surveys

To identify sites on the ground and to assess their significance, a dedicated field visit was performed to the site of the proposed development. The fieldwork was conducted on the

13 and 23 of July 2018 performed by Mr. Mathoho Eric. The fieldwork followed systematic inspections of predetermined linear transects which resulted in the maximum coverage of the entire site. The sampling method selected was the stratified random technique. The proposed sites for prospecting were taken as strata with random field walking around them. Standard archaeological observation practices were followed; visual inspection was supplemented by relevant written source, and oral communications with local communities from the surrounding area. Identified sites were recorded by hand held GPS and plotted on 1:50 000 topographical maps. Archaeological/historical material and the general condition of the terrain were photographed with a Canon 1000D Camera.

Assumption and Limitations

It must be pointed out that heritage resources can be found in the unexpected places, it must also be borne in mind that survey may not detect all the heritage resources in each project area. While some remains may simply be missed during surveys (observation) others may occur below the surface of the earth and may be exposed once development (such as the construction of the proposed facilities) commences. Notwithstanding these limitations, great effort was invested in surveying the entire site.

6. ASSESSMENTS CRITERIA

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The significance of archaeological and heritage sites was determined based on the following criteria:

- The unique nature of a site.

- The amount/depth of the archaeological deposit and the range of features (stone walls, activity areas etc.).
- The wider historic, archaeological and geographic context of the site.
- The preservation condition and integrity of the site.
- The potential to answer present research questions.

6.1 Site Significance

The site significance classification standards as prescribed in the guidelines and endorsed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used in determining the site significance for this report.

The classification index is represented in the Table below that show grading and rating systems of heritage resources in South Africa.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)

Generally Protected A (GP.A)	Grade 4A	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium Significance	Recording before destruction
Generally Protected C (GP.C)	Grade 4C	Low Significance	Destruction

6.2 Impact Rating

VERY HIGH

These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or cultural) environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects.

Example: The loss of a species would be viewed by informed society as being of VERY HIGH significance.

Example: The establishment of a large amount of infrastructure in a rural area, which previously had very few services, would be regarded by the affected parties as resulting in benefits with VERY HIGH significance.

HIGH

These impacts will usually result in long term effects on the social and /or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long-term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light.

Example: The loss of a diverse vegetation type, which is common elsewhere, would have a significance rating of HIGH over the long term, as the area could be rehabilitated.

Example: The change to soil conditions will impact the natural system, and the impact on affected parties (e.g. farmers) would be HIGH.

MODERATE

These impacts will usually result in medium- to long-term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by the public or the specialist as constituting a unimportant and usually short-term change to the (natural and/or social) environment. These impacts are real, but not substantial.

Example: The loss of a sparse, open vegetation type of low diversity may be regarded as MODERATELY significant.

Example: The provision of a clinic in a rural area would result in a benefit of MODERATE significance.

LOW

These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by society as constituting an important and usually medium-term change to the (natural and/or social) environment. These impacts are not substantial and are likely to have little real effect.

Example: The temporary changes in the water table of a wetland habitat, as these systems are adapted to fluctuating water levels.

Example: The increased earning potential of people employed because of a development would only result in benefits of LOW significance to people living some distance away.

NO SIGNIFICANCE

There are no primary or secondary effects at all that are important to scientists or the public.

Example: A change to the geology of a certain formation may be regarded as severe from a geological perspective but is of NO SIGNIFICANCE in the overall context.

6.3 Certainty

DEFINITE: More than 90% sure of a fact. Substantial supportive data exist to verify the assessment.

PROBABLE: Over 70% sure of a fact, or of the likelihood of an impact occurring.

POSSIBLE: Only over 40% sure of a fact, or of the likelihood of an impact occurring.

UNSURE: Less than 40% sure of a fact, or of the likelihood of an impact occurring.

6.4 Duration

SHORT TERM : 0 – 5 years

MEDIUM: 6 – 20 years

LONG TERM: more than 20 years

DEMOLISHED: site will be demolished or is already demolished

6.5 Mitigation

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be classified as follows:

- ✓ **A** – No further action necessary
- ✓ **B** – Mapping of the site and controlled sampling required

- ✓ C – Preserve site, or extensive data collection and mapping required; and
- ✓ D – Preserve site

7. Historical background a brief synthesis of the archaeology and heritage of the study area.

7.1. The Stone Age Period

Conventionally speaking, the Stone Age period has been divided into the Early Stone Age (ESA) (3.5 million and 250 000 BP), the Middle Stone Age (MSA) (250 000 – 25000 BP) and the Later Stone Age (25000 – 2000 BP) (Phillipson 2005). Early Stone Age stone tool assemblages are made up of the earlier Oldowan and later Acheulian types. The Oldowan tools were very crude and were used for chopping and butchering. These were replaced by Acheulian ESA tools dominated by hand axes and cleavers which are remarkably standardized (Wadley, 2007; Sharon, 2009). Evidence presented from Sterkfontein, Swartkrans and Makapansgat caves shows that the first tool making hominids belong to either an early species of the Homo or an immediate ancestor which is yet to be discovered here in South Africa (Phillipson 2005; Esterhuysen, 2007). Both the Oldwan and Acheulian industries are well represented in the archaeology of northern South Africa as shown by studies in the Mapungubwe National Park (Kuman et al. 2005; Sumner and Kuman 2014).

The Middle Stone Age dates to between 250 000 ago and 25 000 years ago. In general, Middle Stone Age tools are characterized by a size reduction in tools such as hand axes, cleavers, and flake and blade industries. The period is marked by the emergence of modern humans and was accompanied by change in technology, behavior, physical

appearance, art, and symbolism (Phillipson 2005). A variety of MSA tools includes blades, flakes, scraper and pointed tools that may have been hafted onto shafts or handles and used as spear heads. Surface scatters of these flake and blade industries occur widespread across southern Africa (Klein 2000; Thompson & Marean, 2008). Residue analyses on some of the stone tools indicate that these tools were certainly used as spear heads (Wadley, 2007). From about 25 000 BP, stone tool assemblages generally attributed to the Later Stone Age emerged. This period is marked by a reduction in stone tool sizes. Typical stone tools include microliths and bladelets. Later Stone Age stone tools were recovered in the Mapungubwe National Park area (Forsman 2011). This period is also associated with the development of rock art whose distribution is known across southern Africa (Deacon and Deacon 1999; Phillipson 2005).

7.2. Farming communities, and Colonial Period.

Iron Age communities moved into southern Africa by c. AD 200, entering Limpopo and North West Provinces either by moving down via Botswana, Zimbabwe or via coastal plains route. Their movement followed various rivers inland. Being cultivators, they preferred the rich alluvial soils to settle on. It is believed that as Iron Age people moved they encountered hunter-gatherers (Klatzow, 1994). Current evidence indicates that the first Iron Age communities were established in the Limpopo Province at 280 AD (Klapwijk 1974; Huffman 2007). These landscapes, drainage systems and good climatic conditions could have influenced diverse societies including wildlife and farming communities to settle within the region. It is indisputable that the natural environment has played the dominant part; nevertheless, it is not deterministic (Katsamudanga, 2007). The introduction of farming communities in southern Africa early in the first millennium AD is characterised by

the appearance of distinctive pottery wares (Huffman, 2007), metal working (Friede, 1979), agriculture and sedentism (Maggs, 1980; Phillipson, 2005). Mining and metallurgy were largely limited to the reduction of iron and copper ore for the manufacturing of utilitarian and decorative implements.

Iron Age occupation of the region seems to have taken place on a significant scale and at least three different phases of occupation have been identified, however the last period of pre-colonial occupation consisted of Ndebele who had settled amongst the Ngwato in Botswana arrived in the area date to the Pre-colonial times. These communities did not settle in large numbers as a result few sites of cultural significance exist cited in close proximity to water sources. According to van Warmelo (1935) The Ga- Seeleka communities were the only group of people who occupied the northern section of Lephalale are approximately 50 kilometers north of the CBD. Burial grounds were recorded and exhumed during the construction of Medupi power station.

The 18th century's period is marked by the presence of white, where land was taken from African chiefs and redistributed to the Boers; this was followed by demarcation of portions of land into farms. Many of these farms have been in the ownership of families for generations. As a result, they possess a large corpus of information with regarding to the area and its history (Van Schalkwyk, 2011). Elisrus (now Lephalale) was laid out in December 1960, named after two pioneer families Elis and Erasmus (Raper: 2004)

8. SITE LOCATION AND PROJECT DESCRIPTION

The proposed study area is located roughly 29.79 kilometers west of Lephalale Central Business District (CBD) near a coal mine and Medupi power station within the Lephalale Local Municipality of the Waterberg District, Limpopo Province. The site is located on the following global positioning system co-ordinates (GPS S23°.44.59.01 " & E 27°.28.13.03").

The study area falls within the Sweet bushveld complex that extend from the lower reaches of the Crocodile and Marico river covering areas around Makoppa and Derdepoort down to the Limpopo River valley. This vegetation also extends from, Lephalale, Tom Burke into the Tropics. The landscape feature includes plains, sometimes undulating or irregular, transverse by several tributaries that recharges rain run off to the Limpopo River. The general vegetation is characterized by short open woodland with disturbed areas dominated by thickets of *Acacia Erubescence*, *A. Mellifera* and *Dichrostachy cineria* which became impenetrable. Generally, the Geology and soil of the area fall with the sand stone, siltstone and mud stones of the Clarens formation (Mokolian Waterberg group) dominate the south and western section of the area. Soils with calcrete rubble and surface lime stone layers are common. Brownish sandy (Clovelly soil form) Clayey-loam soil (Hutton soil form) on the plains and low-lying areas are common however localized areas of black clayey soil may be found (Mucina & Rutherford, 2006). Some of the identifiable plant taxa of the area include: *Acacia Robusta*, *A. Burkei*, *Acacia erubescens*, *A. Fleckii*, *A. Nilotica*, *A Senegal*, *Boscia albitrunca*, *Combretum apiculatum*, *tereminalia serecea*, *Euclea Undulata*, *Grewia Flava*, *Gymnosporia senegalensis*. Some of the ground cover include *Digitaria eriantha*, *Panicum coloratum*, *Aristida Congesta*, *Cymbopogon nardus*, *Erigidior*, *Panicum Maximum*. The proposed development will affect several properties namely. Portion 1(remaining extent) and Remainder of Geelhoutkloof 359LQ, Farm

Enkeldraai 319LQ, farm Kringgaatspruit 318LQ (now Pontes Estate 712) and Buffelsjagt 317LQ. The proposed project will require 22 hectares of private land to develop the railway yard. The new yard will extend 4.8km along the existing Lephale/Thabazimbi single railway yard on privately owned game farm. The proposed scope of the project includes the development of a new railway yard in Lephale. The yard will consist of different types of facilities and infrastructure that include the following:

- The construction of new railway line
- Construction and extension of culverts
- Infra crew building
- Guard Houses
- Staff amenities
- Provisional facilities
- Fire suppression system which require a foam storage tank and form pipeline
- Sanding facilities
- Effluent management (water/oil separator)
- X2300 000 liters diesel tanks and decanting slab- there shall be (4) rail decanting points and one road decanting point provided all at one location. The fuel storage volume is 600 000 liters.
- 6720 liters of oil storage
- Water Reservoirs



Figure 1: Existing Railway tracks



Figure 2: Site office



Figure 3: Existing Culvert



Figure 4: Access gravel road alongside the rail tracks

A8.1. BORROW PIT 1

8.1. BORROW PIT 1

Borrow pit 1 is situated on farm Buffelsjagt 317LQ, the area is further north of the proposed railway yard site in close proximity to the new railway loop excavation site. The site is located on the following global positioning system co-ordinates (GPS S23°.44.34.04 “& E 27°.28.22.05”). The proposed area is situated on flat section of land near traversing pylon and abandoned road excavation. The proposed borrow pit area covers approximately 100m X100m, here gravel materials will be extracted for the construction of railway yard groundwork. The vast land is still covered by natural vegetation disturbed partly on the excavated road to the west. The predominant plant taxa include: *Schlerocarya birrea*, *Acacia erubescens*, *A. Fleckii*, *A. Nilotica*, *A Senegal*, *Boscia albitrunca*, *Combretum apiculatum* and *Grewea flava*, *Dichristachys Cineria*.

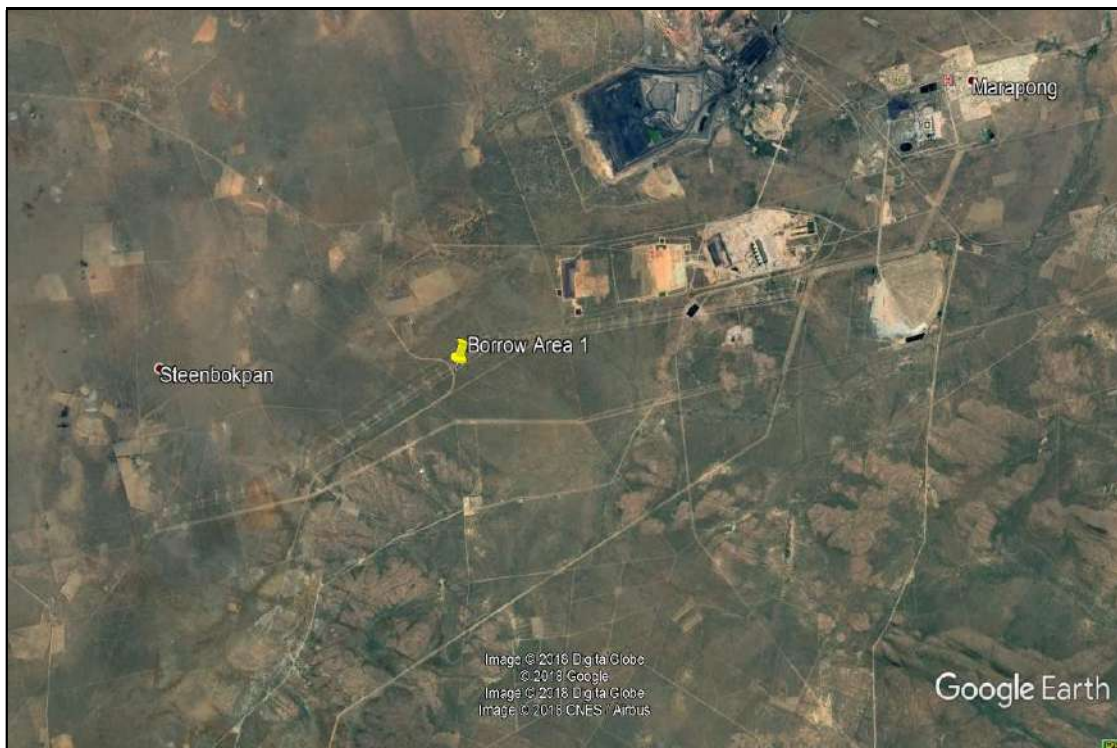


Figure 5: View of the borrow pit adopted from Google earth program



Figure 6: View of the proposed borrow pit 1 on farm Buffelsjagt 317LQ,



Figure 7: Pylon traversing the proposed borrow pit 1

8.2. BORROW PIT 2

Borrow pit 2 is situated approximately 4, kilometers further north of the farm Buffelsgat on farm Kringgaatspruit 318LQ (now Pontes Estates 712LQ). The site is near the new railway loop excavations located on the following global positioning system co-ordinates (GPS S23°.43.15.05 " & E 27°.26.25.03"). Similar vegetation observed from borrow pit 1 exist here. The area is dominated by sand underlain by hardpan ferecrete.

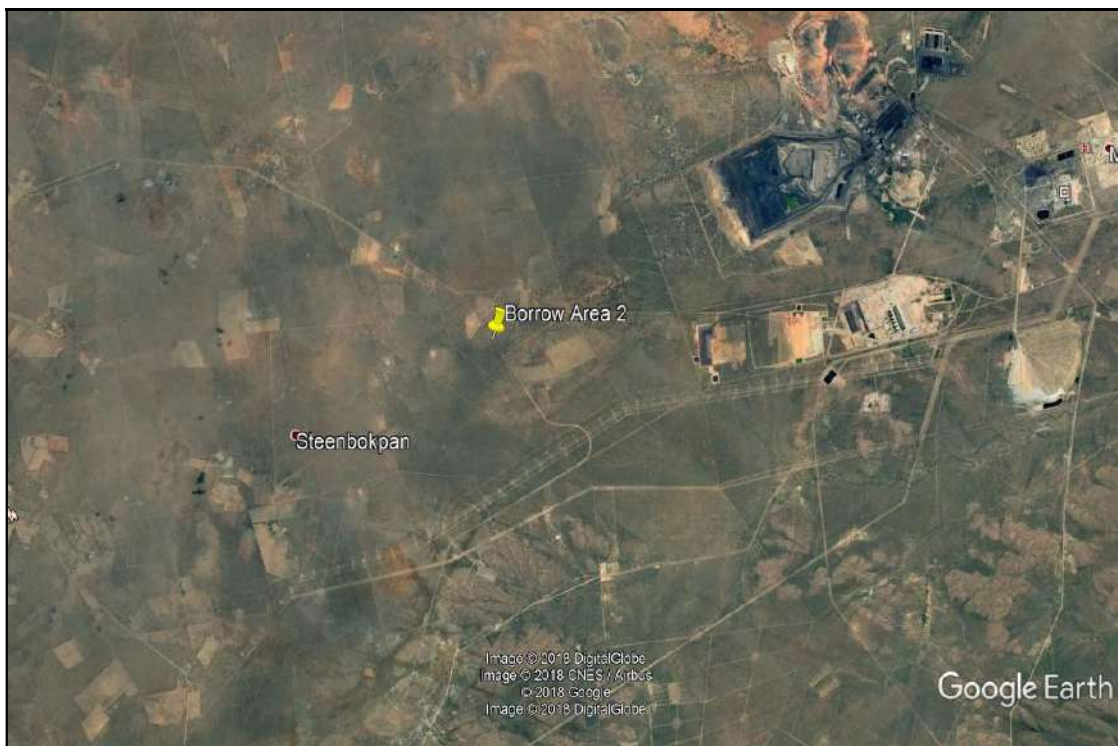


Figure 8: View of Borrow pit 2



Figure 9: View of the new railway loop photo taken from borrow pit 2

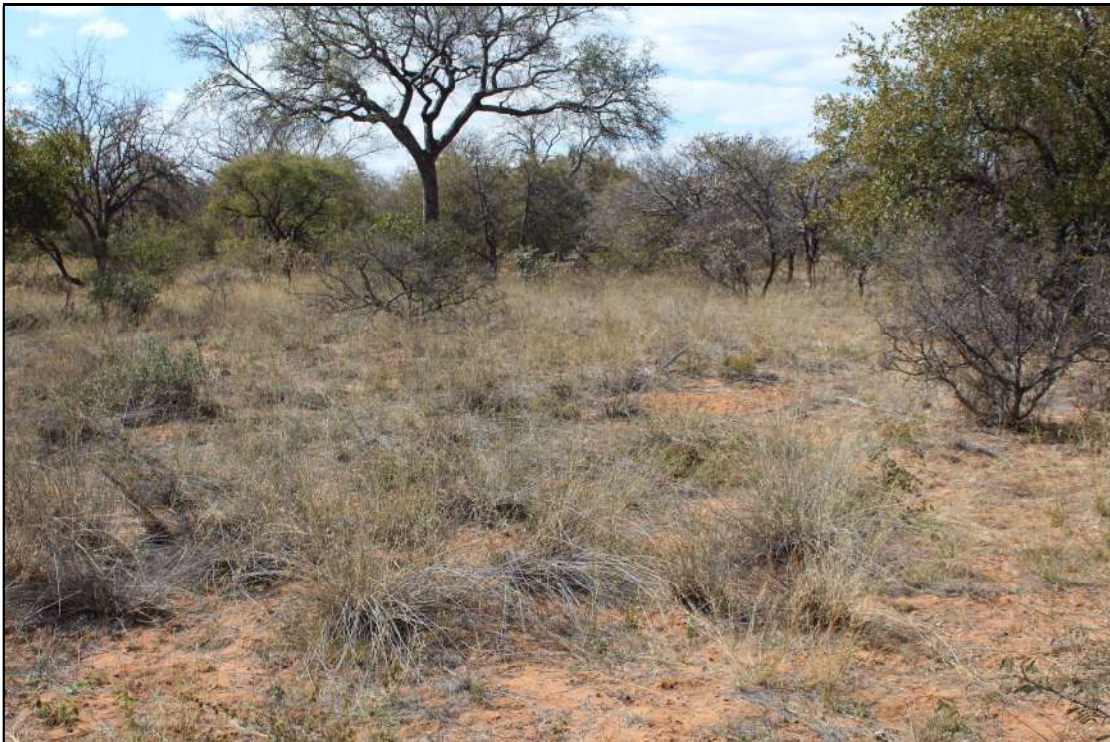


Figure 10: View of the second borrow pit dominated by natural vegetation

9. ASSESSMENT OF SITES AND FINDS

This section contains the overall results of the heritage sites/finds assessment. The phase 1 heritage scoping assessment program as required in terms of the Section 38 of the National Heritage Resource Act (Act 25 of 1999) was conducted for the proposed railway yard, associated infrastructures and two borrow pits. The study revealed that the area is not rich in heritage resources; meaning that the proposed railway yard and associated infrastructures and two borrow pits activities are generally acceptable. There are no primary or secondary effect at all that are important to scientist or the public that will be impacted in terms of generally protected heritage

Heritage Significance: No significance

Impact: Negative

Impact Significance: None

Certainty: Probable

Duration: Permanent

Mitigation: A

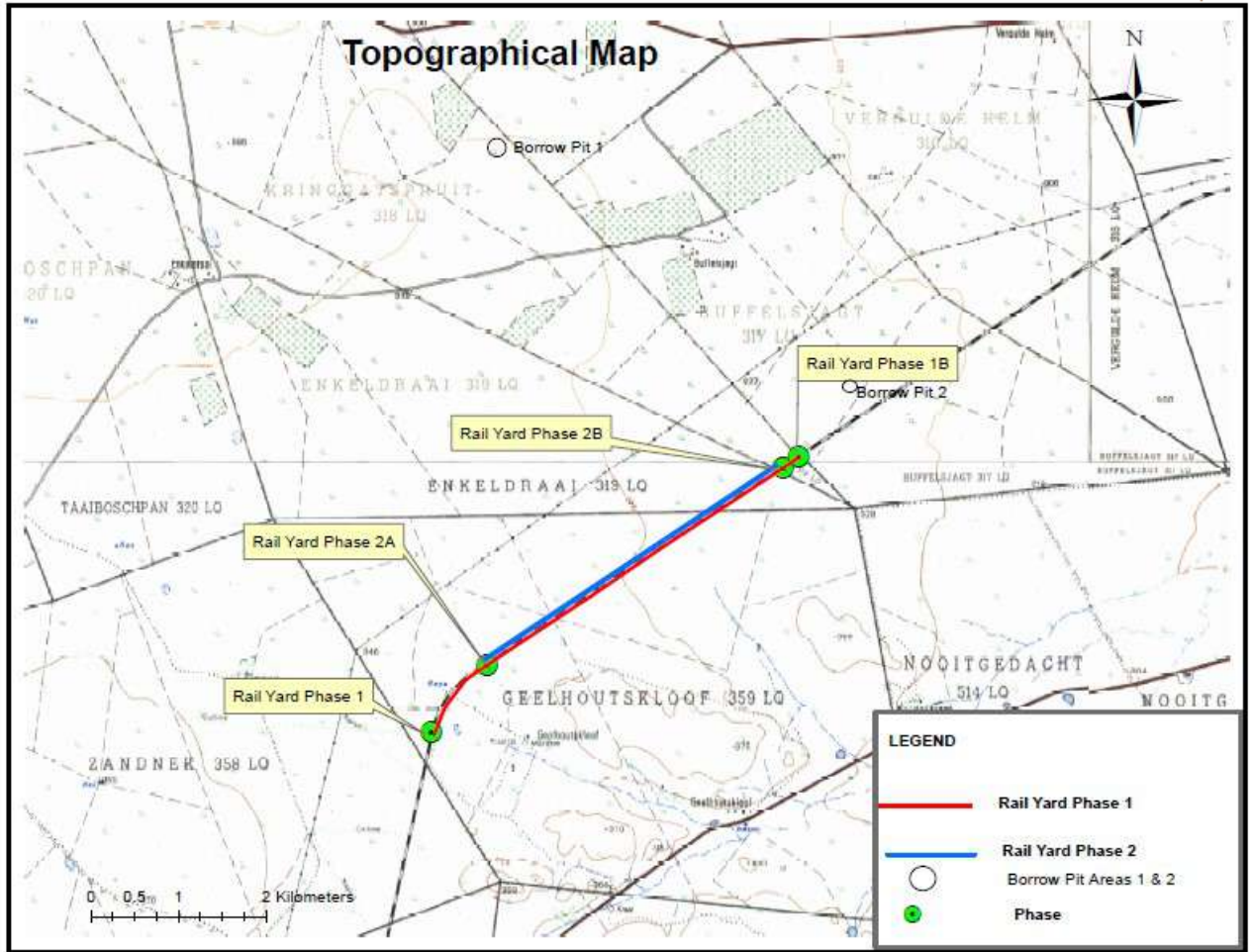
10. CONCLUSION AND RECOMMENDATIONS

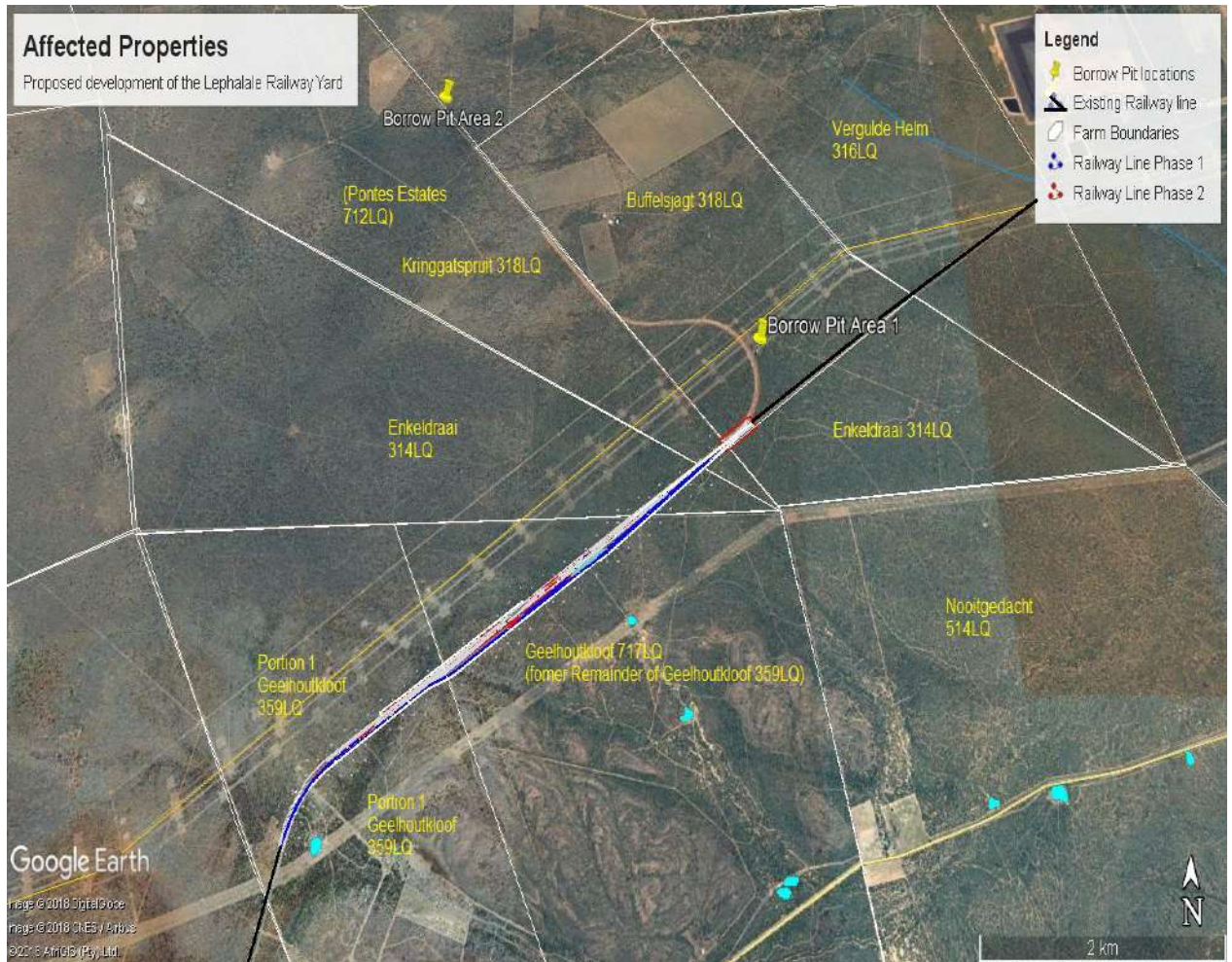
Based on this study, the following conclusions were reached:

The surveys of the top soil show no evidence of archaeological materials remains, capped or distributed as surface scatters on both the proposed railway yard and the proposed two borrow pits. There is no indication of graves or burial sites within the proposed areas. There are no primary or secondary effect at all that are important to archaeologists, scientists or the general public that will be impacted in terms of generally protected

heritage resources according to the National Heritage Resources Act 25 of 1999. No further studies/Mitigations are recommended for the proposed railway yard and its associated two borrow pits. Should chance finds be recovered during the construction of the Railway yard and its associated infrastructures, work must be stopped immediately. A report must be made to the nearest heritage authority. Based on this assessment we recommend to the Provincial Heritage Resource Agency or South African Heritage Resource Agency to approve the project as planned.

11. TOPOGRAPHICAL AND GOOGLE EARTH MAPS





PROFESSIONAL DECLARATION

I, the undersigned Mr. Ndivhuho Eric Mathoho hereby declare that I am a Professional archaeologist accredited with the Association for South African Professional Archaeologists (ASAPA) and that Millennium Heritage Group (Pty) Ltd is an independent Consultants with no association or with no any other interest what so ever with any institution, organization, or whatever and that the remuneration earned from consulting work constitute the basis of company livelihood and income.

Mr. Mathoho Ndivhuho Eric

A handwritten signature in black ink, appearing to read "Mathoho Eric" with a stylized flourish.

.....
Archaeologists and Heritage Consultants for Millennium Heritage Group (Pty) Ltd
ASAPA Member

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Addendum 1: Definitions and Acronyms

Archaeological Material remains resulting from human activities, 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.

Chance Finds Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Cultural Heritage Resources Same as Heritage Resources as defined and used in the South African Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and paleontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or *graves* and their associated materials; geological or natural features of cultural importance or scientific significance. Cultural Heritage Resources also include intangible resources such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

Cultural Significance The complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

Grave A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery.

Historic Material remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

In Situ material *Material culture* and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Late Iron Age this period is associated with the development of complex societies and state systems in southern Africa.

Material culture Buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Site A distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Acronyms:

AIA	Archaeological Impact Assessment
EIA	Environmental Impact Assessment
EIA	Early Iron Age
EMP	Environmental Management Plan
MHG	Millenium Heritage Group (PTY)LTD
NEMA	National Environmental Management Act, 1998 (Act No.107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No.25 of 1999)
SAHRA	South African Heritage Resources Agency
ESA	Early Stone Age
MSA	Middle Stone Age
LSA	Late Stone Age
IA	Iron Age
LIA	Late Iron Age
UNESCO	United Nations Educational, Scientific and culturural Organization
WHC	World Heritage Conventions of 1972

ADDENDUM 2: Types and ranges as outlined by the National Heritage Resource Act (Act 25 of 1999)

The National Heritage Act (Act No 25 of 1999, Art 3) outlines the following types and ranges of the heritage resources that qualify as part of the national estate, namely:

- (a) Places, buildings structures and equipment of cultural significance;
- (b) Places to which oral tradition are attached or which are associated with living heritage;

- (c) Historical settlement and townscapes
- (d) Landscape and natural features of cultural significance;
- (e) Geological sites of scientific or cultural importance
- (f) Archaeological and paleontological sites
- (g) Graves and burial ground including-
 - (I) Ancestral graves
 - (II) Royal graves and graves of traditional leaders
 - (III) Graves of victim of conflict
 - (IV) Graves of individuals designated by the minister by notice in the gazette;
 - (V) Historical graves and cemeteries; and
 - (VI) Other human remains which are not covered by in terms of the Human Tissue Act, 1983 (Act No 65 of 1983)
- (h) sites of significance relating to the history of slavery in South Africa;
 - (i) movable objects, including-
 - (I) object recovered from soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
 - (II) objects to which oral traditions are attached or which are associated with living heritage
 - (III) ethnographic art and objects;
 - (IV) military objects;
 - (V) objects of decorative or fine art;
 - (VI) object of scientific or technological interest; and
 - (VII) books, records, documents, photographs, positive and negatives, graphic, film or video material or sound recording, 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).

The National Heritage Resource Act (Act No 25 of 1999, Art 3) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value... these criteria are the following:

- (a) its importance in the community, or pattern of South Africa's history;

- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
- (h) Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa
- (i) Sites of significance relating to the history of slavery in South Africa.