

# **MILLENNIUM HERITAGE GROUP (Pty) Ltd**

## **PHASE 1**

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**HERITAGE 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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i. Technical and Executive Summaries

<b>Property details</b>	
Province	Limpopo
Magisterial District	Waterberg
Topo-cadastral map	23 27 DD
Coordinates	S23°.44.59.01 " & E 27°.28.13.03").
Closest town	Lephalale (Eliesras)
Farm name	Portion 1 and 2 of the farm Geelhoutkloof 359LQ, farm Geelhoutkloof 717LQ (former remainder of Geelhoutkloof 359LQ), Enkeldraai 319LQ (GIS show 314LQ), Kringgaatspruit 318LQ (GIS show 699LQ) and Buffelsjagt 317LQ

<b>Development criteria in terms of Section 38 (1) of the NHR Act 25 of 1999</b>	<b>Yes</b>	<b>No</b>
Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	yes	
Construction of bridge or similar structure exceeding 50m in length	yes	
Development exceeding 5000 sqm	yes	
Development involving three or more existing erven or subdivisions	yes	
Development involving three or more erven or divisions that have been consolidated within past five years	yes	
Rezoning of site exceeding 10 000 sqm	yes	
Any other development category, public open space, squares, parks, recreation grounds		No

<b>Development</b>	
Description of development	Development of a railway yard
Project name	Development of Lephalale railway yard
Developer	Transnet SOC Limited
Heritage consultant	Mr. Mathoho Ndivhuho Eric, Millennium Heritage Pty Ltd
Purpose of the study	Heritage Impact Assessment to identity and assess

	significance of sites (if any) to be impacted by the proposed railway line.

<b>Land use</b>	
Previous land use	Game farming
Current land use	Game farming

## ii. Executive Summary

This report provides the results of a heritage impact assessment study for the proposed Lephalale Railway yard and associated two borrow pits near Steenbokpan within the Lephalale Local Municipality in 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 and 2 of the farm Geelhoutkloof 359LQ, farm Geelhoutkloof 717LQ (former remainder of Geelhoutkloof 359LQ), Enkeldraai 319LQ (GIS show 314LQ), Kringgaatspruit 318LQ (GIS show 699LQ) and Buffelsjagt 317LQ. This linear development proposed to stretch for 22 hacters of private land to develop the railway yard. The project site comprises game farms adjacent to the existing single Thabazimbi- Lephalale railway line. Two borrow pits will also be required where gravel materials will be extracted during the construction of the railway yard. Borrow pit area 1 will be located on farm Buffelsjagt 317LQ and Borrow area 2 will be located on farm Kringgatspruit 318LQ. Generally, this area is known for a very long record of human occupation stretching from the Iron Age period to recent past (Huffman 2007).

Naledzi Environmental Consultants requested Millennium Heritage Group (Pty) Ltd, an independent heritage consulting company to assess the heritage sensitivity of area proposed for the railway yard and its associated 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 Archaeological and Palaeontological studies were followed by fieldwork. Subsequently the proposed sensitive areas of the farms were covered with the aid of a vehicle (4X4) and systematic foot surveys. The Palaeontological sensitivity map below shows that the proposed development will take place in an area of moderate Palaeontological Sensitivity.



**Figure 1:** Palaeontological Sensitivity map of the study site (white polygon) and surrounding (SAHRA, 2019)

Colour	Palaeontological Significance	Action

RED	VERY HIGH	Field assessment and protocol for finds are required
GREEN	MODERATE	Desktop study is required

Paleontologically the development will take place in an area that is to have very high to moderate Palaeontological Sensitivity (see figure 1). The areas falls within the Kheisian-aged Mogalakwena formation of the Waterberg Group outcrops in the southern half of the study area while the northern half of the area is largely covered by Quaternary-aged sands and sands soils. Both are considered to be of moderate Palaeontological sensitivity. Permian to Triassic- aged rocks of the Karroo super group outcrop along the northern limit of the study site. The Grootgeluk Formation are considered to have a Very High Palaeontological Sensitivity (Durand 2019). None of the proposed development falls within the area with Very High archaeological and Palaeontological Sensitivity.

Based on the mixed approach which include archaeological and Palaeontological desktop studies, the following conclusions were reached:

- ✓ Ground truthing of the area proposed for the railway yard area and associated borrow pits sites found no archaeological materials or heritage remains.
- Although no archaeological remains were found, it is possible that some significant features may be buried beneath the ground. Should buried fossil or archaeological materials and burials be encountered during the process of development, the following must apply:
  - Work must stop immediately

A Professional Archaeologist/Paleontologist or nearest heritage authority must be contacted.

Based on this assessment which found no archaeological resources in a heavily disturbed area, we recommend that the heritage authorities approve the project as planned.

**ACKNOWLEDGEMENTS:**

**CLIENT NAME:** Transnet SOC Limited

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**CONSULTANTS:** Millennium Heritage Group (PTY) LTD

**HERITAGE AND ARCHAEOLOGICAL SPECIALISTS:** Mr. Mathoho Ndivhuho. Eric

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## 1. INTRODUCTION AND BACKGROUND INFORMATION

Transnet SOC Limited (Pty Ltd is applying for environmental approval to construct the proposed Lephalale Railway Yard and its associated infrastructure. Two borrow pits will be required where gravel materials will be extracted during the construction phase of the proposed project. The Lephalale Railway Yard is an existing 100 wagon yard along the existing Lephalale – Thabazimbi railway track in the Waterberg District, which just requires extension for it to accommodate 200 train wagons in future for the increase in load and carrying capacity. The aim with the extension of the yard is to allow more trains to enter and exit Lephalale, to check rolling stock, allow switching of crew and to function as a service and maintenance facility for diesel locomotives.

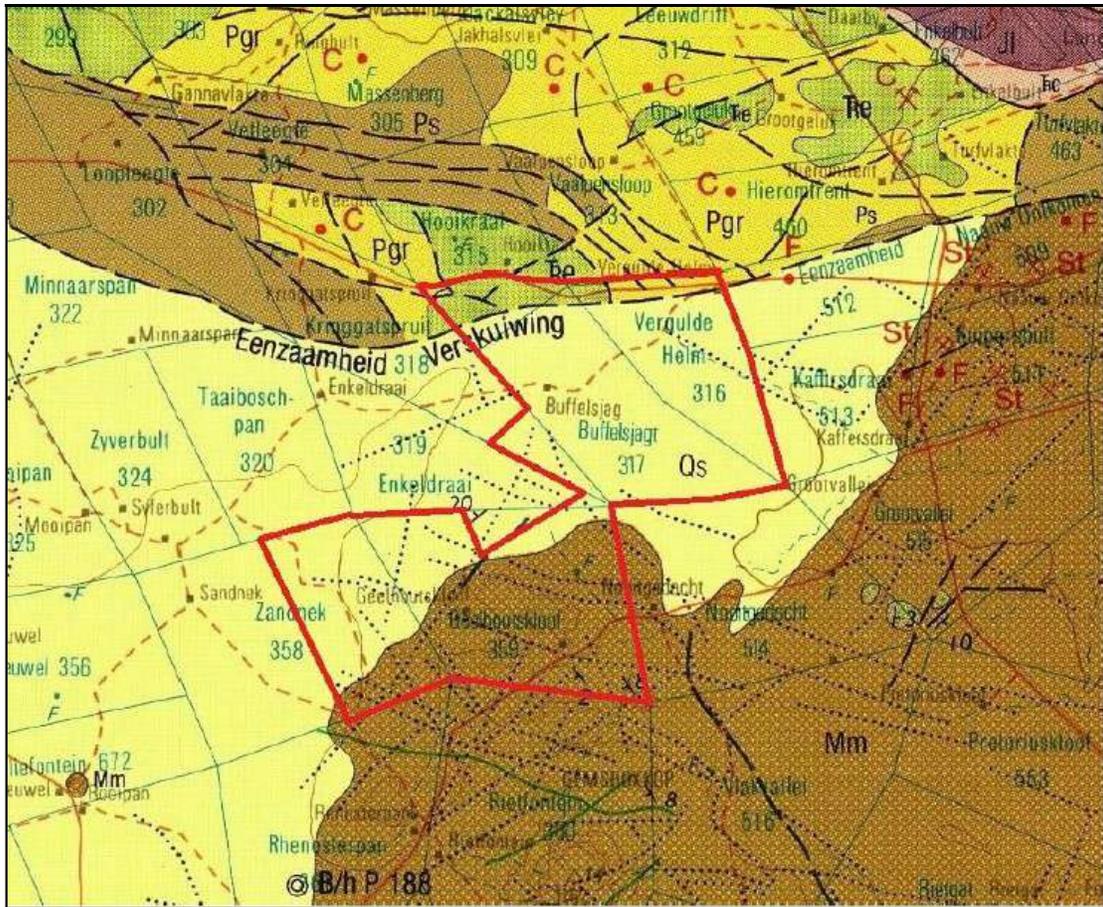
The new railway yard is a Strategic Infrastructure Project (SIP) and is instrumental to 'unlocking the northern mineral belt of the Waterberg as a catalyst' by creating rail infrastructures interlinking different Provinces. The requirement to transport coal and coal products from Lephalale to end users across SA and beyond have increased tremendously. Demand scenarios generated from customers and public domain sources range from 80 Mtpa to some 135 Mtpa. Increased rail capacity is required to support the forecast growth and demand for long term rail network capacity from the Waterberg area.

As a state-owned company, Transnet is the custodian of rail, ports and pipelines in South Africa thereby responsible for delivering reliable freight transport and handling services that satisfy customer demand. Transnet's Waterberg coal line is the rail line that stretches from Lephalale through Thabazimbi, Rustenburg and Pyramid South and links to the existing Ermelo railway line, which provides linkage to the main coal export terminal in Richards Bay Harbour. Over the past decade there has been a substantial growth in volume of high grade coal transported from Grootgeluk coal mine to Exxaro clients in Limpopo, North West, Mpumalanga and Gauteng Province. Further coal mines on the eastern Highveld in Mpumalanga cannot keep up with the demand as some are reaching their life of mine and can only supply medium to low grade coal. In comparison, the Waterberg coal fields are relatively unexploited and have large reserves of high grade coal available. The requirements to transport coal and coal products from Lephalale to end users across SA and beyond have increased tremendously (Lephalale IDP 2018/2019).

Further coal mines are planned at Lephalale. Resgen Boikarabelo coal mine is planned north-east of Lephalale, Sekoko mine is located along the Botswana border. These projects will result in the need for coal transportation when mining commences.

The Waterberg complex is hence regarded as a strategic growth node for various activities within the Mining and Industrial sectors. Adequate rail infrastructure capacity is deemed critical to unlock the potential of this economic hub. In order to meet the anticipated transportation of coal volumes from the Waterberg region, additional freight capacity is required to supply the market demand for coal.

Projected increase in coal volumes of up to 25Mtpa can be accommodated on the current infrastructure with minimum additional infrastructure requirements. The major infrastructure requirement is the extension of current yards and crossing loops to accommodate 200 wagon trains. The section between Lephallale and Pyramid South requires the major infrastructure modifications as well as new infrastructure. The current yard at Lephallale (Grootgeluk mine) is not able to accommodate a 200 wagon train. Transnet has identified the need to develop a Network Stabilisation Facility (NSF) as part of the Waterberg programme, the Lephallale Railway Yard. The Lephallale yard is an existing 100 wagon yard, which just requires extension for it to accommodate 200 train wagons. The new yard forms part of the endeavour to increase capacity and to allow more trains to enter and exit Lephallale. The purpose of the yard is to allow compilation of a 100 wagon trains from the surrounding mines, to refuel diesel locomotives, sanding, rail crew switch and on track inspections of rolling stock. Resgen Boikarabelo Coal Mine is currently constructing its 36km rail link next to and from the existing Lephallale-Thabazimbi railway track to its Resgen Plant towards Kruishout 271LQ. The rail link was approved in 2012 by LEDET as part of the Boikarabelo Coal Mine EA. Transnet will augment the existing Transnet infrastructure and Resgen rail link holding yard with the development of the Lephallale Railway Yard to accommodate a further 100 train wagons to increase load and capacity. Below is the location of the study area.



**Figure 2:** Study area indicated by red Polygon: Adapted from the 2326 Ellisras 1:250000 Geology Map (Council for Geoscience, 1993)

The new railway yard will be developed at starting point along the existing single track Lephale-Thabazimbi railway line on portion 1 (remaining extent) of the farm Geelhoutkloof 359LQ, Remainder of the farm Geelhoutkloof 359LQ, Enkeldraai 319LQ (GIS show 314LQ), Kringgaatspruit 318LQ (GIS show 699LQ) and Buffelsjagt 317LQ. The study area is situated roughly 30km west of Lephale Town (Ellisras) in the game farming area of Steenbokpan, within the Lephale Local Municipality of the Waterberg District.

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 Regulations of 2014 (as amended in April 2017). As a result Transnet requires Environmental Authorization from the National Department of Environment 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 GNR 324. The project further triggers Section 21(b),(c),(i), and(g) water uses under the National Water Act 36 of 1998 and requires a Water Use License is subject to a Water Use License Application(WULA) procedure as per the NWA WULA regulations of 2017.

The proposed borrow pits requires a Mining Permit in terms of section 27 of the MPRDA and an environmental authorization In terms of the NEMA EIA Regulation of 2014 for the establishment of borrow pits. 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 provides 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 are 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-

- (l) 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**

**38.** (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 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 m<sup>2</sup> 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 m<sup>2</sup> in extent; or
- (e) any other category of development provided for in regulations by SAHRA or

a provincial heritage resources authority,

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

(2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection (1)—

*(a)* if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or

*(b)* notify the person concerned that this section does not apply.

(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)*(a)*: Provided that the following must be included:

*(a)* The identification and mapping of all heritage resources in the area affected;

*(b)* an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;

*(c)* an assessment of the impact of the development on such heritage resources;

*(d)* an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;

*(e)* the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;

*(f)* if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and

*(g)* plans for mitigation of any adverse effects during and after the completion of the proposed development.

(4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development, decide—

*(a)* whether or not the development may proceed;

*(b)* any limitations or conditions to be applied to the development;

(c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;

(d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and

(e) whether the appointment of specialists is required as a condition of approval of the proposal.

(5) A provincial heritage resources authority shall not make any decision under subsection (4) with respect to any development which impacts on a heritage resource protected at national level unless it has consulted SAHRA.

(6) The applicant may appeal against the decision of the provincial heritage resources authority to the MEC, who—

(a) must consider the views of both parties; and

(b) may at his or her discretion—

(i) appoint a committee to undertake an independent review of the impact assessment report and the decision of the responsible heritage authority;

and

(ii) consult SAHRA; and

(c) must uphold, amend or overturn such decision.

(7) The provisions of this section do not apply to a development described in subsection (1) affecting any heritage resource formally protected by SAHRA unless the authority concerned decides otherwise.

(8) The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.

(9) The provincial heritage resources authority, with the approval of the MEC, may, by notice in the *Provincial Gazette*, exempt from the requirements of this section any place specified in the notice.

(10) Any person who has complied with the decision of a provincial heritage

resources authority in subsection (4) or of the MEC in terms of subsection (6) or other requirements referred to in subsection (8), must be exempted from compliance with all other protections in terms of this Part, but any

**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 No 25 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 20<sup>th</sup> 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 17<sup>th</sup> and the 19<sup>th</sup> 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***

Desktop studies were performed to gain information on the archaeological and palaeontological studies of the proposed area. Available literature exposes the potential of fossil in the Mogalakwena formation as well as the Grootgeluk formation geological strata (Durand 2019). The area had a long sequence of human occupation from the Stone Age periods which 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 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 area 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 a team of six individuals. Another subsequent site visit was conducted on the 16 of April 2019 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 an 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. Background to the Palaeontology, archaeology and history of the study area.***

#### ***7.1. Fossil records***

The study relied on unpublished and published sources of information including online databases such as Google Earth and Google Scholar. South Africa is richly endowed with palaeontological heritage which has illuminated in varying ways biological evolution in the entire world (Durand 2019). Geological, the rocks of the study area belong to the Ecca

Group of the Karroo Super group represented by Swartkrans and Grootgeluk formations. The formations area is rich in *Glossopteris* flora leaf imprints and coal. The Groot Geluk formation consist of thick coal seams and carboniferous shale in which leaf imprints are found. Both these formations are considered to have very high palaeontological sensitivity. A narrow strip of the Grootgeluk formation occurs on the northern border of the study area (Durand 2019).The Eendrachtsspan formation of the Ellisras Group of the super group is dominated by arid floodplain mud rocks that is probably an equivalent to the Beaufort Group or Molteno Formation of the main Karoo Basin. Although no coal occurs in this geological unit. There is possibility of plant fossils finds and is considered to be Moderate Palaeontological importance (Groenewald 2014, Durand 2019). Subsequently fossil records of the quaternary sediments that are cover the older rock strata in the arid northerly and central regions of south Africa is sparse, occur sporadically and is low in diversity. The fossil that have been discovered elsewhere in the Tertiary to calcrete and the overlying Aeolian sands and sandy soils of the Gordonia formation includes roots casts, burrows, termitaria, ostrich eggs shells, mollusk shells and isolated bones (Almonds & Pether 2008).The Quarterly sand and sandy soils that cover the northern half of the study site is therefore considered to be of moderate Paleontological importance (Groenewald &Groenewald 2014)

### ***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 came into contact with 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 18<sup>th</sup> 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). Eliesrus (now Lephalale) was laid out in December 1960, named after two pioneer families Elis and Erasmus (Raper: 2004)

## **8. DESCRIPTION OF THE PROPERTY OR AFFECTED ENVIRONMENT**

The new railway yard will be developed at starting point along the existing single track Lephalale-Thabazimbi railway line on portion 1 (remaining extent) of the farm Geelhoutkloof 359LQ, Remainder of the farm Geelhoutkloof 359LQ, Enkeldraai 319LQ (GIS show 314LQ), Kringgaatspruit 318LQ (GIS show 699LQ) and Buffelsjagt 317LQ. The study area is situated roughly 30km west of Lephalale Town (Ellisras) in the game farming area of Steenbokpan, within the Lephalale Local Municipality of the Waterberg District. Below table are the GPS coordinates of the study area:

		<b>Latitude</b>	<b>Longitude</b>
<b>PHASE 1</b>	<b>Start</b>	S 23°.46.34,23"	E 27°.25.55.86"

	<b>End</b>	S 23°.45.0,97"	E 27°.28.11.61"
<b>PHASE 2</b>	<b>Start</b>	S 23°.46.11,67"	E 27°.26.16.54"
	<b>End</b>	S 23°.45.4,54"	E 27°.28.5.76"

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 extend from Tom Burke including Lephalale into the Tropics. The landscape feature include 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 and 2 of the farm Geelhoutkloof 359LQ, farm

Geelhoutkloof 717LQ (former remainder of Geelhoutkloof 359LQ), Enkeldraai 319LQ (GIS show 314LQ), Kringgaatspruit 318LQ (GIS show 699LQ) and Buffelsjagt 317LQ.

The proposed scope of the project includes the development of a new railway yard in Lephalale. 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 3: Recently completed rail tracks



Figure 4: Site office



**Figure 5:** Existing Culverts



**Figure 6:** Access gravel road alongside the rail tracks

### **8.1. BORROW PIT 1**

Borrow pit 1 is situated on farm Buffelsjagt 317LQ, the area is further north of the proposed new railway yard. 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 plain in close proximity of a traversing pylon and road excavation. The area is still

covered by Natural vegetation dominated by *Acacia erubescens*, *A. Fleckii*, *A. Nilotica*, *A Senegal*, *Boscia albitrunca*, *Combretum apiculatum* and *Grewea flava*.

## 8.2. BORROW PIT 2

Borrow pit 2 is situated approximately 1,5 kilometers further north of the farm Buffelsgat located on farm Kringgaatspruit 318LQ (GIS show 699LQ). The site is located in close proximity of road excavations 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 hard pan ferecrete.

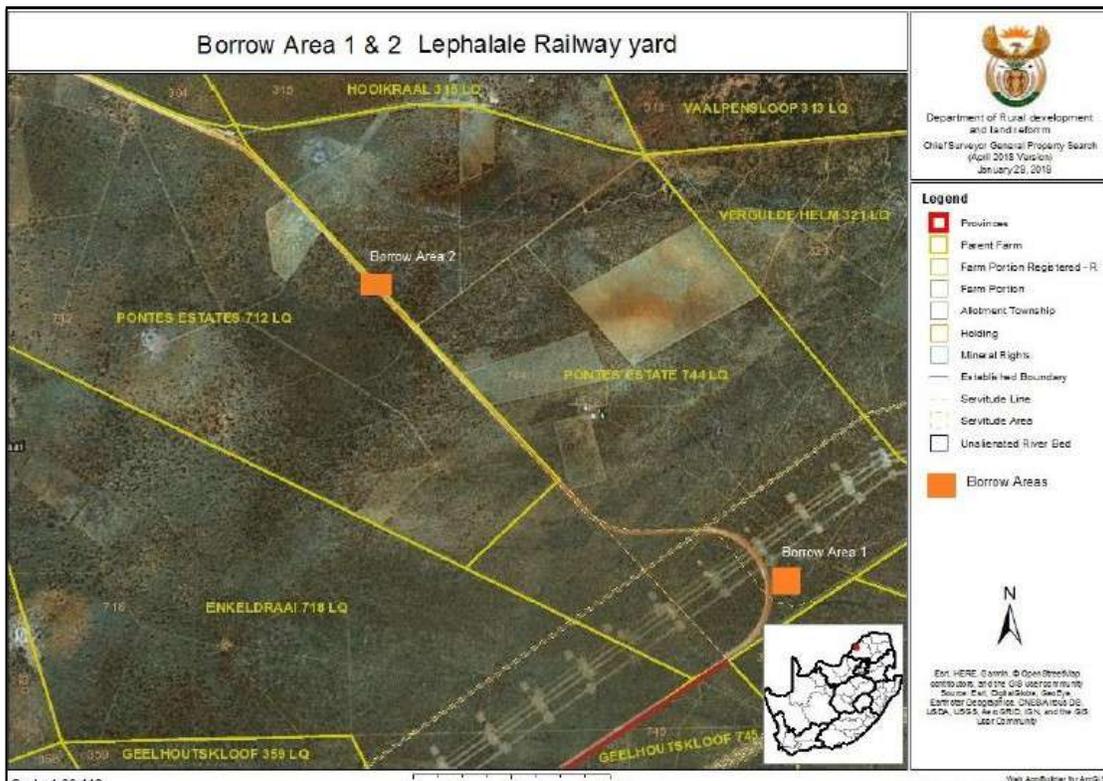


Figure 7: View of the Proposed borrow pits location adapted from Google earth



**Figure 8:** View of the proposed borrow pit 1 on farm Buffelsjagt 317LQ,



**Figure 9:** Pylon traversing the proposed borrow pit 1



**Figure 10:** View of the road excavation photo taken from borrow pit 2



**Figure 11:** View of the second borrow pit dominated by natural vegetation

## 9. ASSESSMENT OF SITES AND FINDS

This section contains the 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) done for the proposed Transnet Railway Yard, associated infrastructures and two borrow pits. Palaeontological desktop study revealed that the area fall with two geological formation namely the Mogalakwena Formation of the Waterberg Group outcrops in the southern half whilst the northern half of the site is largely covered by Quaternary – aged sands and sandy soils, both are considered to be of Moderate Palaeontological Sensitivity. Archaeologically the area is not rich in heritage resources; meaning that the proposed railway yard and its associated infrastructure development and borrow pits prospecting activities is generally acceptable. There are no primary or secondary effect at all that are important to scientist or the general public that will be impacted in terms of generally protected heritage.

<i>Heritage Significance:</i>	No significance
<i>Impact:</i>	Negative
<i>Impact Significance:</i>	None
<i>Certainty:</i>	Probable
<i>Duration:</i>	Permanent
<i>Mitigation:</i>	A

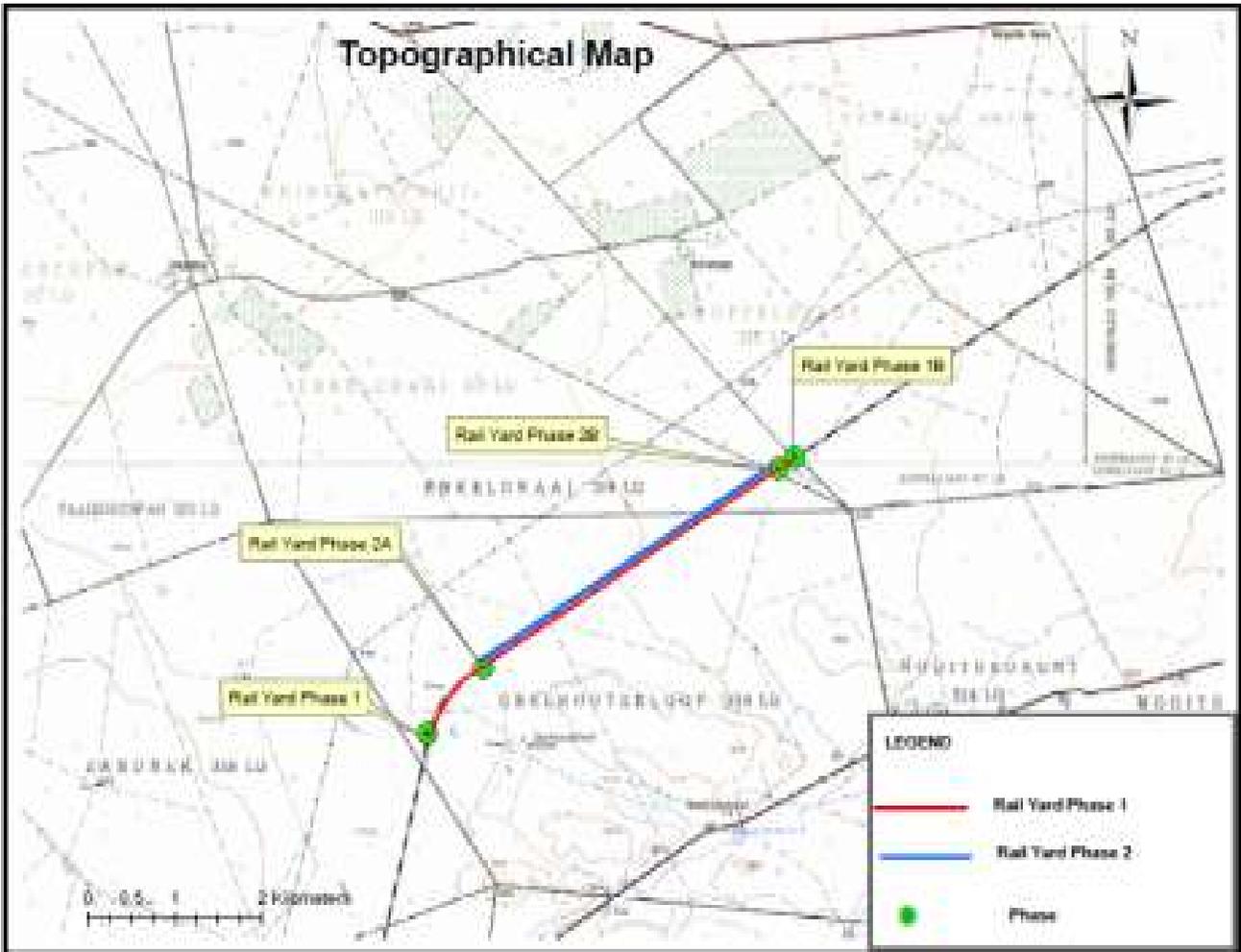
## 10. CONCLUSION AND RECOMMENDATIONS

None of the proposed development falls within the area with Very High archaeological and Palaeontological Sensitivity. Based on this study, the following conclusions were reached:

- ✓ Ground truthing of the area proposed for railway yard and associated infrastructures and associated borrow pits sites found no archaeological materials or heritage remains.
- Although no archaeological remains were found, it is possible that some significant features may be buried beneath the ground. Should buried archaeological materials and burials be encountered during the process of development, the following must apply:
  - Work must stop immediately
  - A professional archaeologist or nearest heritage authority must be contacted.

Based on this assessment which found no archaeological resources in a heavily disturbed area, we recommend that the heritage authorities approve the project as planned.

## 11. TOPOGRAPHICAL, GOOGLE EARTH MAPS AND SURVEY SNAPSHOT





The proposed Lephale Railway yard and associated two borrow pits near Steenbok pan, HIA report Updated April 2019



Figure 12: View of the study area adopted from GPS

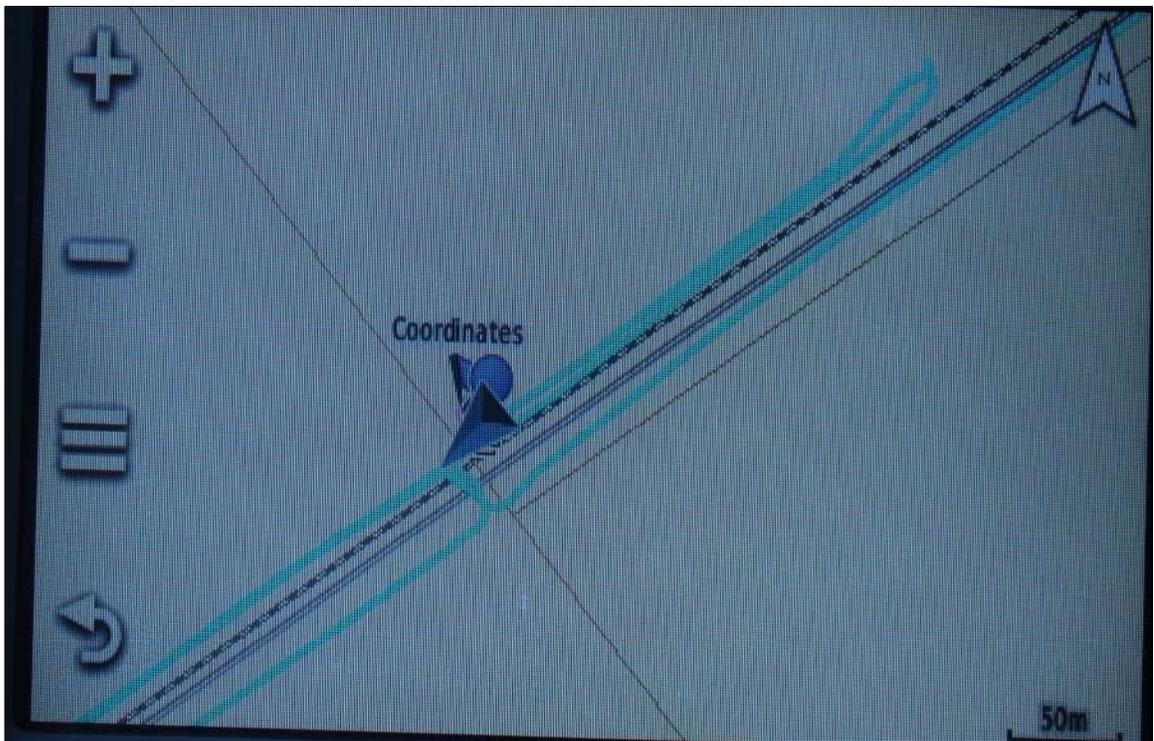
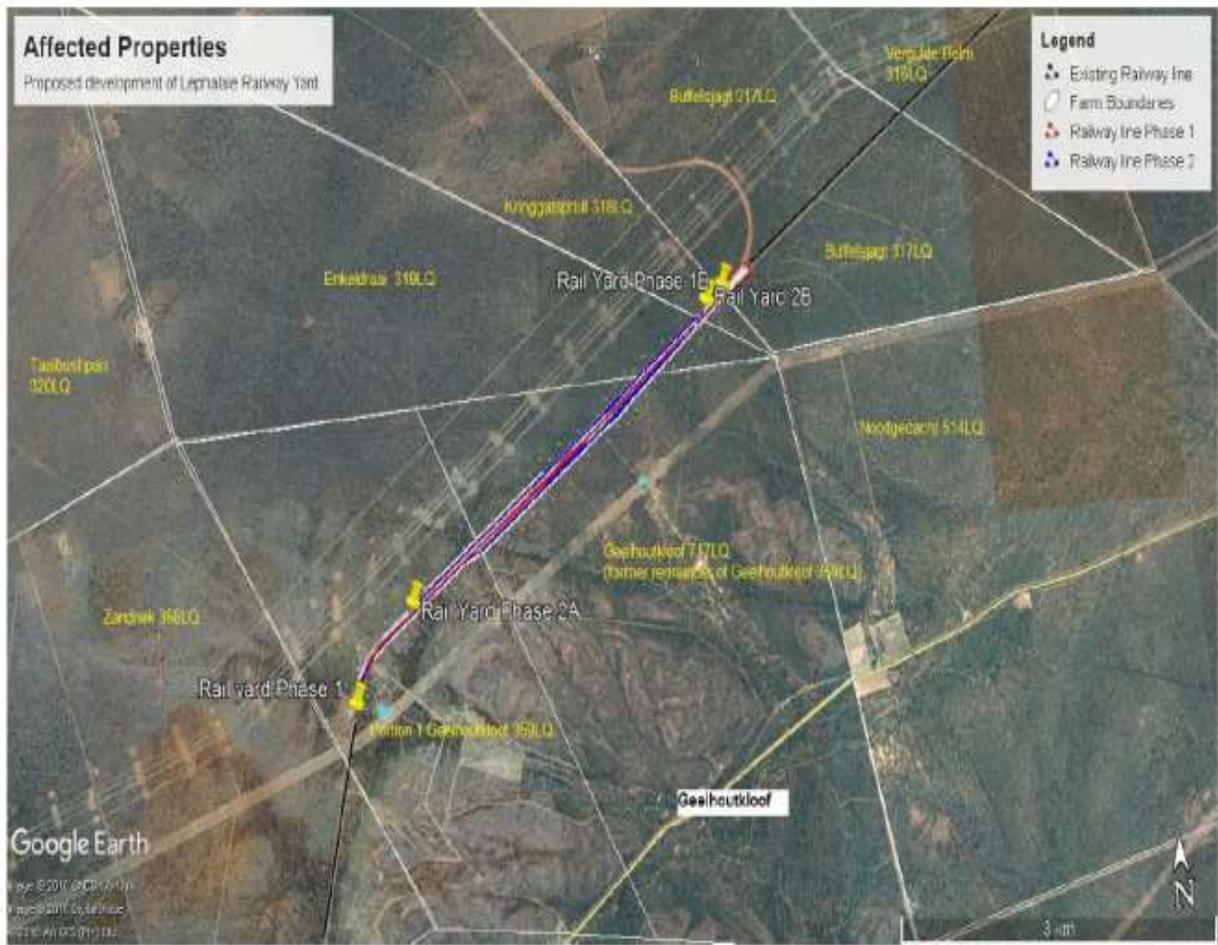


Figure 13: Survey snapshot



**Declaration of Independence and CV**

I Eric Ndivhuho Mathoho declare that I am independent consultants and have no business, financial, personal or other interest in the proposed development, application or appeal in respect of which I was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances that compromise the objectivity of performing such work.

Signed:

Handwritten signature of Eric Mathoho in black ink, appearing as 'EM' followed by 'Mathoho NE'.

.....

Eric Mathoho, MA, ASAPA Member, Archaeologist and Heritage Expert

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.

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