



**PHASE 1 HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF A RESIDENTIAL AREA NEW-LINK IN LOTHAIR, WITHIN MSUKALINGWA LOCAL MUNICIPALITY, MPUMALANGA PROVINCE**



**Date: June 2019**

**Archaeology and Heritage Services**

**PREPARED FOR**

**Sazi Environmental Consulting**

**2 Morris Street West**

**Woodmead Ext 1**

**Sandton**

**2191**

**Contact person: Anthoneth Matlala**

**Tel: 010 442 4795**

**Fax: 086 692 8639**

**Email: [amatlala@sazienvironmental.co.za](mailto:amatlala@sazienvironmental.co.za)**

**PREPARED BY**

**Vungandze Project cc**

**Corner Sunstone & Brookhill**

**Stone Arch**

**Germiston**

**1401**

**Contact person: Makhosazana Mngomezulu**

**Tel: 083 256 1292**

**Email: [fvungandze@gmail.com](mailto:fvungandze@gmail.com)**

**Affiliation: ASAPA & CRM**

## **COPYRIGHT**

The information produced in this report is for the purposes of the proposed development of a residential area new-link in Lothair. Therefore, no person is allowed to copy or reproduce this report without written consent of the author. This is with exception to the client Sazi Environmental Consulting and Transnet SOC Ltd who will be reviewing and making comments to the report.

## **DECLARATION OF INDEPENDENCE**

This report has been compiled by Makhosazana Mngomezulu, principal archaeologist and heritage consultant. The views expressed in this report are independent of the author and no other interest was displayed during the decision-making process of the proposed development of a residential area new-link in Lothair.

A handwritten signature in blue ink, appearing to read 'M. Mngomezulu', is written over a horizontal line.

SIGNATURE:

## TERMINOLOGY

<b>BP</b>	Before Present
<b>EIA</b>	Early Iron Age
<b>MIA</b>	Middle Iron Age
<b>LIA</b>	Late Iron Age
<b>ESA</b>	Early Stone Age
<b>MSA</b>	Middle Stone Age
<b>LSA</b>	Late Stone Age
<b>ya</b>	years ago
<b>Ibid</b>	<i>Ibidem</i> , Latin word meaning same as the previous source
<b>HIA</b>	Heritage Impact Assessment
<b>MPHRA</b>	Mpumalanga Provincial Heritage Resources Authority
<b>SAHRA</b>	South African National Resources Agency
<b>SAHRIS</b>	South African Heritage Resources Information System
<b>NHRA</b>	National Heritage Resources Act
<b>SAPS</b>	South African Police Services

## DEFINITIONS

ESA dates between 2 million ya to 2 00 000 BP. Industries associated with this time period includes Oldowan, Acheulean and Fauresmith. ESA stone tools include hammer stones, flakes, cores, handaxes and cleavers (Pelser 2009).

MSA dates between 2 00 000 and 25 000 to 20 000 BP, this varies with location. Industries associated with this time period includes the Howieson's Poort. The stone tools which characterise this period include scrapers, blades, points and flake.

LSA which dates between 25 000 and 20 000 to 2 000 BP. Stone tools of this period are characterised by their small size; this includes backed knives and borers (Pelser 2009).

EIA dates to AD 200 – 900 (Huffman 2007).

MIA dates to AD 900 – 1300 (ibid).

LIA dates to AD 1300 – 1840 (ibid).

## EXECUTIVE SUMMARY

Transnet SOC Ltd proposes to develop a residential area which encompasses 6 household with approximately 65 dwellers in Lothair, Mpumalanga Province. The development footprint for the proposed residential development is of 2.7 ha extent. This scope of work focuses specifically on the Lothair to Nerston section that requires the construction of the new railway line.

Vungandze Projects has been appointed to undertake a Phase 1 Heritage Impact Assessment in terms of the heritage significance on the proposed site.

During the physical survey conducted on 12 June 2019, no heritage resources were found within the proposed, however three burial ground graves were found in the vicinity of the site but outside of the proposed development area at a distance of approximately 100m. As such, the proposed site is viable for the proposed project in terms of heritage.

The report will be submitted to the Mpumalanga Provincial Heritage Resources Authority through SAHRIS (South African Resources Information System) for comments and for a decision as per the National Heritage Resources Act (Act No 25 of 1999). The proposed project can proceed from a heritage perspective pending a decision from SAHRA.

## Project Structure

<b>Introduction</b>	<ul style="list-style-type: none"><li>• Report background</li><li>• Methodology</li><li>• Assumptions &amp; limitations</li></ul>
<b>Project locality</b>	<ul style="list-style-type: none"><li>• Location (include mapping)</li><li>• Heritage Background</li></ul>
<b>Findings</b>	<ul style="list-style-type: none"><li>• Types of findings</li><li>• Mapping of findings</li><li>• Assessment of findings</li><li>• Level of significance</li><li>• Possible impacts</li></ul>
<b>Discussion</b>	<ul style="list-style-type: none"><li>• Evaluation of findings in relation of the historical background of the study area</li></ul>
<b>Recommendations &amp; conclusion</b>	<ul style="list-style-type: none"><li>• Mitigation measures</li></ul>
<b>Additional Information</b>	<ul style="list-style-type: none"><li>• Applicable Legislation</li></ul>

## Contents

1. Introduction .....	9
2. Terms of Reference (ToR) .....	10
3. Methodology .....	10
3.1 Assumptions .....	14
3.2 Limitations .....	15
4. Locality Area .....	15
5. Images of the study area .....	18
6. Historical Background of the study area .....	22
6.1 Stone Age Archaeology: .....	22
6.2 Iron Age Archaeology .....	22
6.3 Previously conducted heritage studies .....	24
7. Findings .....	25
8. Impact Assessment .....	28
8.1 Site Significance .....	31
9. Recommendations and Chance findings .....	31
10. Conclusion .....	32
11. References .....	33
12. Legislation .....	35
12.1 Section 3 of the NHRA 25 of 1999 .....	35
12.2 Section 36 of NHRA 25 of 1999 .....	37
12.3 Section 38 of NHRA 25 of 1999 .....	39

## LIST OF FIGURES

<i>Figure 1: Locality map of the study area .....</i>	<i>16</i>
<i>Figure 2: Close view of locality map. ....</i>	<i>17</i>
Figure 3: East view of the proposed development site .....	18
Figure 4: Open land of the proposed development site .....	18
Figure 5: West view of the proposed development site .....	19
Figure 6: Cattle grazing within the proposed site development .....	19
Figure 7: Middle point of the proposed development site .....	20
Figure 8: Rail way line parallel to the main road .....	20
Figure 9: Mud house, current residential area. ....	21

Figure 10: Wooden house, current residential area. ....	21
Figure 11: Map depicting graves in relation to the proposed site.....	25
Figure 12: The first grave marked with stone cairns. ....	26
Figure 13: The second grave marked with stone cairns.....	26
Figure 14: Concrete marked grave .....	27
Figure 15: Marked headstone with engraving 1973 Abigale Nkosi.....	27
Figure 16: Marked grave engraved Abigale Nkosi.....	28

## LIST OF TABLES

Table 1: Site significance rating according to SAHRA. ....	11
Table 2: The significance weighing for each potential impact are as follows:.....	14
Table 3: Rating of the heritage resource found on study area. ....	28
Table 4: Evaluation of the impacts of the project on the heritage resource <b>WITHOUT</b> mitigation measures.....	29
Table 5: Evaluation of the impacts of project on the structures <b>WITH</b> mitigation measures. ....	30



## 1. INTRODUCTION

Vungandze Projects was appointed by Sazi Environmental Consulting to conduct a phase 1 heritage impact study for the proposed development of a residential area new-link in Lothair, within Msukalingwa Local Municipality in Mpumalanga Province. The Swazi Rail Link is a trans-border rail link project between South Africa and Swaziland and is a joint inter railway strategic initiative between Transnet SOC Ltd and Swaziland Railway. The development of the link between Lothair in South Africa and Sidvokodvo in Swaziland, aims to create a dedicated General Freight Business (GFB) corridor for Transnet whilst providing much needed additional capacity for Swaziland Railway. The new link will also provide Swaziland with a dedicated export line to the strategically important Region and will encourage businesses to switch from road to rail.

Transnet SOC Ltd proposes to develop a residential area which encompasses 6 household with approximately 65 dwellers in Lothair, Mpumalanga Province. The development footprint for the proposed residential development is of 2.7ha extent. This scope of work focuses specifically on the Lothair to Nerston section that requires the construction of the new railway line.

According to the National Heritage Resources Act (Act 25 of 1999), any person who intends to undertake a development must conduct a Heritage Impact Assessment to determine if there are any heritage resources along and within the proposed project and if any resources are found, mitigation measures and recommendations for the protection of such resources need to be adhered to. Below is the heritage act with reference to the proposed project and why a heritage impact assessment should be conducted:

Based on Section 38 under Heritage Resources Management of the National Heritage Act 25 of 1999 the heritage resources in South Africa should be managed in the following:

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

(c) any development or other activity which will change the character of a site—

(i) exceeding 5 000 m<sup>2</sup> in extent” (see appendix A for the Heritage Act).

The aim of this report is to outline anticipated impacts of the proposed development of a residential area new-link in Lothair on the heritage resources that may be found; if whether or not the chosen sites are suitable for such a development in terms of heritage; and provide recommendations/mitigation measures as a way forward.

## 2. TERMS OF REFERENCE (TOR)

The approach used for this report was:

- Undertake a Phase 1 HIA in accordance with the NHRA;
- Identify and map all heritage resources in the proposed area and its surroundings, as defined in Section 3 of the NHRA, including archaeological sites on or close (within a 100m boundary of the site) to the proposed area;
- Assess the significance of any identified resources in terms of the heritage assessment criteria as set out in the South African Heritage Resources Agency (SAHRA) regulations;
- Provide mitigation measures to safeguard heritage resources identified on study area; and
- Comply with specific requirements and guidelines of Mpumalanga Provincial Heritage Resources Authority (MPHRA) and SAHRA;
- Submit final report to SAHRIS for comments and decision making.

## 3. METHODOLOGY

The physical survey was conducted and completed on 12 June 2019. This report is prepared according to the NHRA. Background research of the study area was conducted using literature such as books, journals, previously conducted HIA's on the study area and the internet before and after the site visit. The purpose of the research prior to the physical survey was to acquire information as to what to expect in the study area, the site visit was completed to identify heritage resources that may be impacted due to the proposed development of a residential area new-link in Lothair.

A heritage resource means any place or object of cultural significance [NHRA1999 Act No. 25 of 1999]. The NHRA was used as a source of reference to identify what is known as a heritage resource (see Appendix A Section 3 for list of heritage resources).

The survey was conducted on foot in order to record and locate any heritage resources within the study areas. The table from SAHRA Regulations will be used to grade the significance and evaluate the level of impact on the heritage resources identified.

Table 1: Site significance rating according to SAHRA.

<b>FIELD RATING</b>	<b>GRADE</b>	<b>SIGNIFICANCE</b>	<b>RECOMMENDED MITIGATION</b>
National Significance (NS)	Grade 1	High Significance	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	High Significance	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	-	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction
Generally Protected C (GP.A)	-	Low Significance	Destruction

The determination of the effects of environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available from the Environmental Assessment Practitioner (EAP) through the process of the Environmental Impact Assessment (EIA). The impact evaluation of predicted impacts was undertaken through an assessment of the significance of the impacts. This is in line with specialist requirements as required by the client. For example, the request that:

The impact methodology (should) concentrate on addressing key issues. The methodology employed in the report thus allows for the evaluation of the efficiency of the process itself.

***The following Assessment Criteria is used for Impact Assessment***

Impacts can be defined as any change in the physical-chemical, biological, cultural and or socio-economic environmental system that can be attributed to humans. The significance of the aspects/impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

***The significance of the impacts will be determined through a synthesis of the criteria below:***

**Probability:** describes the likelihood of the impact actually occurring

- **Improbable:** the possibility of the impact occurring is very low, due to the circumstances, design or experience.
- **Probable:** there is a probability that the impact will occur to the extent that provision must be made therefore.
- **Highly probable:** it is most likely that the impact will occur at some stage of the development.
- **Definite:** the impact will take place regardless of any prevention plans and there can only be relied on mitigation measures or contingency plans to contain the effect.

**Duration:** the lifetime of the impact

- **Short Term:** the impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
- **Medium Term:** the impact will last up to the end of the phases, where after it will be negated.
- **Long Term:** the impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.
- **Permanent:** the impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

**Scale:** the physical and spatial size of the impact

- **Local:** the impacted area extends only as far as the activity, e.g. footprint
- **Site:** the impact could affect the whole or measurable portion of the abovementioned property.
- **Regional:** the impact could affect the area including the neighbouring residential areas.

**Magnitude/Severity: Does the impact destroy the environment, or alter its function**

- **Low:** the impact alters the affected environment in such a way that natural processes are not affected.
- **Medium:** the affected environment is altered, but functions and processes continue in a modified way.
- **High:** function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

**Significance: This is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.**

- **Negligible:** the impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.
- **Low:** the impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
- **Moderate:** the impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
- **High:** The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

The significance is calculated by combining the criteria in the following formula:

Sum (Duration, Scale, Magnitude) x Probability (*Table -2*)

S = Significance weighting; Sc = Scale; D = Duration; M = Magnitude; P = Probability

Table 2: The significance weighing for each potential impact are as follows:

Aspe	Description	Weight
<b>Probability</b>	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
<b>Duration</b>	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
<b>Scale</b>	Local	1
	Site	2
	Regional	3
<b>Magnitude/Severity</b>	Low	2
	Medium	6
	High	8
<b>Significance</b>	Sum (Duration, Scale, Magnitude) x Probability	
	Negligible	≤20
	Low	>20≤40
	Moderate	>40≤60
	High	>60

### 3.1 Assumptions

---

It was assumed based on the literature review that the study area may yield heritage resources such as burial grounds and graves; and during the physical survey there were no heritage

resources within the project area. However, burial ground and graves were found in the vicinity of the site but outside of the proposed development area at a distance of approximately 100m.

### **3.2 Limitations**

---

No limitations were encountered on site during the survey.

## **4. LOCALITY AREA**

The proposed development of a residential area will be located on Portion 9 of farm Bloemkrans no. 121 IT Lothair, Mpumalanga province (Figure 1 and 2 below). The site is located in an area zoned mainly for farming purposes as per Msukalingwa Local Municipality SDF, which is also in close proximity to the Lothair industrial, commercial, residential and Transnet Freight Rail Timber Loading sidings from the middle point of the site with GPS coordinates 26°23'46.40"S, 30°25'11.77"E.



Figure 1: Locality map of the study area





Figure 2: Close view of locality map.

## 5. IMAGES OF THE STUDY AREA



*Figure 3: East view of the proposed development site*



*Figure 4: Open land of the proposed development site*



*Figure 5: West view of the proposed development site*



*Figure 6: Cattle grazing within the proposed site development*



*Figure 7: Middle point of the proposed development site*



*Figure 8: Rail way line parallel to the main road*



Figure 9: Mud house, current residential area.



Figure 10: Wooden house, current residential area.

## 6. HISTORICAL BACKGROUND OF THE STUDY AREA

History of human activity in South Africa, as in all parts of the world, dates back to millions of years. It is important to elaborate as far back in time to enable the reader to understand what is meant by archaeological material and why is it declared a heritage resource. Archaeological materials are divided into two periods, the Stone Age and the Iron Age. Late Iron Age marks the transition between prehistory and history, a period of colonial era until recent.

### 6.1 Stone Age Archaeology:

---

The Stone Age is a time period that dates between 2 million years ago (ya) to 2000 ya. Due to the vast character found within stone tools of this period, it was then divided into three phases; Early Stone Age (ESA), Middle Stone Age (MSA) and the Late Stone Age (LSA). ESA dates between 2 million ya and 200 000 Before Present (BP). Industries associated with this time period includes Oldowan, Acheulean and Fauresmith. ESA stone tools include hammer stones, flakes, cores, hand axes and cleavers (Pelser 2009). The more refined stone tools appeared during the MSA. MSA dates between 200 000 and 25 000 to 20 000 BP, this varies with location. Industries associated with this time period includes the Howieson's Poort. The stone tools which characterise this period include scrapers, blades, points and flake. Lastly is the LSA which dates between 25 000 and 20 000 to 2 000 BP. Stone tools of this period are characterised by their small size; this includes backed knives and borers (Pelser 2009).

No Stone Age site or material was noted on the proposed site or in close proximity.

### 6.2 Iron Age Archaeology

---

According to Huffman (2007) Iron Age marks the early evidence of farming community in Southern Africa. Animal husbandry, crop farming, pottery and metal working were introduced which in due time liberated hunter gatherers to change their way of life which is less mobile (Carruthers 1990). Due to vast technological discrepancies and settlement pattern within this period, it was divided into three. The Early Iron Age (EIA) dates to AD 200 – 900, Middle Iron Age (MIA) dates to AD 900 – 1300, and the Late Iron Age (LIA) dates to AD 1300 – 1840 (Huffman 2007).

Mpumalanga consists of a number of sites recorded dating to the period of Iron Age. These sites are mostly spread across the middleveld region in Mpumalanga. This region is known as the

Bokoni region. The origins of the Koni whether they are Zulu or Pedi related remains a huge debate between historians and archaeologists; the cause being, the evidence between the two disciplines contradict each other. However, for the sake of this report we are not going to dwell much on history of the Bokoni for it is irrelevant in this case, although what is important or forms part of this report's discussion are the findings within this region.

This area stretches from Orighstad in the north to Carolina in the south, and Komati in the east. Materials associated with this region include the highly visible terraces and stonewalling, rock art engravings and paintings, pottery, hoes, giant bored stones and beads. It all began with the type of raw material found within the area. Post sixteenth century marks the paradigm shift of using timber as a building material to a common use stones, as black farming communities expanded from the lower altitude bushvelds to higher altitude grasslands (Delius, Maggs & Schoeman 2014). The reason behind the shift and material found is:

“Most of the farming communities who lived in the bushveld relied on timber for the building of their houses, stock pens, courtyards and granaries but the shortage of trees in the grasslands meant that the other raw materials had to be found to replace timber as a building material to a greater or lesser extent, and the main material that was substituted for timber was stone. In all the grassland areas stone became an important building material, particularly for cattle pens, but sometimes also for courtyards, surrounding walls and even for houses. It was in Bokoni and the Mpumalanga escarpment that the use of stone as a building material became much more extensive than anywhere else in South Africa” (Delius et al 2014).

More evidence of these stonewall settlements are found in the drainage basin of the Steelpoort, Sabi, Crocodile and Komati rivers (Mason 1968; Evers 1973, as cited in Swanepoel, Esterhuysen & Bonner 2008). When farming communities arrived in this region, they found that it has been previously occupied or they may have had contact with the occupants, and these were hunter-gatherers. Their evidence of occupation is seen in shelters and open-air sites. Such evidence includes rock art paintings such as those found in Carolina and Waterval-Boven, stone tools and pottery.

Hoes are other common materials found in association with this period in this region. Hoe is an iron made tool inserted in a wooden handle with a hole. Initially it was used mainly for agricultural production. However, in this area mostly that were found were unworn or not yet in use. According to research, it is thought that it was used for ilobolo whereby there would be carefully stored underground for future use in marriage contrasts (Delius et al 2014).

The other common material thought to have played a role in this region during this time period and even in the present, is the giant bored stone. A bore stone is round with a hole in the middle to make space for a wooded handle. Their purpose is mainly to give weight to the stick when digging undergrounds foods like bulbs; a very common tool for hunter-gatherers. This one however found in this region was rather unusual with an enormous size as compared to the well-known hunter-gatherer bored stone. According to Delius et al (2014), some stones have been recorded as coming from the terraces themselves, while many others are least linked to farms where terraces occur. This means their purposes is rather different from the small one's hunter-gatherers use or they may have served the same purpose just on a bigger scale, because remember, the hunter-gatherers lived a nomadic way of life thus they could not afford to carry around such a heavy tool.

Despite the history of Iron Age sites and material recorded in the area of Mpumalanga, none were observed on the proposed site or in close proximity.

### **6.3 Previously conducted heritage studies**

---

Previously a cultural heritage resources impact assessment for the proposed Swaziland Rail Link, Western Section was conducted by van Schalkwyk in 2014 and had the following heritage resources findings:

- “Old silos adjacent to the railway line and station;
- Part of the old station at Estancia. Consists of two semi-detached houses. Probably used as accommodation for the station personnel;
- The station at Burgerspan. Although the various buildings have been demolished, the water tanks and water intake point are still standing. This is reminiscent of the by-gone days of steam locomotives;
- The station building at Lothair. It is still in use and as a result is in a good condition;
- A large number of culverts built with dressed sandstone were identified on all sections of the existing line;
- A three-span metal truss bridge across the Vaal River has been identified;
- One formal cemetery has been identified. In addition, six informal burial places have been identified. The latter six are all located inside or directly adjacent to the railway servitude.



## 7. FINDINGS

During the physical survey, no heritage resources found within the boundary of the proposed site. However, three graves were found approximately 100m southwest of the boundary of the proposed site (figure 11 below). The graves found were three (3), two (2) were marked with stone cairns (figure 12-13 below) and the other one was marked with concrete and engraved “Nkosi Abigale 1973” (figure 14-16 below).



Figure 11: Map depicting graves in relation to the proposed site.



*Figure 12: The first grave marked with stone cairns.*



*Figure 13: The second grave marked with stone cairns.*



*Figure 14: Concrete marked grave*



*Figure 15: Marked headstone with engraving 1973 Abigale Nkosi.*



Figure 16: Marked grave engraved Abigale Nkosi.

## 8. IMPACT ASSESSMENT

The proposed development of a residential area new-link in Lothair has no chance of impacting the heritage resources found in close proximity of the proposed site unless proposed recommendations are not adhered to. This section evaluates the extent of the impact WITH and WITHOUT mitigation measures in relation to the project under study.

Using table 1 from the methodology which is now labelled table 3, the heritage resources identified on site can be rated as follows:

Table 3: Rating of the heritage resource found on study area.

Heritage Resource Identified	Field Rating & Grading	Significance	Recommended Mitigation	Coordinates
Burial grounds and graves	Generally Protected A	High/Medium	Mitigation before destruction	26°23'49.12"S 30°25'06.20"E

Table 4: Evaluation of the impacts of the project on the heritage resource **WITHOUT** mitigation measures.

Aspect	Description	Weight
<b>Probability</b>	Improbable	1
	Probable	2
	Highly Probable	4
	<b>Definite</b>	<b>5</b>
<b>Duration</b>	Short term	1
	Medium term	3
	Long term	4
	<b>Permanent</b>	<b>5</b>
<b>Scale</b>	Local	1
	<b>Site</b>	<b>2</b>
	Regional	3
<b>Magnitude/Severity</b>	Low	2
	Medium	6
	<b>High</b>	<b>8</b>
<b>Significance</b>	Sum (Duration, Scale, Magnitude) x Probability	
	Negligible	≤20
	Low	>20≤40
	Moderate	>40≤60
	<b>High</b>	<b>&gt;60</b>

**Results:  $5+2+8 \times 5 = 75$  i.e  $>60$**

This means without mitigation measures, the heritage resources such as those found on the southwest of the site will be impacted and its impact may render the project unacceptable.

Table 5: Evaluation of the impacts of project on the structures **WITH** mitigation measures.

Aspect	Description	Weight
<b>Probability</b>	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
<b>Duration</b>	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
<b>Scale</b>	Local	1
	Site	2
	Regional	3
<b>Magnitude/Severity</b>	Low	2
	Medium	6
	High	8
<b>Significance</b>	Sum (Duration, Scale, Magnitude) x Probability	
	Negligible	≤20
	Low	>20≤40
	Moderate	>40≤60
	High	>60

**Results:  $4+1+6 \times 1 = 11$  i.e.  $\leq 20$**

The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.

## 8.1 Site Significance

---

The level of significance of the site and the cultural resources varies between social, historical, spiritual, scientific and aesthetic value.

**Social value** is when a place has become a focus of spiritual, political, national, or other cultural sentiments to a majority or minority group. This may be because the site is accessible and well known, rather than particularly well preserved or scientifically important (SAHRA Regulations). No heritage resources that are of social value that were recorded on site.

**Historical value** refers to areas where historical events took place, and such events have high significance either locally, regionally, provincially or nationally. The sites showed no historical significance.

**Scientific value** refers to the importance of the study area for research purposes. The study areas seemed to have no scientific value.

**Aesthetic value** refers to the unique beauty of the site. No aesthetic value found on the proposed site.

Based on the level of significance, the proposed area has no significance from a heritage perspective.

## 9. RECOMMENDATIONS AND CHANGE FINDINGS

- During the construction phase, the contractor should keep within the proposed parameters of the site to avoid impacting on any heritage resources found on the vicinity of the proposed project site, namely; burial ground and graves;
- During construction, the graves should be barricaded/fenced off with an entrance to ensure that they are protected while allowing access for the family;
- The contractor should induct all employees on the importance of heritage sites and resources that they should not be impacted in any way. This is to ensure that even if any heritage resources are found during the construction phase or exposed due to construction activities, should by no means be impacted or destroyed;

- Should any heritage resources be found on site during excavation; be it archaeological artefacts such as stone tools and pottery; burial grounds and graves and structures; the contractor should cease construction immediately and contact the client. A heritage expert should be called to site to assess the significance of the archaeological artefacts and the impacts of the proposed activities on such artefacts, and then provide mitigation measures.
- The possibility of uncovering unearthed burial grounds and graves during excavation should not be ruled out. Should potential human remains be found on site, the contractor should cease construction immediately and the South African Police Service and the client should also be contacted. Should the remains be below 60 years old since time of death, it is considered a forensic case and further investigations will be conducted by the police and should the remains be above 60 years old since time of death, it becomes a South African Heritage Resources Agency case. This means an archaeologist should be called on site to remove the remains at the expense of the client.

## 10. CONCLUSION

In conclusion, based on the findings of the survey the proposed site has no heritage resources. As such, it has low significance from a heritage perspective. The burial ground and graves found fall outside the boundary of the proposed site; it is therefore recommended that the developer keep within the boundary to avert any impacts on these heritage resources. Chances of finding other burial grounds and graves on the proposed site is still a possibility given the ones found outside the proposed boundary and those found by van Schalkwyk 2014 during a study on the area. It is important to note that chances of any other heritage resources on the proposed sites during the construction phase cannot be ruled out. The proposed project may proceed provided mitigation measures and recommendations provided are adhered to and implemented.

The final report will be submitted on SAHRIS for review and for a decision. Furthermore, subject to approval from SAHRA we recommend the approval to proceed with the proposed development of a residential area new-link in Lothair, within Msukalingwa Local Municipality in terms of the NHRA.



## 11. REFERENCES

Delius, P; Maggs, T. & Schoeman, A. 2014. *Forgotten World: The stone walled settlements of the Mpumalanga escarpment*. Wits University Press. South Africa.

Huffman, T. N 2007. *Handbook to the Iron Age*. The archaeology of Pre-Colonial farming societies in southern Africa. University of KwaZulu Natal Press. South Africa.

National Heritage Resources Act (Act No. 25 of 1999).

Pelser, A. 2009. Travelling through Time: Archaeology and the Vredefort Dome. In: Reimold, U. & Gibson, R. (eds) *Meteorite Impact! The Danger from Space and South Africa's Mega-Impact, the Vredefort Structure (Third Edition)*: 164-178. Johannesburg: Springer.

SAHRA APM. May 2007. Guidelines: Minimum standards for the archaeological and paleontological components of impact assessment reports.

Swanepoel, N; Esterhuysen, A. & Bonner, P. 2008. *Five Hundred Years Rediscovered: South African Precedents and Prospects. 500-year initiative conference proceedings*. Wits University Press. South Africa.

van Schalkwyk, J. A. February 2014. Cultural Heritage Resources Impact Assessment for the proposed Swaziland Rail Link, Western Section, Mpumalanga Region.

**APPENDIX A**

LIST OF LEGISLATION APPLICABLE TO THE SITE

## 12. LEGISLATION

National Heritage Resources Act 25 of 1999

### 12.1 Section 3 of the NHRA 25 of 1999

---

According to Section 3 under **National Estate** of the National Heritage Act 25 of 1999 the heritage resources in South Africa includes the following:

“(1) For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.

(2) Without limiting the generality of subsection (1), the national estate may include –

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage; (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and paleontological sites;
- (g) graves and burial grounds, including—
  - (i) ancestral graves;
  - (ii) royal graves and graves of traditional leaders;
  - (iii) graves of victims 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 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) objects recovered from the 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) objects of scientific or technological interest; and
  - (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).
- (3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of –
  - (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 organisation of importance in the history of South Africa; and
- (i) sites of significance relating to the history of slavery in South Africa".

## **12.2 Section 36 of NHRA 25 of 1999**

---

According to Section 36 under **Burial grounds and graves** of the National Heritage Act 25 of 1999 the graves in South Africa are protected as follows:

- (1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.
- (2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.
- (3)(a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—
  - (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
- (4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
- (5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—
  - (a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and
  - (b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.
- (6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers 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 resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority—
  - (a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
  - (b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

- (7)(a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.
- (b) The Minister must publish such lists as he or she approves in the Gazette.
- (8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.
- (9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

### **12.3 Section 38 of NHRA 25 of 1999**

---

According to Section 38 under Heritage resources management of the National Heritage Act 25 of 1999 the heritage resources in South Africa should be managed in the following:

“(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 existing heritage agreements made in terms of section 42 must continue to apply.