

# HERITAGE IMPACT ASSESSMENT

(REQUIRED UNDER SECTION 38(8) OF THE NHRA (No. 25 OF 1999))

## FOR THE PROPOSED NELSONSKOP FARM TOWNSHIP DEVELOPMENT, LEPHALALE, LIMPOPO PROVINCE

### Type of development:

Township Development with associated infrastructure.

### Client:

Tekplan Environmental Consultants

### Client info:

Danie Combrink

**E – mail:** [tecoplan@mweb.co.za](mailto:tecoplan@mweb.co.za)

### Developer:

TBC



### HCAC - Heritage Consultants

Private Bag X 1049

Suite 34

Modimolle

0510

Tel: 082 373 8491

Fax: 086 691 6461

E-Mail: [jaco.heritage@gmail.com](mailto:jaco.heritage@gmail.com)

### Report Author:

Mr. J. van der Walt

### Project Reference:


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July 2017

## APPROVAL PAGE

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Report Title	Heritage Impact Assessment Nelson's Kop
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## REPORT OUTLINE

Appendix 6 of the GNR 326 EIA Regulations published on 7 April 2017 provides the requirements for specialist reports undertaken as part of the environmental authorisation process. In line with this, Table 1 provides an overview of Appendix 6 together with information on how these requirements have been met.

**Table 1. Specialist Report Requirements.**

Requirement from Appendix 6 of GN 326 EIA Regulation 2017	Chapter
(a) Details of - (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae	Section a Section 11
(b) Declaration that the specialist is independent in a form as may be specified by the competent authority	<i>Declaration of Independence</i>
(c) Indication of the scope of, and the purpose for which, the report was prepared	Section 1
(cA) an indication of the quality and age of base data used for the specialist report	Section 3.4 and 7.1.
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	9
(d) Duration, Date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 3.4
(e) Description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used	Section 3
(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 8 and 9
(g) Identification of any areas to be avoided, including buffers	Section 8 and 9
(h) Map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	Section 8
(I) Description of any assumptions made and any uncertainties or gaps in knowledge	Section 3.7
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity <b>including identified alternatives on the environment</b> or activities;	Section 9
(k) Mitigation measures for inclusion in the EMPr	Section 9
(l) Conditions for inclusion in the environmental authorisation	Section 9
(m) Monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 9
(n) Reasoned opinion - (i) as to whether the proposed activity, activities or portions thereof should be authorised; (iA) regarding the acceptability of the proposed activity or activities; and (ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	Section 9.2
(o) Description of any consultation process that was undertaken during the course of preparing the specialist report	Section 6
(p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Refer to EIA report
(q) Any other information requested by the competent authority	Section 9

## Executive Summary

HCAC was appointed to conduct a Heritage Impact Assessment to determine the presence of cultural heritage sites and the impact of the proposed development on these non-renewable resources. The study area was assessed both on desktop level and by a field survey. The field survey was conducted as a non-intrusive pedestrian survey to cover the extent of the development footprint.

HCAC was appointed to conduct a Heritage Impact Assessment as part of the environmental impact assessment process for the project. No raw material suitable for stone tool manufacture occurs in the study area and no ceramics or stone walls attributed to the Iron Age were recorded. Similarly, no sites of archaeological significance were recorded by other studies in the area (e.g. Huffman 1999, Van der Walt 2009, 2014 & 2015).


An independent paleontological study was conducted for the project (Millstead 2017) who concluded that his study has not identified any palaeontological reason to prejudice the project, subject to adequate mitigation programs being put in place as outlined in the report. No further mitigation prior to construction is recommended in terms of Section 35 for the proposed development to proceed.

In terms of the built environment of the area (Section 34), no standing structures older than 60 years occur within the study area. In terms of Section 36 of the Act no burial sites were recorded. If any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area. The proposed development will not impact negatively on significant cultural landscapes or views as the study area consist of a densely developed zone relating to infrastructure, mining and housing. During the public participation process conducted for the project no heritage concerns was raised.

Due to the lack of significant heritage resources in the study area the impact of the proposed project on heritage resources is considered low and it is recommended that the proposed project can commence on the condition that the following recommendations are implemented as part of the EMP and based on approval from SAHRA:

- Implementation of a chance finds procedure.
- An appropriate staff member (e.g., the environmental officer) of the company responsible for the construction process be trained in recognition of the types of fossils that may be expected to be encountered in the envisioned excavations.
- The relevant employee should make regular and thorough examinations of all excavations that occur within the sediments of the Karoo Supergroup and Cenozoic regolith.
- Should any fossil materials be identified, the excavations in that area should be halted in that location and SAHRA informed of the discovery.
- A palaeontologist must then be appointed by the company to evaluate the fossil deposits and make the necessary recommendations regarding damage mitigation of the fossils materials.
- The excavations associated with the project should be inspected by a palaeontologist 2 times a year (i.e., once every 6 months) while they are occurring to ensure that no fossil materials are being damaged or destroyed.

## Declaration of Independence

<b>Specialist Name</b>	Jaco van der Walt
<b>Declaration of Independence</b>	<p>I declare, as a specialist appointed in terms of the National Environmental Management Act (Act No 108 of 1998) and the associated 2014 Environmental Impact Assessment (EIA) Regulations, that I:</p> <ul style="list-style-type: none"> <li>• I act as the independent specialist in this application;</li> <li>• I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;</li> <li>• I declare that there are no circumstances that may compromise my objectivity in performing such work;</li> <li>• I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;</li> <li>• I will comply with the Act, Regulations and all other applicable legislation;</li> <li>• I have no, and will not engage in, conflicting interests in the undertaking of the activity;</li> <li>• I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;</li> <li>• All the particulars furnished by me in this form are true and correct; and</li> <li>• I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.</li> </ul>
<b>Signature</b>	
<b>Date</b>	26/07/2017

### a) Expertise of the specialist

Jaco van der Walt has been practising as a CRM archaeologist for 15 years. He obtained an MA degree in Archaeology from the University of the Witwatersrand focussing on the Iron Age in 2012 and is a PhD candidate at the University of Johannesburg focussing on Stone Age Archaeology with specific interest in the Middle Stone Age (MSA) and Later Stone Age (LSA). Jaco is an accredited member of ASAPA (#159) and have conducted more than 500 impact assessments in Limpopo, Mpumalanga, North West, Free State, Gauteng, KZN as well as he Northern and Eastern Cape Provinces in South Africa.

Jaco has worked on various international projects in Zimbabwe, Botswana, Mozambique, Lesotho, DRC Zambia and Tanzania. Through this he has a sound understanding of the IFC Performance Standard requirements, with specific reference to Performance Standard 8 – Cultural Heritage.

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**ABBREVIATIONS**

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BGG Burial Ground and Graves
BIA: Basic Impact Assessment
CFPs: Chance Find Procedures
CMP: Conservation Management Plan
CRR: Comments and Response Report
CRM: Cultural Resource Management
DEA: Department of Environmental Affairs
EA: Environmental Authorisation
EAP: Environmental Assessment Practitioner
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Programme
ESA: Early Stone Age
ESIA: Environmental and Social Impact Assessment
GIS Geographical Information System
GPS: Global Positioning System
GRP Grave Relocation Plan
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NID Notification of Intent to Develop
NoK Next-of-Kin
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

*\*Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

**GLOSSARY**

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

## 1 Introduction and Terms of Reference:

Heritage Contracts and Archaeological Consulting CC (**HCAC**) was appointed to conduct Heritage Impact Assessment for the proposed Nelsonskop Farm Township Development, Lephalale, Limpopo Province. The report forms part of the Environmental Impact Assessment (EIA) Report and Environmental Management Programme Report (EMPR) for the development.

The aim of the study is to survey the proposed development footprint to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999). The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, review of relevant literature; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey, no heritage sites were identified. General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report. SAHRA as a commenting authority under section 38(8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) require all environmental documents, compiled in support of an Environmental Authorisation application as defined by NEMA EIA Regulations section 40 (1) and (2), to be submitted to SAHRA. As such the Environmental Assessment report and its appendices must be submitted to the case as well as the EMPR, once it's completed by the Environmental Assessment Practitioner (EAP).

### 1.1 Terms of Reference

#### Field study

Conduct a field study to: (a) locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points of sites/areas identified as significant areas; c) determine the levels of significance of the various types of heritage resources affected by the proposed development.

#### Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with the relevant legislation, SAHRA minimum standards and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999).

**Table 2: Project Description**

<b>Size of farm and portions</b>	The proposed Nelsonskop Farm Township Development is located on the Remainder and Portion 1 of the farm Nelsonskop 464 LQ.
<b>Magisterial District</b>	Lephalale Local Municipality
<b>1: 50 000 map sheet number</b>	2327 DA
<b>Central co-ordinate of the development</b>	23° 39' 19.1595" S, 27° 36' 56.1490" E

**Table 3: Infrastructure and project activities**

<b>Type of development</b>	Township Development with associated infrastructure.
<b>Project size</b>	Township development measures 219 hectares although a large portion of this is already developed. The Bulk sewerage line measures 2.7km.
<b>Project Components</b>	<p>The development will include a low density residential township with erf sizes average <math>\pm 300 \text{ m}^2</math> as well as Infrastructure including roads between 12 and 16 meters wide. Other zonings to be incorporated include namely parks, police station, cemetery and a pre-school. Existing infrastructure services are to be retained to be incorporated in final layout.</p> <p>There will also be a high density residential development in accordance with the needs and requirements of Exxaro as well as a bulk sewerage pipeline.</p>



Figure 1. Provincial locality map (1: 250 000 topographical map)



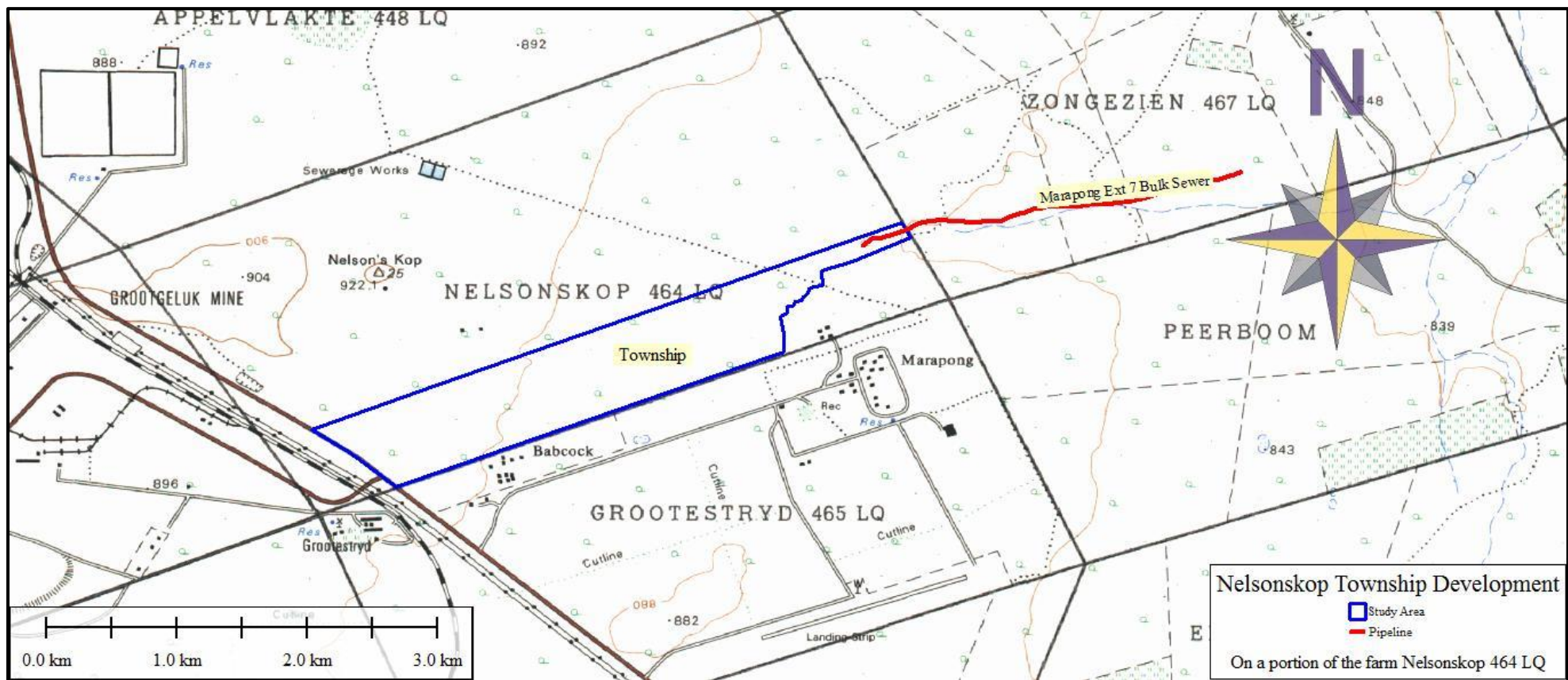


Figure 2: Regional locality map (1:50 000 topographical map).





Figure 3. Google image of the township development





Figure 4. Satellite image of the sewerage pipeline (Google Earth 2016).

## 2 Legislative Requirements

The HIA, as a specialist sub-section of the EIA, is required under the following legislation:

- National Heritage Resources Act (NHRA), Act No. 25 of 1999)
- National Environmental Management Act (NEMA), Act No. 107 of 1998 - Section 23(2)(b)
- Mineral and Petroleum Resources Development Act (MPRDA), Act No. 28 of 2002 - Section 39(3)(b)(iii)

A Phase 1 HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation.

The overall purpose of heritage specialist input is to:

- Identify any heritage resources, which may be affected;
- Assess the nature and degree of significance of such resources;
- Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- Assess the negative and positive impact of the development on these resources; and
- Make recommendations for the appropriate heritage management of these impacts.

The HIA should be submitted, as part of the impact assessment report or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will ultimately be responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and additional development information, as per the impact assessment report and/or EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA or with a proven ability to do archaeological work.

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level). Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIA's are primarily concerned with the location and identification of heritage sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision-making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation of a site, a destruction permit must be applied for with SAHRA by the applicant before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999 is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance No. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare. Authorisation for exhumation and reinternment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).



### 3 METHODOLOGY

#### 3.1 Literature Review

A brief survey of available literature was conducted to extract data and information on the area in question to provide general heritage context into which the development would be set. This literature search included published material, unpublished commercial reports and online material, including reports sourced from the South African Heritage Resources Information System (SAHRIS).

#### 3.2 Genealogical Society and Google Earth Monuments

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located; these locations were marked and visited during the field work phase. The database of the Genealogical Society was consulted to collect data on any known graves in the area.

#### 3.3 Public Consultation and Stakeholder Engagement:

Stakeholder engagement is a key component of any BAR process, it involves stakeholders interested in, or affected by the proposed development. Stakeholders are provided with an opportunity to raise issues of concern (for the purposes of this report only heritage related issues will be included). The aim of the public consultation process was to capture and address any issues raised by community members and other stakeholders during key stakeholder and public meetings. The process involved:

- Placement of advertisements and site notices
- Stakeholder notification (through the dissemination of information and meeting invitations);
- Stakeholder meetings undertaken with I&APs;
- Authority Consultation
- The compilation of an Environmental Impact Assessment (EIA) Report.

Please refer to section 6 for more detail.

#### 3.4 Site Investigation

Conduct a field study to: a) systematically survey the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points of sites/areas identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

**Table 4: Site Investigation Details**

	Site Investigation
Date	7 June 2016 and 13 July 2017 2017
Season	Winter –The vegetation in the study area was still very dense. The impact area was however sufficiently covered (Figure 4) to adequately record the presence of heritage resources.



Figure 5: Track logs of the survey of the township development in black.



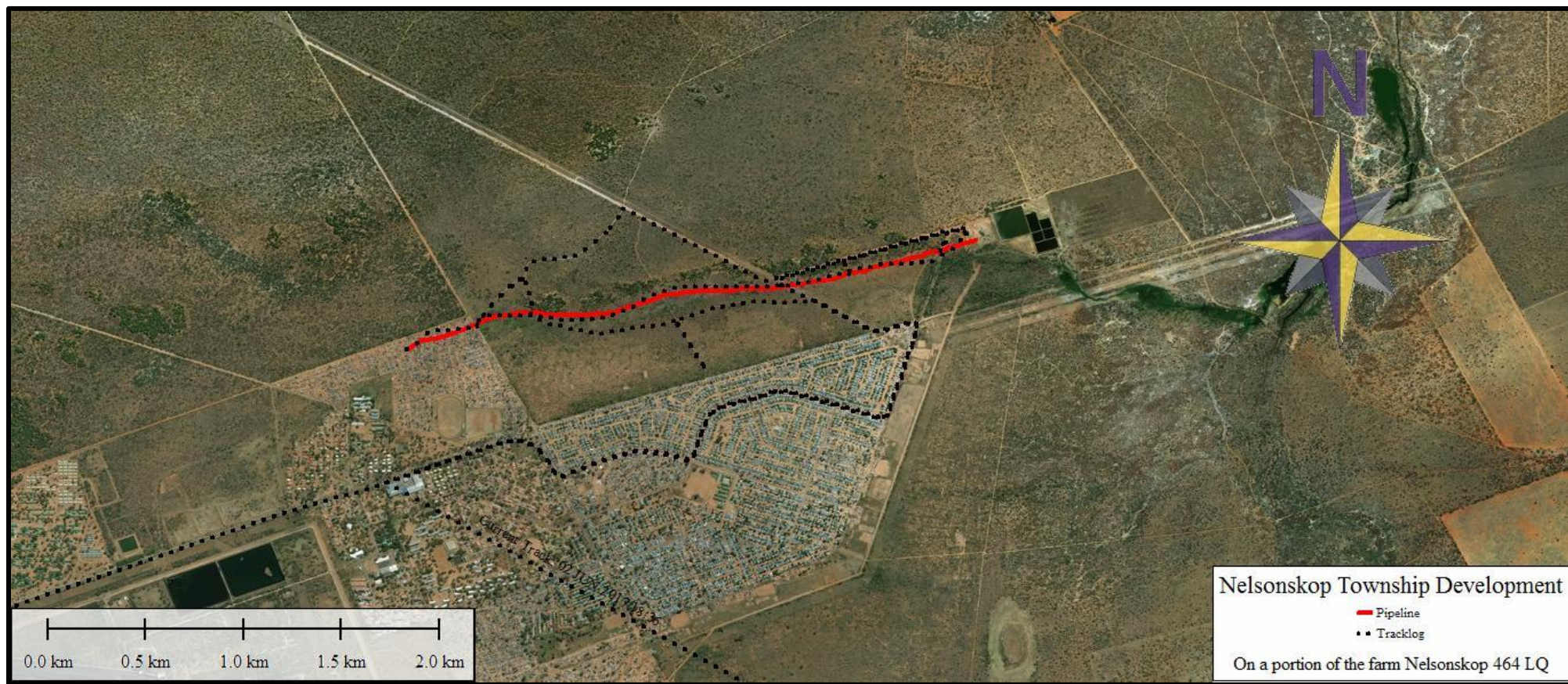


Figure 6. Track logs of the survey of the proposed sewerage line in black.

### 3.5 Site Significance and Field Rating

Section 3 of the NHRA 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:

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

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed project the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface. This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance with cognisance of Section 3 of the NHRA:

- The unique nature of a site;
- The integrity of the archaeological/cultural heritage deposits;
- The wider historic, archaeological and geographic context of the site;
- The location of the site in relation to other similar sites or features;
- The depth of the archaeological deposit (when it can be determined/is known);
- The preservation condition of the sites; and
- Potential to answer present research questions.

In addition to this criteria field ratings prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 10 of this report.

<b>FIELD RATING</b>	<b>GRADE</b>	<b>SIGNIFICANCE</b>	<b>RECOMMENDED MITIGATION</b>
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)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP. B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction



### 3.6 Impact Assessment Methodology

The criteria below are used to establish the impact rating on sites:

- The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The **duration**, wherein it will be indicated whether:
  - \* the lifetime of the impact will be of a very short duration (0-1 years), assigned a score of 1;
  - \* the lifetime of the impact will be of a short duration (2-5 years), assigned a score of 2;
  - \* medium-term (5-15 years), assigned a score of 3;
  - \* long term (> 15 years), assigned a score of 4; or
  - \* permanent, assigned a score of 5;
- The **magnitude**, quantified on a scale from 0-10 where; 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1-5 where; 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- The **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- the **status**, which will be described as either positive, negative or neutral.
- the degree to which the impact can be reversed.
- the degree to which the impact may cause irreplaceable loss of resources.
- the *degree* to which the impact can be mitigated.

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

$$S=(E+D+M) P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

### 3.7 Limitations and Constraints of the study

The authors acknowledge that the brief literature review is not exhaustive on the literature of the area. Due to the subsurface nature of archaeological artefacts, the possibility exists that some features or artefacts may not have been discovered/recorded during the survey and the possible occurrence of unmarked graves and other cultural material cannot be excluded. Similarly, the depth of the deposit of heritage sites cannot be accurately determined due its subsurface nature. This report only deals with the footprint area of the proposed development and consisted of non-intrusive surface surveys. This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components would have been highlighted through the public consultation process if relevant. It is possible that new information could come to light in future, which might change the results of this Impact Assessment.

## 4 Description of Socio Economic Environmental

The Lephalale IDP (2016 – 2017) indicated that: *“Municipal population according to the official census of 2001 was 96 102 people, comprising of 23 403 households. At that stage, the average household size was 4.1 persons. Demographic analysis of Lephalale local Municipality, and studies conducted by the Department of Water Affairs (DWA) in the past on the basis of the 2001 data, census for water service planning purpose suggested a population increase, considerably higher than the provincial population growth rate of 0.94% per year, because of the local economic growth that attracted workers from other places across the country. Population growth within Lephalale Town node is among the highest in Limpopo and reflects the influx of people to work on the power station construction and the mine expansion projects.*

*According to official census of 2001 and 2011 the households in Lephalale have increased from 20 277 with an average household size of 3.5 in 2001 to 29 880 household in 2011 reflecting a household size of 3.9. The recent census indicates a 35.8 % population increase in Lephalale Municipality against the Waterberg district population of 679 336 for the past ten years which, is phenomenally massive and require well thought strategic intervention by all spheres of government including private sector. The Statssa census, estimate population of Lephalale Municipality at 115 767 for 2011 which represent a change of 35.8% compared to 2001 census....*

*According to the census 2011 information young people between the age group of 15-34 represents majority of the total population within the Municipal area at 43.4%. Compared to a female dominance of 54% for Limpopo province Lephalale Municipality, according to Statssa information has a male dominance of more than 54%. This can be attributed to the high incidence of contract workers and male professionals coming into the Municipality in pursued of economic opportunities. The municipality has a dependency rate of 43.5% (= <15 year and 65+) and approximately 12 234 households depend on free basic service. Almost 67% of the population is of working age (between 15 and 59 years old). Unemployment amongst the youth is currently at 27% and needs urgent attention. Majority of the population (38.34%) lives under the breadline (earn less than R14 600 per year).”*

## 5 Description of the Physical Environment:

The study area is located approximately 12km to the north west of Lephalale. The footprint area for the proposed development is extremely flat with no landscape features like pans or hills. The study area is located to the west of Maropong at 23° 39' 19.1595" S, 27° 36' 56.1490" E (Figure 1).

The vegetation is predominantly Limpopo Sweet Bushveld vegetation in the Savannah biome (Mucina & Rutherford 2006). The study area is used exclusively for game farming and cattle grazing while several mine and power generating facilities occur in the wider region.



Figure 7: General Site conditions.



Figure 8: General site conditions.



Figure 9: General Site conditions



Figure 10: General site conditions.



## **6 Results of Public Consultation and Stakeholder Engagement:**

### **6.1.1 Stakeholder Identification**

Adjacent landowners and the public at large were informed of the proposed activity as part of the EIA process. Site notices and advertisements notifying interested and affected parties were placed at strategic points and in local newspapers as part of the process.

## **7 Literature / Background Study:**

### **7.1 Literature Review**

CRM reports on the area together with secondary source material, primary sources, maps and online sources the study area was contextualised. Several previous heritage studies were conducted in the general study area (SAHRIS) by van Schalkwyk (2005), Pistorius (2007), Huffman (2008), Huffman & van der Walt (2008, 2011) and van der Walt (2014). Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological and historical sites might be located.

Previous studies for the project (van der Walt 2012) revealed that pans in the area with exposed calcrete could contain Middle Stone age sites and although unlikely it might be possible to find Late Iron Age sites belonging to the *Letsibogo* ceramic *facies* that dates to between 1550 AD and 1750 AD.

#### **7.1.1 Genealogical Society and Google Earth Monuments**

No known grave sites are indicated in the study area.

## **7.2 General History of the area**

### **7.2.1 Archaeology of the area**

The archaeological record for the greater study area consists of the Stone Age and Iron Age.

#### **7.2.1.1 Stone Age**

The following background from Huffman & van der Walt (2008 & 2011) is applicable for the study area. Hominids began to make stone tools about 2.6 million years ago. Known as the Oldowan industry, most of the earliest tools were rough cobble cores and simple flakes. The flakes were used for such activities as skinning and cutting meat from scavenged animals. These early artefacts are difficult to recognize and have so far only been found in rock shelters such as the Sterkfontein Caves (Kuman, 1998).

At about 1.4 million years ago hominids started producing more recognizable stone artefacts such as hand axes, cleavers and core tools (Deacon & Deacon, 1999). Among other things these Acheulian tools were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus that had died from natural causes. Acheulian artefacts are usually found near the raw material from where they were quarried, at butchering sites, or as isolated finds. No Acheulian sites are on record near the project area.

#### **7.2.1.2 Middle Stone Age**

By the beginning of the Middle Stone Age (MSA), tool kits included prepared cores, parallel-sided blades and triangular points hafted to make spears (Volman, 1984). MSA people had become accomplished hunters by this time, especially of large grazing animals such as wildebeest, hartebeest and eland.

These hunters are classified as early humans, but by 100,000 years ago, they were anatomically fully modern. The oldest evidence for this change has been found in South Africa, and it is an important point in debates about the origins of modern humanity. In particular, the degree to which behaviour was fully modern is still a matter of debate. The repeated use of caves indicates that MSA people had developed the concept of a home base and that they could make fire. These were two important steps in cultural evolution (Deacon & Deacon, 1999).

MSA artefacts have been found in the Oliboempoort Cave to the south of Lephalale (Mason, 1962; M. van der Ryst, 2006) and in the river gravels of the Limpopo, northwest of the project area (Pistorius, 2007). A large scale survey of almost 9000ha in 2011 by Huffman and vd Walt found that Middle Stone Age sites were associated with pans and ancient drainage systems throughout the project area.

#### **7.2.1.3 Later Stone Age**

By the beginning of the Later Stone Age (LSA), human behaviour was undoubtedly modern. Uniquely human traits, such as rock art and purposeful burials with ornaments, became a regular practice. These people were the ancestors of the San (or Bushmen).

San rock art has a well-earned reputation for aesthetic appeal and symbolic complexity (Lewis-Williams, 1981). There is a single known rock art site (S23.65132 E27.58651) in the project area, on Nelsonskop 464 LQ to the east (Pistorius, 2007, van Schalkwyk 2011).

In addition to art, LSA sites contain diagnostic artefacts, including microlithic scrapers and segments made from very fine-grained rock (Wadley, 1987). Spear hunting probably continued, but LSA people also hunted small game with bows and poisoned arrows. Important LSA deposits have been excavated in Oliboompoort Cave (Mason, 1962) and other sites in the Waterberg to the south (Van der Ryst, 1998). Sites in the open are usually poorly preserved and therefore have less value than sites in caves or rock shelters. A single kopje known as Nelsonskop on an otherwise featureless landscape has engravings on the southern face of the kopje with ephemeral stone walls on top of the hill.

### **7.2.2 The Iron Age (AD 400 to 1840)**

Bantu-speaking people moved into Eastern and Southern Africa about 2,000 years ago (Mitchell, 2002). These people cultivated sorghum and millets, herded cattle and small stock and manufactured iron tools and copper ornaments. Because metalworking represents a new technology, archaeologists call this period the Iron Age. Characteristic ceramic styles help archaeologists to separate the sites into different groups and time periods. The first 1,000 years is called the Early Iron Age.

As mixed farmers, Iron Age people usually lived in semi-permanent settlements consisting of pole-and-daga (mud mixed with dung) houses and grain bins arranged around a central area for cattle (Huffman, 1982). Usually, these settlements with the 'Central Cattle Pattern' (CCP) were sited near water and good soils that could be cultivated with an iron hoe. For the project area, archaeological sites such as these are unlikely to occur except along river terraces.

Archaeologists have not yet resolved the role of a special pottery, known as Bambata, in the spread of pastoralism and mixed farming (Huffman, 2007). Some believe that Bambata pottery represents the vanguard of the Early Iron Age, or alternatively, Khoe pastoralists, while others believe it was acquired by LSA people through trade. This pottery has been found at Oliboompoort in LSA deposits (Mason, 1962; Van der Ryst, 2006) and is thus believed to exist in the general region.

Some Iron Age settlements are on record for the general area, for instance alongside the Matlabas River (Aukema in Huffman, 1990) and in Botswana (Biemond, 2005) and south of the Limpopo close to Steenbokpan (Huffman & vd Walt 2011). These sites are recognized by distinctive pottery known as the Letsibogo facies of Moloko (Huffman, 2007).

The Little Ice Age began at about AD 1300, and its impact on farming societies was particularly severe. Another major drought occurred at about AD 1650.

## **7.3 Historical Information**

Voortrekkers crossed the Vaal River in 1836, and within a few years, began to spread north. Much of the Limpopo Province contained tsetse fly, and so early Boer farmers didn't settle immediately in the area. European settlement of the region began at the beginning of the last century. Some of the first settlers, D.P. van der Westhuizen and C. Ricks, both arrived in about 1901. The study area is close to the ox-cart route to Botswana that crossed the Limpopo a few kilometres upstream from the modern border post. Some of pans were used as outspans along the route. Because the area was not suitable for grain agriculture, African farmers did not live in the area, and labour had to come from far afield. Rather the area was used primarily for hunting.

### **7.3.1. Anglo-Boer War**

No battle or concentration camps sites are located close to the study area.

### 7.3.2. Cultural Landscape

The study area is surrounded by industrial and residential developments and no significant cultural landscapes or viewsapes were noted during the fieldwork.

## 8 Findings of the Survey

It is important to note that only the development footprint of the project was surveyed. The study area is characterised by a featureless flat landscape that falls in an inhospitable environment with low rainfall. The lack of any ephemeral or permanent water sources possibly attributes to the marked paucity of archaeological sites in the study area. Paleo drainage lines and seasonal pans in the wider study area are known to contain MSA material, dating to what is referred to as a Post Howiesons Poort industry. While the Limpopo floodplain to the north was settled by Iron Age communities producing stylistic pottery known as *Letsibogo* while their herdsman utilized the calcrete plateau for summer grazing as far as 15 km from the settlements (Huffman & van der Walt 2011). More favourable water rich areas to the south of the study area in the Waterberg was also inhabited by Stone Age communities (Van der Ryst 1998) and later by Iron Age groups producing stylistic pottery known as *Eiland* as well as Ndebele groups (Aukema 1989; Huffman 2007). Tsetse fly and the lack of good agricultural conditions also meant that the area was sparsely inhabited in the late 1800's and early 1900's.

Archaeological visibility is low as the area has been fallow for a number of years and grass cover is extremely high. The proposed sewerage line follows an existing line that severally leaks in some places (Figure 11) that originates from an existing waste water treatment works (Figure 12). Earth moving activities, possibly part of mining activities, impacted on the study area, especially the eastern portion of the township development area. A large Eskom staff village (Figure 13) occupies the central portion of the study area and is clearly visible from areal imagery (Figure 5). In the western portion of the study area (Figure 15) is a residential dwelling (not older than 60 years) and the remains of several dwellings marked by cement slabs (Figure 14) at S23° 39' 35.2" E27° 35' 16.6".



Figure 11: Leaking sewerage line.



Figure 12. Existing waste water treatment works.



Figure 13. Eskom village.



Figure 14. Cement slab.



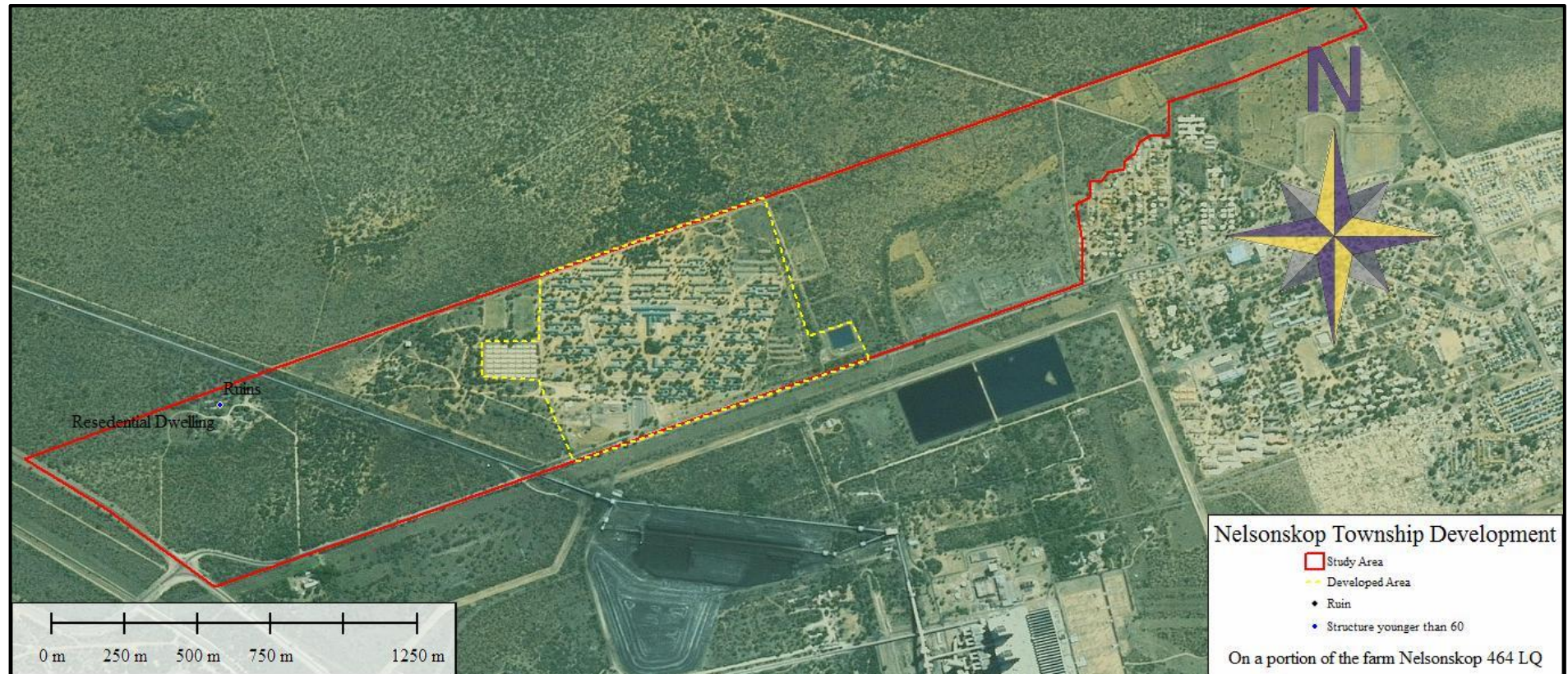


Figure 15: Distribution of features within the township development area.

In terms of the national estate as defined by the NHRA no sites of significance were found during the survey as described below.

### 8.1 Built Environment (Section 34 of the NHRA)

No standing structures older than 60 years occur in the study area.

### 8.2 Archaeological and palaeontological resources (Section 35 of the NHRA)

During the survey, no archaeological sites were recorded. The larger study area is however not void of heritage sites and a single kopje known as Nelsonskop on an otherwise featureless landscape has engravings on the southern face of the kopje with ephemeral stone walls on top of the hill. This site is located approximately 1 km to the north of the study area and will not be impacted on by the development.

An independent paleontological study was conducted by Millstead (2017). The study determined that: *“Previous work in the immediate region by the author suggests that only minimal outcrops of bedrock will be present, if any, within the project area (due to the ubiquitous regolith cover). However, published geological data suggests the regolith cover is underlain by sedimentary rocks of the Swartrant and Clarens Formations of the Karoo Supergroup and lavas of the Jurassic Letaba Formation. The potential for a negative impact on the fossil heritage of the area can be quantified in the following manner. The probability of a negative impact on the palaeontological heritage of the Cenozoic regolith is assessed as low as is that for the Clarens Formation. Where plant macrofossil assemblages are located they frequently contain dense accumulations and so often plant macrofossils are more commonly encountered than vertebrate fossils; as such the potential for negative impact upon the floras of the Swartrant Formation is assessed as medium. The potential for any negative impacts posed by the proposed project on the palaeontological heritage of the Letaba formation is assessed as being nil. Despite the low to medium potential for a negative impact upon the palaeontological heritage of the Karoo Supergroup rocks and the low probability of an impact upon the Cenozoic regolith, these units (or their stratigraphic equivalents) are known elsewhere to contain fossil faunas and floras of the highest scientific and cultural significance elsewhere in South Africa. As a result, any negative impact could be of high significance.*

*The project has been assessed as being socially beneficial, herein, as it would provide accommodation and a community to low income people. The possibility of any negative impact on the palaeontological heritage of the project area could be minimised by the implementation of the following damage mitigation procedures:*

- *An appropriate staff member (e.g., the environmental officer) of the company responsible for the construction process be trained in recognition of the types of fossils that may be expected to be encountered in the envisioned excavations.*
- *The relevant employee should make regular and thorough examinations of all excavations that occur within the sediments of the Karoo Supergroup and Cenozoic regolith.*
- *Should any fossil materials be identified, the excavations in that area should be halted in that location and SAHRA informed of the discovery.*
- *A palaeontologist must then be appointed by the company to evaluate the fossil deposits and make the necessary recommendations regarding damage mitigation of the fossils materials.*
- *The excavations associated with the project should be inspected by a palaeontologist 2 times a year (i.e., once every 6 months) while they are occurring to ensure that no fossil materials are being damaged or destroyed.*

*A potential positive outcome of these mitigation protocols could be that fossil materials become available for scientific study that would otherwise have been hidden within or beneath the regolith. Should such new palaeontological material be located as a result of this site investigation this could prove to have a positive*

*effect on the understanding of the fossil record of South Africa and positively affect the palaeontological heritage of the country.” Please refer to the full report for further details.*

### **8.3 Burial Grounds and Graves (Section 36 of the NHRA)**

In terms of Section 36 of the Act no burial sites were recorded.

### **8.4 Cultural Landscapes, Intangible and Living Heritage.**

Long term impact on the cultural landscape is considered to be negligible as the surrounding area consists of a residential area. Visual impacts to scenic routes and sense of place are also considered to be low due to the previous developments in the area and the lack of significant sites.

### **8.5 Battlefields and Concentration Camps**

There are no battlefields or concentration camp sites in the study area.

### **8.6 Potential Impact**

The chances of impacting unknown archaeological sites in the study area is considered to be negligible. Any direct impacts that might occur would be during the construction phase only and would be of very low significance. Cumulative impacts occur from the combination of effects of various impacts on heritage resources. The importance of identifying and assessing cumulative impacts is that the whole is greater than the sum of its parts. In the case of the development, it will, with the recommended mitigation measures and management actions, not impact any heritage resources directly. However, this and other projects in the area could have an indirect impact on the larger heritage landscape. The lack of any heritage resources in the immediate area and the extensive existing development surrounding the study area minimises additional impact on the landscape.

#### **8.6.1 Pre-Construction phase:**

It is assumed that the pre-construction phase involves the removal of topsoil and vegetation as well as the establishment of infrastructure needed for the construction phase. These activities can have a negative and irreversible impact on heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

#### **8.6.2 Construction Phase**

During this phase, the impacts and effects are similar in nature but more extensive than the pre-construction phase. These activities can have a negative and irreversible impact on heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

#### **8.6.3 Operation Phase:**

No impact is envisaged for the recorded heritage resources during this phase.



Table 5. Impact Assessment table.

<b>Nature:</b> During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological material or objects.		
	<b>Without mitigation</b>	<b>With mitigation (Preservation/ excavation of site)</b>
<b>Extent</b>	Local (1)	Local (1)
<b>Duration</b>	Permanent (5)	Permanent (5)
<b>Magnitude</b>	Low (2)	Low (2)
<b>Probability</b>	Not probable (2)	Not probable (2)
<b>Significance</b>	<b>16 (Low)</b>	<b>16 (Low)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Not reversible	Not reversible
<b>Irreplaceable loss of resources?</b>	No resources were recorded	No resources were recorded.
<b>Can impacts be mitigated?</b>	Yes, a chance find procedure should be implemented.	Yes
<b>Mitigation:</b> Due to the lack of apparent significant heritage resources no further mitigation is required prior to construction. A Chance Find Procedure should be implemented for the project should any sites be identified during the construction process.		

## 9 Conclusion and recommendations

HCAC was appointed to conduct a Heritage Impact Assessment for the Nelson's Kop Development and associated sewerage pipeline. . No raw material suitable for stone tool manufacture occurs in the study area and no ceramics or stone walls attributed to the Iron Age were recorded within the study area. An independent paleontological study was conducted for the project (Millstead 2017). An independent paleontological study was conducted for the project (Millstead 2017) who concluded that his study has not identified any palaeontological reason to prejudice the project subject to adequate mitigation programs being put in place as outlined under the chance find procedure below. Therefore No further mitigation is recommended prior to construction in terms of Section 35 for the proposed development to proceed.

In terms of the built environment of the area (Section 34), no standing structures older than 60 years occur within the study area. From the 1943 topographic map of the study area it is clear that no features of significance occurred in the area.

In terms of Section 36 of the Act no burial sites were recorded. If any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area. The proposed development will not impact negatively on significant cultural landscapes or viewsapes. During the public participation process conducted for the project no heritage concerns was raised.

Due to the lack of significant heritage resources in the study area the impact of the proposed project on heritage resources is considered low and it is recommended that the proposed project can commence on

the condition that the following chance find procedure are implemented as part of the EMP and based on approval from SAHRA

### 9.1. Chance Find Procedure

The possibility of the occurrence of subsurface finds cannot be excluded. Therefore, if during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find and therefor chance find procedures should be put in place as part of the EMP. A short summary of chance find procedures is discussed below.

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

In terms of the paleontological component the following recommendations should be adhered to (Millstead 2017).

- *An appropriate staff member (e.g., the environmental officer) of the company responsible for the construction process be trained in recognition of the types of fossils that may be expected to be encountered in the envisioned excavations.*
- *The relevant employee should make regular and thorough examinations of all excavations that occur within the sediments of the Karoo Supergroup and Cenozoic regolith.*
- *Should any fossil materials be identified, the excavations in that area should be halted in that location and SAHRA informed of the discovery.*
- *A palaeontologist must then be appointed by the company to evaluate the fossil deposits and make the necessary recommendations regarding damage mitigation of the fossils materials.*
- *The excavations associated with the project should be inspected by a palaeontologist 2 times a year (i.e., once every 6 months) while they are occurring to ensure that no fossil materials are being damaged or destroyed.*

### 9.2 Reasoned Opinion

From a heritage perspective, the proposed project is acceptable. If the above recommendations are adhered to and based on approval from SAHRA, HCAC is of the opinion that the development can continue as the development will not impact negatively on the archaeological record of the area. If during the pre-construction phase or during construction, any archaeological finds are made (e.g. graves, stone tools, and skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds. Due to the subsurface nature of archaeological material and graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded, but can be easily mitigated by preserving the sites *in-situ* within the development.

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Wits Archaeological Database



**11. Appendices:****Curriculum Vitae of Specialist**

Jaco van der Walt  
Archaeologist

jaco.heritage@gmail.com  
+27 82 373 8491  
+27 86 691 6461

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**Education:**

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**Particulars of degrees/diplomas and/or other qualifications:**

**Name of University or Institution:** University of Pretoria  
**Degree obtained** : BA Heritage Tourism & Archaeology  
**Year of graduation** : 2001

**Name of University or Institution:** University of the Witwatersrand  
**Degree obtained** : BA Hons Archaeology  
**Year of graduation** : 2002

**Name of University or Institution** : University of the Witwatersrand  
**Degree Obtained** : MA (Archaeology)  
**Year of Graduation** : 2012

**Name of University or Institution** : University of Johannesburg  
**Degree** : PhD  
**Year** : Currently Enrolled

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**EMPLOYMENT HISTORY:**

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2011 – Present: **Owner – HCAC (Heritage Contracts and Archaeological Consulting CC).**  
 2007 – 2010 : **CRM Archaeologist**, Managed the Heritage Contracts Unit at the University of the Witwatersrand.  
 2005 - 2007: **CRM Archaeologist**, Director of Matakoma Heritage Consultants  
 2004: **Technical Assistant**, Department of Anatomy University of Pretoria  
 2003: **Archaeologist**, Mapungubwe World Heritage Site  
 2001 - 2002: **CRM Archaeologists**, For R & R Cultural Resource Consultants, Polokwane  
 2000: **Museum Assistant**, Fort Klapperkop.

**Countries of work experience include:**

Republic of South Africa, Botswana, Zimbabwe, Mozambique, Tanzania, The Democratic Republic of the Congo, Lesotho and Zambia.

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**SELECTED PROJECTS INCLUDE:**

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**Archaeological Impact Assessments (Phase 1)**

Heritage Impact Assessment Proposed Discharge Of Treated Mine Water Via The Wonderfontein Spruit Receiving Water Body Specialist as part of team conducting an Archaeological Assessment for the Mmamabula mining project and power supply, Botswana

Archaeological Impact Assessment Mmamethlake Landfill

Archaeological Impact Assessment Libangeni Landfill

**Linear Developments**

Archaeological Impact Assessment Link Northern Waterline Project At The Suikerbosrand Nature Reserve

Archaeological Impact Assessment Medupi – Spitskop Power Line,

Archaeological Impact Assessment Nelspruit Road Development

**Renewable Energy developments**

Archaeological Impact Assessment Karoshoek Solar Project

**Grave Relocation Projects**

Relocation of graves and site monitoring at Chloorkop as well as permit application and liaison with local authorities and social processes with local stakeholders, Gauteng Province.

Relocation of the grave of Rifle Man Maritz as well as permit application and liaison with local authorities and social processes with local stakeholders, Ndumo, Kwa Zulu Natal.

Relocation of the Magolwane graves for the office of the premier, Kwa Zulu Natal

Relocation of the OSuthu Royal Graves office of the premier, Kwa Zulu Natal

**Phase 2 Mitigation Projects**

Field Director for the Archaeological Mitigation For Booyssendal Platinum Mine, Steelpoort, Limpopo Province. Principle investigator Prof. T. Huffman

Monitoring of heritage sites affected by the ARUP Transnet Multipurpose Pipeline under directorship of Gavin Anderson.

Field Director for the Phase 2 mapping of a late Iron Age site located on the farm Kameelbult, Zeerust, North West Province. Under directorship of Prof T. Huffman.

Field Director for the Phase 2 surface sampling of Stone Age sites effected by the Medupi – Spitskop Power Line, Limpopo Province

**Heritage management projects**

Platreef Mitigation project – mitigation of heritage sites and compilation of conservation management plan.

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**MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS:**


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- Association of Southern African Professional Archaeologists. Member number 159
- Accreditation:
  - Field Director Iron Age Archaeology
  - Field Supervisor Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation
- Accredited CRM Archaeologist with SAHRA
- Accredited CRM Archaeologist with AMAFA
- Co-opted council member for the CRM Section of the Association of Southern African Association Professional Archaeologists (2011 – 2012)

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**PUBLICATIONS AND PRESENTATIONS**


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- A Culture Historical Interpretation, Aimed at Site Visitors, of the Exposed Eastern Profile of K8 on the Southern terrace at Mapungubwe.
  - J van der Walt, A Meyer, WC Nienaber
  - Poster presented at Faculty day, Faculty of Medicine University of Pretoria 2003
- 'n Reddingsondersoek na Anglo-Boereoorlog-ammunisie, gevind by Ifafi, Noordwes-Provinsie. South-African Journal for Cultural History 16(1) June 2002, with A. van Vollenhoven as co-writer.
- Fieldwork Report: Mapungubwe Stabilization Project.
  - WC Nienaber, M Hutten, S Gaigher, J van der Walt
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2004
- A War Uncovered: Human Remains from Thabantšho Hill (South Africa), 10 May 1864.
  - M. Steyn, WS Boshoff, WC Nienaber, J van der Walt
  - Paper read at the 12<sup>th</sup> Congress of the Pan-African Archaeological Association for Prehistory and Related Studies 2005
- Field Report on the mitigation measures conducted on the farm Bokfontein, Brits, North West Province .
  - J van der Walt, P Birkholtz, W. Fourie
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2007
- Field report on the mitigation measures employed at Early Farmer sites threatened by development in the Greater Sekhukhune area, Limpopo Province. J van der Walt
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2008
- Ceramic analysis of an Early Iron Age Site with vitrified dung, Limpopo Province South Africa.
  - J van der Walt. Poster presented at SAFA, Frankfurt Germany 2008

- Bantu Speaker Rock Engravings in the Schoemanskloof Valley, Lydenburg District, Mpumalanga (*In Prep*)
  - J van der Walt and J.P Celliers
- Sterkspruit: Micro-layout of late Iron Age stone walling, Lydenburg, Mpumalanga. W. Fourie and J van der Walt. A Poster presented at the Southern African Association of Archaeologists Biennial Conference 2011
- Detailed mapping of LIA stone-walled settlements' in Lydenburg, Mpumalanga. J van der Walt and J.P Celliers
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2011
- Bantu-Speaker Rock engravings in the Schoemanskloof Valley, Lydenburg District, Mpumalanga. J.P Celliers and J van der Walt
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2011
- Pleistocene hominin land use on the western trans-Vaal Highveld ecoregion, South Africa, Jaco van der Walt.
  - J van der Walt. Poster presented at SAFA, Toulouse, France. Biennial Conference 2016

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**REFERENCES:**

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1. Prof Marlize Lombard      Senior Lecturer, University of Johannesburg, South Africa  
E-mail: mlombard@uj.ac.za
2. Prof TN Huffman      Department of Archaeology Tel: (011) 717 6040  
University of the Witwatersrand
3. Alex Schoeman      University of the Witwatersrand  
E-mail: Alex.Schoeman@wits.ac.za