

ARCHAEOLOGICAL IMPACT ASSESSMENT

FOR THE PROPOSED TOM BURKE TRUCK STOP AND FILLING
STATION LIMPOPO PROVINCE

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Tekplan Environmental

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General

The possibility of unmarked or informal graves and subsurface finds cannot be excluded. If any possible finds are made during construction, the operations must be stopped and a qualified archaeologist contacted for an assessment of the find/s.

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EXECUTIVE SUMMARY

Site name and location: The proposed Tom Burke Truck Stop and Filling Station development is located on Portion 5 of the farm Van Wyksfontein 3 LR. The property is located at Tom Burke in the Lephalale Local Municipality area..

1: 50 000 Topographic Map: 2327 BB.

EIA Consultant: Tekplan Environmental

Developer: Mr. Gerhard Vos

Heritage Consultant: HCAC Heritage Contracts and Archaeological Consulting).

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Date of Report: 12 November 2016

Findings of the Assessment:

HCAC was appointed to assess the study area in terms of the archaeological component of Section 35 of the NHRA. No raw material suitable for stone tool manufacture occurs in the study area. No ceramics or stone walls attributed to the Iron Age occur in the area and no archaeological features or artefacts were recorded within the study area. No further mitigation 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 in the study area. However if any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation. Due to the subsurface nature of archaeological remains and the fact that graves can occur anywhere on the landscape, it is recommended that a chance find procedure is implemented for the project as part of the EMP

Due to the lack of significant heritage features in the study area there is from an archaeological point of view no reason why the development cannot commence based on approval from SAHRA.

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ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
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
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 BACKGROUND INFORMATION

Heritage Contracts and Archaeological Consulting CC (**HCAC**) was appointed to conduct an Archaeological Impact Assessment for the proposed Tom Burke Truck Stop and Filling Station project as part of the Basic Assessment process.

The aim of the study is 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 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, a desktop study that includes collection from various sources and consultations; Phase 2, the physical surveying of the study area on foot and by vehicle; Phase 3, reporting the outcome of the study.

General site conditions were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to the SAHRA for review.

1.1. Terms of Reference

Desktop study

Conduct a brief desktop study where information on the area is collected to provide a background setting of the archaeology that can be expected in the area.

Field study

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 identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

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 Heritage legislation 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 25 of 1999).

1.2. Archaeological Legislation and Best Practice

Phase 1, an AIA or a HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a 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;
- » Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 23(2) (b) of the NEMA and section S. 39 (3) (b) (iii) of the MPRDA.

The AIA should be submitted, as part of the EIA, BIA or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately 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 EIA, BIA/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 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 from SAHRA by the client 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).

1.3. Description of Study Area

1.3.1 Location Data

The site is located on Portion 5 of the farm Van Wyksfontein 3 LR. The property is located at Tom Burke in the Lephalale Local Municipality area (Figure 1). The vegetation is described by Mucina and Rutherford (2006) as Limpopo Sweet Bushveld. The study area is flat characterised by deep sandy soils and is directly accessible from either the N11 or the R572.

1.3.2. Location Map

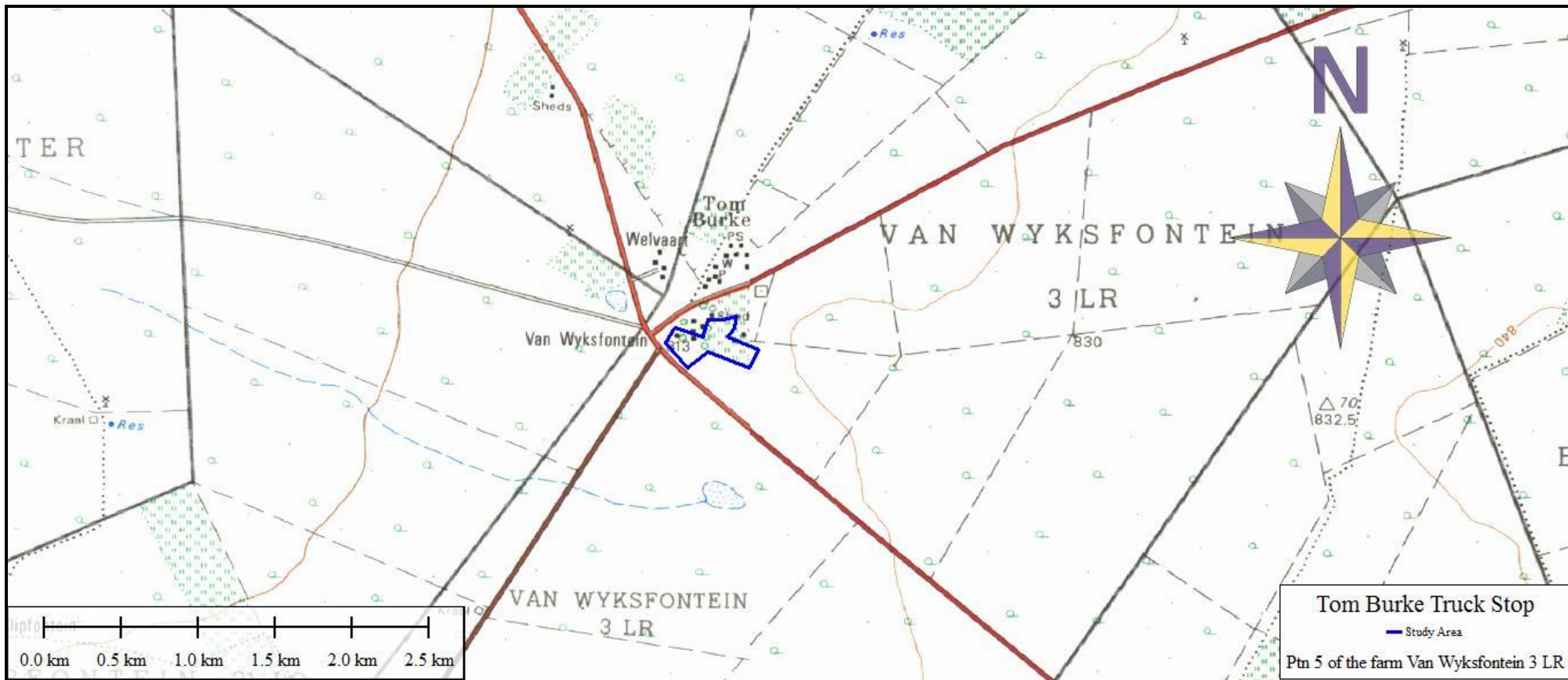


Figure 1: Location map

2. APPROACH AND METHODOLOGY

The aim of the study is to cover archaeological databases to compile a background of the archaeology that can be expected in the study area followed by field verification; this was accomplished by means of the following phases.

2.1 Phase 1 - Desktop Study

The first phase comprised desktop, scanning existing records for archaeological sites, historical sites, graves, architecture (structures older than 60 years) of the area. The following approach was followed:

2.1.1 Literature Search

This was conducted by utilising data stored in the national archives and published reports relevant to the area. The aim of this is to extract data and information on the area in question.

2.1.2 Information Collection

SAHRIS was consulted to collect data from previously conducted CRM projects in the region to provide a comprehensive account of the history of the study area.

2.1.3 Consultation

No public consultation was done by the author as this was done independently as part of the BA.

2.1.4 Google Earth and Mapping Survey

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located.

2.1.5 Genealogical Society of South Africa

The database of the Genealogical Society was consulted to collect data on any known graves in the area.

2.2 Phase 2 - Physical Surveying

Due to the nature of cultural remains, the majority of which occurs below surface, a field survey of the proposed development was conducted. The study area was surveyed by means of vehicle and extensive pedestrian surveys on in the week of 10 November 2016. The survey was aimed at covering the proposed development footprint, focussing on specific areas on the landscape that would be more likely to contain archaeological and/or other heritage remains like drainage lines, rocky outcrops as well as slight elevations in the natural topography. These areas were searched more intensively, but many other areas were walked in order to confirm expectations in those areas. Track logs of the areas covered were taken (Figure 2).



Figure 2: Track logs of the areas surveyed indicated in black with the development footprint indicated in blue.

2.3. Restrictions

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. This report only deals with the footprint area of the proposed development as indicated in the location map.

Although HCAC surveyed the area as thoroughly as possible, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as graves, stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.

3. NATURE OF THE DEVELOPMENT

The project entails the proposed construction of a truck stop with filling station. 198 cubic meter tanks will be installed for the storage and handling of a dangerous good for retail purposes.

- 46 000 liter petrol
- 138 000 liter diesel
- 14 000 liter paraffin

4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA

4.1 Databases Consulted

Very few previous studies are on record for the general study area including:

Author	Year	Project	Findings
Hutton and Gaigher	2000	Proposed Development of a Cellular Base Station-Kauletsi-Northern Province	No heritage resources
Roodt	2008	Phase 1 Heritage Resource Impact Assessment (Scoping & Evaluation) Shopping Complex Development Lephalale, Limpopo	No Heritage resources

Closer to the study area two studies were conducted.

Author	Year	Project	Findings
Hutton	2012	Heritage Impact Assessment for the Tom Burke Solar development	No heritage resources
Hutton	2015	Heritage Impact Assessment for the Proposed Township Development at Tom Burke, Lephalale Local Municipality, Limpopo Province	Cemetery and historical building

Genealogical Society and Google Earth Monuments

Neither the Genealogical Society nor the monuments database at Google Earth (Google Earth also include some archaeological sites and historical battlefields) have any recorded sites in the study area.

4.2. Brief background to the study area

4.2.1. Early Stone Age

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); they are unlikely to occur in the study area.

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, but isolated finds are possible. However, isolated finds have little value. Therefore, the project is unlikely to disturb a significant site.

4.2.2. 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 Oliboompoort Cave to the south of Lephalale (Mason, 1962; M. van der Ryst, 2006) and in the river gravels of the Limpopo (Pistorius, 2007). Middle Stone Age sites are also associated with pans and ancient drainage systems.

4.2.3. 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). 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.

4.2.4. 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.

The Middle Iron Age spans the 10th to the 13th Centuries A.D. and includes cultures such as K2 and Mapungubwe. The Late Iron Age began in the 14th Century up to the colonial period and includes traditions such as Icon and Letaba (Hutten 2015). The Limpopo Valley, particularly to the north-east of the study area, is well known for its Early and Middle Iron Age sites in the vicinity of the Shashe-Limpopo confluence and related Zhizo settlements spread to the north and west as the Toutswe culture (contemporary with K2, circa 1000 A.D.) of the Mahalapye-Palapye area of Botswana (Huffman 2007) and north of the study site.

Sotho/Tswana groups arrived in the region during the following century and the ceramic style was collectively named Moloko (Evers 1983). Huffman renamed the first phase of Moloko to the Icon facies. Sites with Icon type pottery extend north and south of the Soutpansberg and westwards across the study area and northwards into Botswana. Icon sites range from 1300 - 1450 AD.

The second phase of Moloko can be divided into the Letsibogo-, Madikwe- and Olifantspoort-facies of which the Letsibogo facies is most relevant to the study area (\pm 1500 – 1700 AD). The Letsibogo facies is poorly documented, but occurs along the Limpopo River to the west and south of the confluence with the Shashe (Huffman 2007). The western parts of Limpopo Province are known for large Sotho-Tswana sites that have been the focus of intensive archaeological investigations (Evers 1983; Mason 1986; Pistorius 1992, Hutten 2015).

The Ba Birwa settled in the region from the 1700's (Bonner & Carruthers 2003). The Ba-Tlokwa (from the east), Bagananwa (from the west and south) and Ndebele (from the north) had periodic influences on the Ba-Birwa from the study area through conflict, trade and intermarriage during the 18th and 19th Centuries. The Bagananwa group settled in the Blouberg region (to the east) during the early 1800's. The Bagananwa originated from the earlier Bahurutshe chiefdom further to the south (Rustenburg/Zeerust). After their split with the Bahurutshe these people moved to Shoshong and then to Tshwapong in Botswana (Bonner & Carruthers 2003).

4.2.5. Historical Period

A number of early European travellers travelled through the region, including Coenraad de Buys and his party who spent time amongst the Bamangwato in the Shoshong-Tswapong area before settling at Buysdorp at the base of the western Soutpansberg. Captain Frederick Elton was the first explorer to follow the Limpopo from the Shashe area to the sea and must have passed fairly close to the study area on his way to the Shashe (Elton 1872).

It is interesting to note that the Bourke's Luck Potholes were named after a gold digger who once staked his claim nearby (Hutten 2015). Tom Burke was perhaps one of the first prospectors to proclaim that the surrounding area at Bourke's Luck would yield gold. His small gold mine proved to be completely fruitless. The town of Tom Burke was also named after him and his grave is situated within a small cemetery on the adjacent property (Hutten 2015).

4.3. Palaeontology

According to the SAHRIS palaeontological sensitivity map the area is indicated as of moderate paleontological significance. A study by Bruce Rubidge was conducted on the adjacent property (on Portion 7 of the Farm Van Wyksfontein 3 LR) (Rubidge 2015). His findings were: "The entire study area is deeply underlain by Precambrian amphibolite rocks of the Beit Bridge Complex of the Limpopo Mobile Belt, which in turn are overlain by Quaternary sediments. There is only a slight possibility that the Quaternary sediments could host fossils but no possibility that the amphibolites of the Beit Bridge Complex could contain fossils. In my opinion this development will not negatively affect palaeontological heritage" (Rubidge 2015).

Rubidge recommended the following: "Because rock successions underlying the area for proposed development are of igneous or metamorphic origin and are Precambrian in age there is very little chance that the proposed development will have any effect on palaeontological heritage. In any development there is always the slight possibility that isolated overlying younger deposits could contain fossils. In the unlikely event that fossils are exposed in such deposits it will create a unique opportunity to explore the area for fossils. It is thus recommended that if fossils are exposed as a result of construction activities, a qualified palaeontologist must be contacted to assess the exposure for fossils before further development takes place so that the necessary rescue operations are implemented. Depending on the nature of the fossils discovered this could entail excavation and removal to a registered palaeontological museum collection" (Rubidge 2015).

5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES

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:

- » 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;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) 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.

5.1. Field Rating of Sites

Site significance classification standards 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 7 of this report.

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

6. BASELINE STUDY-DESCRIPTION OF SITES

It is important to note that the entire farm was not surveyed but only the development footprint (Figure 1 and 2). The topography of the study area is flat and characterised by red sandy soils. The vegetation on site is low and archaeological visibility is high. The study area is partly impacted on by previous agricultural fields, a large cattle handling facility, gravel roads and a shed (Figure 3 – 6).

No Stone Age sites were recorded in the study area possibly due to the lack of raw material suitable for knapping and no Iron Age material was recorded in the study area or on any of the other surveys (Hutten 2012 & 2015) conducted in the immediate vicinity of the study area. There are no standing structures older than 60 years in the study area and no grave or burial sites were recorded during the survey.



Figure 3: General site conditions



Figure 4. General Site conditions.



Figure 5. General Site conditions



Figure 6. General site conditions

7. CONCLUSIONS AND RECOMMENDATIONS

HCAC was appointed to assess the study area in terms of the archaeological component of Section 35 of the NHRA. Similarly to surveys on adjacent properties (Hutten 2012 & 2015) no archaeological features or artefacts were recorded within the study area. No further mitigation is recommended in terms of Section 35 for the proposed development to proceed.

In terms of the built environment (Section 34), no standing structures older than 60 years occur in the study area and no grave sites were recorded in the study area. The surrounding area is used for farming activities and no significant cultural landscapes or viewsapes were noted during the fieldwork.

Due to the lack of significant heritage features in the study area there is from an archaeological point of view no compelling reason why the development cannot commence based on approval from SAHRA.

Due to the subsurface nature of archaeological remains and the fact that graves can occur anywhere on the landscape, it is recommended that a chance find procedure is implemented for the project as part of the EMP as detailed below:

Chance find procedure

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.

7.1 Reasoned Opinion

From a heritage perspective the proposed project is acceptable from a heritage point of view. 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.

8. PROJECT TEAM

Jaco van der Walt, Project Manager

9. STATEMENT OF COMPETENCY

I (Jaco van der Walt) am a member of ASAPA (no 159), and accredited in the following fields of the CRM Section of the association: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. This accreditation is also acknowledged by SAHRA and AMAFA.

I have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique, Tanzania and the DRC; having conducted more than 300 AIA's since 2000.

10. REFERENCES

- Wits Archaeological Database (2009)
- Bergh, J.S., (ed.) *Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies*. Pretoria: J. L. van Schaik Uitgewers. 1999.
- Bonner, P., & Carruthers, E.J., 2003. Mapungubwe Cultural Heritage Resources survey. The Recent History of the Mapungubwe Area. Report commissioned by the Department of Environmental Affairs and Tourism.
- Deacon, H.J. & Deacon, J. 1999. Human Beginnings in South Africa: Uncovering the Secrets of the Stone Age. Cape Town: David Phillips Publishers.
- Elton, F., 1872. Journal of Exploration of the Limpopo River. Proceedings of the Royal Geographical Society of London, Vol. 16, No. 2 (1871 - 1872), pp. 89-101.
- Evers, T.M. 1983. Oori or Moloko? The origins of the Sotho/Tswana on the evidence of the Iron Age of the Transvaal. S. Afr. J. Sci. 79(7): 261-264.
- Huffman, T.N., 1982. Archaeology and ethnohistory of the African Iron Age. *Annual Review of Anthropology* 11, 133-50.
- Huffman, T.N. 2007. *Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa*. University of KwaZulu-Natal Press, Scottsville.
- Huffman, T.N., Van der Walt, J. 2011 Final Mafuta Heritage Report A field study prepared for Environmental Resources Management, Sasol Technology, SRK Consulting and Sustainable Environmental Solutions
- Hutton, M. 2012. Heritage Impact Assessment for the Tom Burke Solar development.
- Hutton, M. 2015. Heritage Impact Assessment for the Proposed Township Development at Tom Burke, Lephalale Local Municipality, Limpopo Province.
- Hutton, M. and Gaigher, S. 2000. Proposed Development of a Cellular Base Station-Kauletsi-Northern Province.
- Kuman, K., 1998. The earliest South African Industries. In: *Lower Palaeolithic Settlement of the Old World*. Eds by M.D. Petraglia and R. Korisetter, pp 151-186. Routledge Press, London.
- Lewis-Williams, J.D., 1981. *Believing and Seeing: Symbolic Meanings in southern San Rock Paintings*. Academic Press, London.
- Mason, R.J., 1962. *The Prehistory of the Transvaal*. Witwatersrand University Press, Johannesburg.
- Mason, R.J., 1986. Origins of black people of Johannesburg and the Southern Western Central Transvaal AD 350-1880. University of the Witwatersrand: Johannesburg.
- Mitchell, P., 2002. *The Archaeology of Southern Africa*. Cambridge University Press, Cambridge.
- Mucina, L. & Rutherford, M.C. 2006. The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute. Pretoria.
- National Heritage Resources Act NHRA of 1999 (Act 25 of 1999)
- Pistorius, J.C.C. 2007. *A Phase 1 Heritage Impact Assessment Study for the Eskom Mmamabula Delta Project near Lephalale in the Limpopo Province of South Africa*. Prepared for PBA International.
- Pistorius, J.C.C., 1992. Preliminary report: Excavations at Molokwane and Boitsemagano – capitals of the Bamodimosana chiefdoms. Unpublished report in the Department of Anthropology and Archaeology: University of Pretoria.
- Rubidge, B. 2015. Palaeontological Desktop Study – University of Venda Residence Development. Unpublished report.
- Van der Ryst, M.M., 1998. *The Waterburg Plateau in the Northern Province, Republic of South Africa, in the Later Stone Age*. BAR International Series 715, Oxford.

Van der Ryst, M.M., 2006. *Seeking Shelter: Later Stone Age Hunters, Gatherers and Fishers of Oliboompoot in the western Waterberg south of the Limpopo*. Unpublished doctoral thesis, University of the Witwatersrand, Johannesburg

Volman, T.P., 1984. Early prehistory of southern Africa. In: *Southern African Prehistory and Paleoenvironments*. Ed by R.G. Klein, pp. 169-220. A.A. Balkema, Rotterdam.

Wadley, L., 1987. *Later Stone Age Hunters and Gatherers of the southern Transvaal*. BAR International Series 380, Oxford.

Ross, R. *A concise history of South Africa*. Cambridge University Press. Cambridge. 1999.

Roodt, F. 2008. Phase 1 Heritage Resource Impact Assessment (Scoping & Evaluation) Shopping Complex Development Lephalale, Limpopo.

SAHRA Report Mapping Project Version 1.0, 2009

SAHRIS. Referenced November 2016

Van Warmelo, N.J., 1953. *Die Tlokwa en Birwa van Noord Transvaal*. Ethnologiese Reeks No. 29. State Printer: Pretoria.