

Comprehensive and Professional Solutions for all Heritage Related Matters

CK 2006/014630/23 VAT NO.: 4360226270

A PHASE 1 HERITAGE IMPACT ASSESSMENT & REPORT FOR THE WOOD FAMILY TRUST DAM PROJECTS ON VARIOUS FARMS AND FARM PORTIONS NEAR WARDEN IN THE FREESTATE PROVINCE

For:

Aquastrat Solutions (Pty) Ltd P.O. Box 72194 Lynnwood Ridge 0040

REPORT: APAC023/30

by:

A.J. Pelser

Accredited member of ASAPA Member No: 106

April 2023

Assisted by: Me. Heidi Fivaz & Me. Sky-Lee Fairhurst UBIQUE Heritage Consultants

P.O.BOX 73703

LYNNWOOD RIDGE

0040

Tel: 083 459 3091 Fax: 086 695 7247

Email: apac.heritage@gmail.com

©Copyright APELSER ARCHAEOLOGICAL CONSULTING

The information contained in this report is the sole intellectual property of APELSER Archaeological Consulting. It may only be used for the purposes it was commissioned for by the client.

DISCLAIMER:

Although all efforts are made to identify all sites of cultural heritage (archaeological and historical) significance during an assessment of study areas, the nature of archaeological and historical sites are as such that it is always possible that hidden or subterranean sites, features or objects could be overlooked during the study. APELSER Archaeological Consulting can't be held liable for such oversights or for costs incurred as a result thereof.

Clients & Developers should not continue with any development actions until SAHRA or one of its subsidiary bodies has provided final comments on this report. Submitting the report to SAHRA is the responsibility of the Client unless required of the Heritage Specialist as part of their appointment and Terms of Reference

SUMMARY

APelser Archaeological Consulting (APAC) was appointed by Aquastrat Solutions (Pty) Ltd, on behalf of the Wood Family Trust, to conduct a Phase 1 Heritage Impact Assessment for the proposed construction of 3 new dam walls on three adjoining farms near Warden in order to increase the capacities of the existing Cyprus, De Villiers Dam and Hill Cottage Dams. The study & proposed development area is located close to Warden in the Free State Province, in the Thabo Mofutsanyana District Municipality & Phumelela Local Municipality. Portions of three farms - De Villiers No. 1436; Cyprus No. 567 and Hill Cottage No. 390 form part of the development area.

The fieldwork was conducted on the 1st of April 2023 by Me. Heidi Fivaz & Me. Sky-Lee Fairhurst of Ubique Heritage Consultants.

Background research indicates that there are some cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls, with no known ones located in the specific study area. No sites of cultural heritage (archaeological and/or historical) origin or significance were recorded in the study and development area footprints during the fieldwork. This report discusses the results of both the background research and physical assessment and provides recommendations on the way forward.

From a Cultural Heritage point of view it can be concluded that the proposed Wood Family Trust Dam developments should be allowed to continue taking into consideration the recommendations provided at the end.

CONTENTS

1.	INTRODUCTION	5
2.	TERMS OF REFERENCE	5
3.	LEGISLATIVE REQUIREMENTS	6
4.	METHODOLOGY	9
5.	DESCRIPTION OF THE AREA	9
6.	DISCUSSION	12
7.	CONCLUSIONS AND RECOMMENDATIONS	27
8.	REFERENCES	28
AP	PENDIX A: DEFINITION OF TERMS:	30
AP	PENDIX B: DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE	31
AP	PENDIX C: SIGNIFICANCE AND FIELD RATING:	32
ΑP	PENDIX D: PROTECTION OF HERITAGE RESOURCES:	33
ΑP	PENDIX E: HERITAGE IMPACT ASSESSMENT PHASES	34

1. INTRODUCTION

APelser Archaeological Consulting (APAC) was appointed by Aquastrat Solutions (Pty) Ltd, on behalf of the Wood Family Trust, to conduct a Phase 1 Heritage Impact Assessment for the proposed construction of 3 new dam walls on three adjoining farms near Warden in order to increase the capacities of the Cyprus, De Villiers and Hill Cottage Dams. The study & proposed development area is located close to Warden in the Free State Province, in the Thabo Mofutsanyana District Municipality & Phumelela Local Municipality. Portions of three farms - De Villiers No. 1436; Cyprus No. 567 and Hill Cottage No. 390 - form part of the development area.

Background research indicates that there are some cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls, with no known ones located in the specific study area. No sites of cultural heritage (archaeological and/or historical) origin or significance were recorded in the study and development area footprints during the fieldwork.

The client indicated the location and boundaries of the study & development area and the assessment focused on this. The report was drafted and developed in line with Appendix 3 of the EIA Regulations. The overall aim of the study was to determine if there are any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance in the area that had to be assessed and if the proposed developments will impact on these resources negatively. Mitigation measures to negate these impacts would then be recommended in the report.

2. TERMS OF REFERENCE

The Terms of Reference for the study was to:

- 1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;
- 2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- 3. Describe the potential impact of the proposed development on these cultural remains, according to a standard set of conventions;
- 4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources; and
- 5. Review applicable legislative requirements.

3. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two Acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

3.1. The National Heritage Resources Act (Act 25 of 1999)

According to the Act the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The National Estate includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Sites of Archaeological and paleontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources. A HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof

- d. Re-zoning of a site exceeding 10 000m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

<u>Structures</u>

Section 34(1) of the Act state that no person may demolish any structure or part thereof that is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of the Act deals with archaeology, palaeontology and meteorites. The Act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial)

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- c. trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or paleontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological material or objects, or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict

- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position of otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations** (**Ordinance no. 12 of 1980**) (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated to) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

3.2. The National Environmental Management Act (Act 107 of 1998)

This Act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

The specific requirements that specialist studies and reports must adhere to are contained in Appendix 6 of the EIA Regulations.

4. METHODOLOGY

4.1. Survey of literature

A detailed review of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized, including i.e. previous Heritage Assessment and government databases, are indicated in the bibliography.

4.2. Field survey

The field assessment section of the study was conducted on the 1st of April 2023 according to generally accepted HIA practices contained in the SAHRA 2007 Minimum Standards related to the Archaeological & Paleontological Components of Impact Assessments & Reports. The assessment aimed at locating all possible objects, sites and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detailed photographs are also taken where needed.

4.3. Documentation

All sites, objects, features and structures identified are documented according to a general set of minimum standards. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality. The significance of each site is assessed and documented.

5. DESCRIPTION OF THE AREA

The study & proposed development area is located approximately 20km south-east of Warden in the Free State, and on portions of the farms De Villiers No. 1436; Cyprus No. 567 and Hill Cottage No. 390.

The previous and current land use is agricultural, including livestock grazing and crop growing. The study area falls within the Eastern Free State Sandy Grassland. The topography of the study area is flat to undulating terrain with dams, dried-up waterways, and dense grassland vegetation. Mudstones, sandstones and shale of the Beaufort Group are known to be present in the Eastern Free State Sandy Grassland. The area is densely vegetated with various grass and plant species, particularly close to the dams. Some species dominating the grassland appear to belong to *Eragrostis, Tristachya, Themeda*, and *Elionurus*, among others. Several existing dams can be found throughout the properties. These include the dams for the proposed development.

Additionally, several dried-up non-perennial waterways can be seen throughout the properties. However, the majority appear to be associated with the existing dams. Dirt roads and farmlands bound the properties to the north, south, east and west. Animal grazing and small animal burrows were noted throughout the properties. Water erosion can be seen near the dried-up waterways and dams. The majority of the landscape surrounding the proposed dams is cultivated farmlands.

The area surrounding the dams was surveyed as best as possible and as the vegetation and environment allowed. The site is densely vegetated in certain areas and impeded perfect transects. Due to the dense vegetation, surface visibility was affected.



Figure 1: General location of the study & development area (Google Earth 2023).



Figure 2: Closer view of the De Villiers Dam area (Google Earth 2023).



Figure 3: Closer view of the Cyprus Dam area (Google Earth 2023).



Figure 4: Closer view of the Hill Cottage Dam area (Google Earth 2023).

6. RESULTS AND DISCUSSION

It is important to note that the Environmental Screening Report for the proposed development resulted in a Low Sensitivity for Archaeological and Cultural Heritage.

6.1 Literature Review

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided basically into three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

- Earlier Stone Age (ESA) up to 2 million more than 200 000 years ago
- Middle Stone Age (MSA) less than 300 000 20 000 years ago
- Later Stone Age (LSA) 40 000 years ago 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

There are no known Stone Age sites in the area, although a few individual stone tool flakes were identified close to Villiers north of Warden during a 2015 HIA by the author of this report (Pelser 2015: 13).

No Stone Age sites or material were identified in the study & development area footprints during the April 2023 assessment.

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts. In South Africa it can be divided in two separate phases (Bergh 1999: 96-98), namely:

- Early Iron Age (EIA) 200 1000 A.D
- Late Iron Age (LIA) 1000 1850 A.D.

Huffman (2007: xiii) however indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

- Early Iron Age (EIA) 250 900 A.D.
- Middle Iron Age (MIA) 900 1300 A.D.
- Late Iron Age (LIA) 1300 1840 A.D.

T. Maggs did extensive archaeological research in the area along the Vaal and he identified several Iron Age settlements in the larger area referred to by archaeologists as Type V and Type N settlements. These settlements are classified mainly on the difference in layout of the stone walled settlements. These settlements date to approximately AD 1450 to AD 1820 (Van der Walt 2008: 18-19).

Based on Tom Huffman's research LIA sites, features or material that could be present in the larger area will be related to the Ntsuanatsatsi facies of the Urewe Tradition, dating to between AD1450 and AD1650 (Huffman 2007: 167) or the Makgwareng facies of the same dating to between AD1700 & AD1820 (Huffman 2007: 179).

Some Iron Age occurrences were identified during a 2015 assessment in the Villiers area and later archaeologically investigated as well (Pelser 2015). This included remnants of stone-walled settlements and some rock engravings that could be related to the Iron Age, and is similar to rock art features identified by Van der Walt in 2008 on farms close to the town of Villiers (2008: p.26; 29).

No Iron Age sites, features or objects were found during the April 2023 field assessment.

The historic timeframe intermingles with the later parts of the Stone and Iron Age, and can loosely be regarded as times when written and oral recounts of incidents became available. Warden is situated in the Free State Province, and is 56km north of Harrismith and 106km south-south-east of Villiers. It was laid out on the farm Rietvlei in 1912, proclaimed in 1913, and attained municipal status in 1920. It is said to be named after Charles Frederick Warden, landdrost of Harrismith from 1884 to 1900 (www.wikipedia.org).

No historical period resources were identified directly within the proposed development footprints of the Cyprus, De Villiers, or Hill Cottage dams. A structural feature is situated approximately 545 m south of the proposed De Villiers Dam, but is unlikely to be affected by the proposed development.

6.2 Results of the April 2023 Field Assessment

The area was surveyed as best as possible and as vegetation growth allowed. The survey tracks followed the landscape, and where possible, transects were done. The work was done on foot and by vehicle.



Figure 5: Tracklog for the field assessment (Google Earth 2023). Courtesy Ubique Heritage Consultants.

6.2.1 Stone Age Sites

No Stone Age sites or material were identified during the field assessment.

6.2.2 Iron Age & Historic Sites

The proposed development is unlikely to affect the structural feature (historical farmstead/homestead remains) near the De Villiers Dam. However, in the event development will affect this structure, it is recommended that due to the likelihood of the site being older than 60 years of age and therefore having some cultural heritage (historical) significance, that a 30m buffer/safety zone be implemented within which no development is allowed.

No other resources relating to the historical period – including previously unknown graves or informal cemeteries - were identified during the field assessment in the study area.

GPS Coordinate of Structure: **\$27°57'15.93 E29° 04'59.38**



Figure 6: The location of the identified structure in relation to the De Villiers Dam area (Google Earth 2023).



Figure 7: View of the area where the historical farmstead/homestead remains are located.

The structure is visible just beyond the trees to the right.

6.2.3 Site Photographs



Figure 8: General view around the De Villiers Dam study area.



Figure 9: Another general view at the De Villiers Dam area.



Figure 10: Low ridge in the De Villiers Dam study area.



Figure 11: General view in the De Villiers Dam study area.



Figure 12: General view of the landscape in the De Villiers Dam area.



Figure 13: General view close to and around the round the Cyprus Dam location.



Figure 14: A view of the landscape in the Cyprus Dam study area.



Figure 15: Erosion donga in the Cyprus Dam area.



Figure 16: General view of the Cyprus Dam study area.



Figure 17: Another general view of the landscape in the area. Note the agricultural fields surrounding the study and development area.



Figure 18: General view of the area around one of the Hills Cottage areas.



Figure 19: Another view of the Hills Cottage Dam area. Note the agricultural fields again.



Figure 20: General view of the area around Hills Cottage.



Figure 21: View of general area around the 2nd Hills Cottage dam.



Figure 22: General view around the 3rd Hills Cottage dam.



Figure 24: The general area around the 4th Hills Cottage Dam.



Figure 25: General area around the Hills Cottage dams.



Figure 26: General landscape around the Hills Cottage study area.

Impact Assessment and Mitigation Measures

The significance of impacts is determined using the following criteria:

Probability: describes the likelihood of the impact actually occurring

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

Duration: the lifetime of the impact

- **Short Term**: the impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
- Medium Term: the impact will last up to the end of the phases, where after it will be negated.
- Long Term: the impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.

• **Permanent:** the impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

Scale: the physical and spatial size of the impact

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

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

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

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

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

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

```
Sum (Duration, Scale, Magnitude) x Probability
S = Significance weighting; Sc = Scale; D = Duration; M = Magnitude; P = Probability
```

Although some sites, features and material of cultural heritage origin and significance were found in the area during the assessment, the current site layouts & development footprints provided will not impact any sites. The impact of the proposed development on the recorded and known heritage sites is therefore deemed as Neglible.

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

Results: $1+2+2\times1 = 5 i.e. \le 20$

The impact of the proposed development on the recorded and known cultural heritage sites in the area is therefore deemed as Neglible based on the Impact Assessment criteria used. However, there is always a possibility of sites, features and material being missed as a result of various factors such as vegetation cover hampering visibility on the ground, as well as the often subterranean nature of cultural heritage resources (including low stone-packed or unmarked graves). With the study and development area having been fairly extensively impacted in the recent past through agricultural activities this is however seen as highly unlikely.

7. CONCLUSIONS AND RECOMMENDATIONS

APelser Archaeological Consulting (APAC) was appointed by Aquastrat Solutions (Pty) Ltd, on behalf of the Wood Family Trust, to conduct a Phase 1 Heritage Impact Assessment for the proposed construction of 3 new dam walls on three adjoining farms near Warden in order to increase the capacities of the existing Cyprus, De Villiers Dam and Hill Cottage Dams. The

study & proposed development area is located close to Warden in the Free State Province, in the Thabo Mofutsanyana District Municipality & Phumelela Local Municipality. Portions of three farms - De Villiers No. 1436; Cyprus No. 567 and Hill Cottage No. 390 form part of the development area.

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls, with no known ones located in the specific study area. No sites of cultural heritage origin or significance were recorded in the study and direct development area footprints during the fieldwork. The proposed development is unlikely to affect the structural feature (historical farmstead/homestead remains) identified near the De Villiers Dam. However, should the proposed development have an impact on it, it is recommended that because the site is likely to be older than 60 years of age and therefore having some cultural heritage (historical) significance, that a 30m buffer/safety zone be implemented within which no development is allowed.

The impact of the proposed development on the recorded and known cultural heritage sites in the area is e deemed as Neglible based on the Impact Assessment criteria used. However, there is always a possibility of sites, features and material being missed as a result of various factors such as vegetation cover hampering visibility on the ground, as well as the often-subterranean nature of cultural heritage resources (including low stone-packed or unmarked graves). With the study and development area having been fairly extensively impacted in the recent past through agricultural activities this is however seen as highly unlikely.

From a Cultural Heritage point of view it can therefore be concluded that the proposed Wood Family Trust Dam developments should be allowed to continue taking into consideration the recommendations provided above.

Finally, should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

8. REFERENCES

General and Closer views of study & development area location, footprints & sites identified: Google Earth 2022.

Track Logs on Google Earth: Courtesy Ubique Heritage Consultants

Field Report & Assessment Photos: Provided by Ubique Heritage Consultants

Bergh, J.S. (red.). 1999. **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies**. Pretoria: J.L. van Schaik.

Huffman, T.N. 2007. Handbook to the Iron Age: **The Archaeology of Pre-Colonial Farming Societies in Southern Africa**. Scotsville: University of KwaZulu-Natal Press.

Knudson, S.J. 1978. **Culture in retrospect**. Chicago: Rand McNally College Publishing Company.

Maggs, T.M.O'C. 1976. Iron Age Communities of the southern highveld. Pietermaritzburg: Occasional Publications of the Natal Museum, No. 2.

Pelser A.J. 2015. Phase 1 HIA Report for the proposed ToPigs SA Merino Piggery Project on the Remaining Extent of Merino 641IR, Dipaleseng Local Municipality, Mpumalanga. Unpublished Report: APelser Archaeological Consulting cc APAC015/12. For: Shangoni Management Services March 2015. Revised May 2015.

Republic of South Africa. 1999. **National Heritage Resources Act** (No 25 of 1999). Pretoria: The Government Printer.

Republic of South Africa. 1998. **National Environmental Management Act** (no 107 of 1998). Pretoria: The Government Printer.

Van der Walt, J. 2008. Archaeological Impact Assessment: SUBDIVISION 1 OF THE FARM ALLEMANSHOME 46, THE FARM ONVERWACHT, AND A PORTION OF THE FARM VILLIERS 492, DISTRICT VILLIERS, FREESTATE PROVINCE. Unpublished Report Heritage Contracts Unit Wits University. For: Vaalplan Town & Regional Planners. November 2008.

History of Warden: www.wikipedia.org

APPENDIX A: DEFINITION OF TERMS:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B: DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE

Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period

Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

APPENDIX C: SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Low: A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium: Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High: Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

Heritage significance:

- Grade I: Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II: Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III: Other heritage resources of local importance and therefore worthy of conservation

Field ratings:

- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

APPENDIX D: PROTECTION OF HERITAGE RESOURCES:

Formal protection:

National heritage sites and Provincial heritage sites – Grade I and II

Protected areas - An area surrounding a heritage site

Provisional protection – For a maximum period of two years

Heritage registers – Listing Grades II and III

Heritage areas – Areas with more than one heritage site included

Heritage objects – e.g. Archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

General protection:

Objects protected by the laws of foreign states Structures – Older than 60 years Archaeology, palaeontology and meteorites Burial grounds and graves Public monuments and memorials

APPENDIX E: HERITAGE IMPACT ASSESSMENT PHASES

- 1. Pre-assessment or Scoping Phase Establishment of the scope of the project and terms of reference.
- 2. Baseline Assessment Establishment of a broad framework of the potential heritage of an area.
- 3. Phase I Impact Assessment Identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
- 4. Letter of recommendation for exemption If there is no likelihood that any sites will be impacted.
- 5. Phase II Mitigation or Rescue Planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
- 6. Phase III Management Plan For rare cases where sites are so important that development cannot be allowed.