Cultural Heritage Survey of the Proposed Kabi Vaalkop PV Solar Facility near Orkney, Dr Kenneth Kaunda District, North West Province

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Executive Summary

This report contains a comparative heritage impact assessment investigation in accordance with the provisions of Sections 38(1) and 38(3) of the *National Heritage Resources Act* (Act no 25 of 1999). This report focuses on the results from a cultural heritage survey that was conducted for the proposed Kabi Vaalkop Photovoltaic Solar facility, near Orkney, North West Province.

Stone Age settlement

No Early, Middle or Later Stone Age tools were noted during the survey and no manufacturing or basecamp sites were identified.

Iron Age settlements

No Iron Age artefacts, structures, features or settlements were identified during the survey.

Graves

No graves (including grave bases and headstones) were recorded during the survey.

Historical structures

Two demolished structures were recorded (Site 1). They were not older than 60 years and are therefore not protected by the NHRA (Act no 25 of 1999).

Recommendations

No further action is required.

However, also note the following:

It should be kept in mind that archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place **(*cf*. NHRA (Act No. 25 of 1999)**, Section 36 (6)).

Definitions and abbreviations

Midden: Refuse that accumulates in a concentrated heap.
Stone Age: An archaeological term used to define a period of stone tool use and manufacture
Iron Age: An archaeological term used to define a period associated with domesticated livestock and grains, metal-working and ceramic manufacture
NHRA: National Heritage Resources Act (Act no 25 of 1999)
SAHRA: South African Heritage Resources Agency
PHRA-G: Provincial Heritage Resources Authority - Gauteng
HIA: Heritage Impact Assessment

Contents

1. Introduction

The aim of this cultural heritage survey is to record and document cultural heritage remains consisting of visible archaeological and historical artefacts, structures (including graves) and settlements of cultural significance. The survey is part of an Environmental Impact Assessment (EIA) application process for the Kabi Vaalkop PV Solar facility near Orkney, North West Province. The survey was requested by Savannah Environmental (Pty) Ltd on behalf of the applicant, Kabi Solar.

2. Objectives

The terms of reference of this survey are as follows:

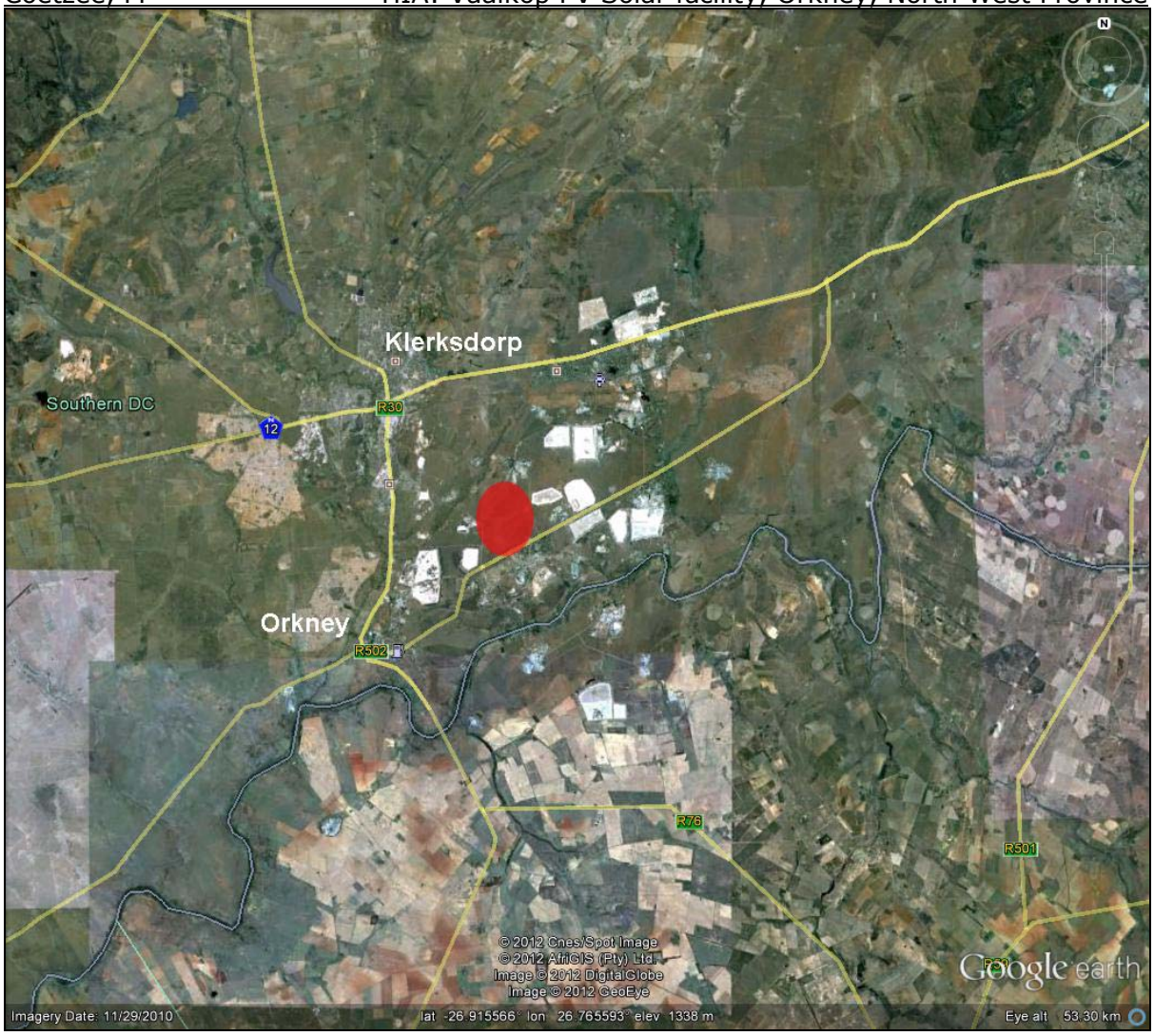
- Provide a detailed description of known archaeological and historical artefacts, structures (including graves), features and settlements
- Estimate the level of significance/importance of the these remains within the study area
- Assess any possible impact on the archaeological and historical remains within the area emanating from the proposed development activities
- Propose possible mitigation measures which will limit or prevent any impact provided that such action is necessitated by the development

3. Study Area

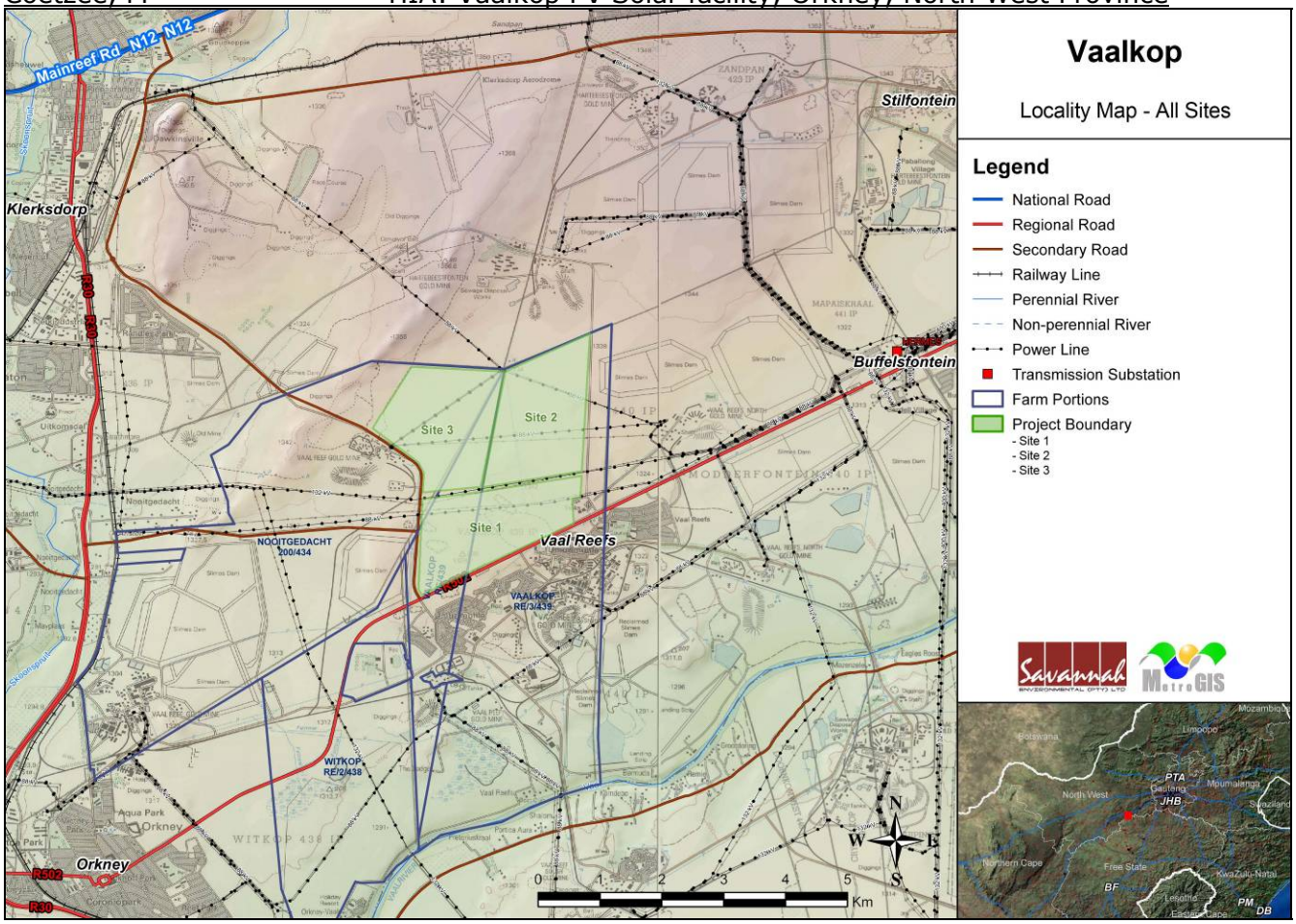
Topographically the survey area is open and flat, however the region is dominated by the surrounding features which are associated with mining activities such as shaft, slimes dam, dumps and associated infrastructure. Note that area marked as Phase 1 (see Map 4) has also been extensively disturbed by quarrying and removing surface material. The survey area is situated approximately 5 km east of Orkney in the North West Province (see Map 1).

The survey area consists of three portions which are associated with the three phases of the project. Phase 4 consists of substation and power line. The combined survey area is approximately 779 hectares and is situated on the following farm portions (see Maps 2 & 3):

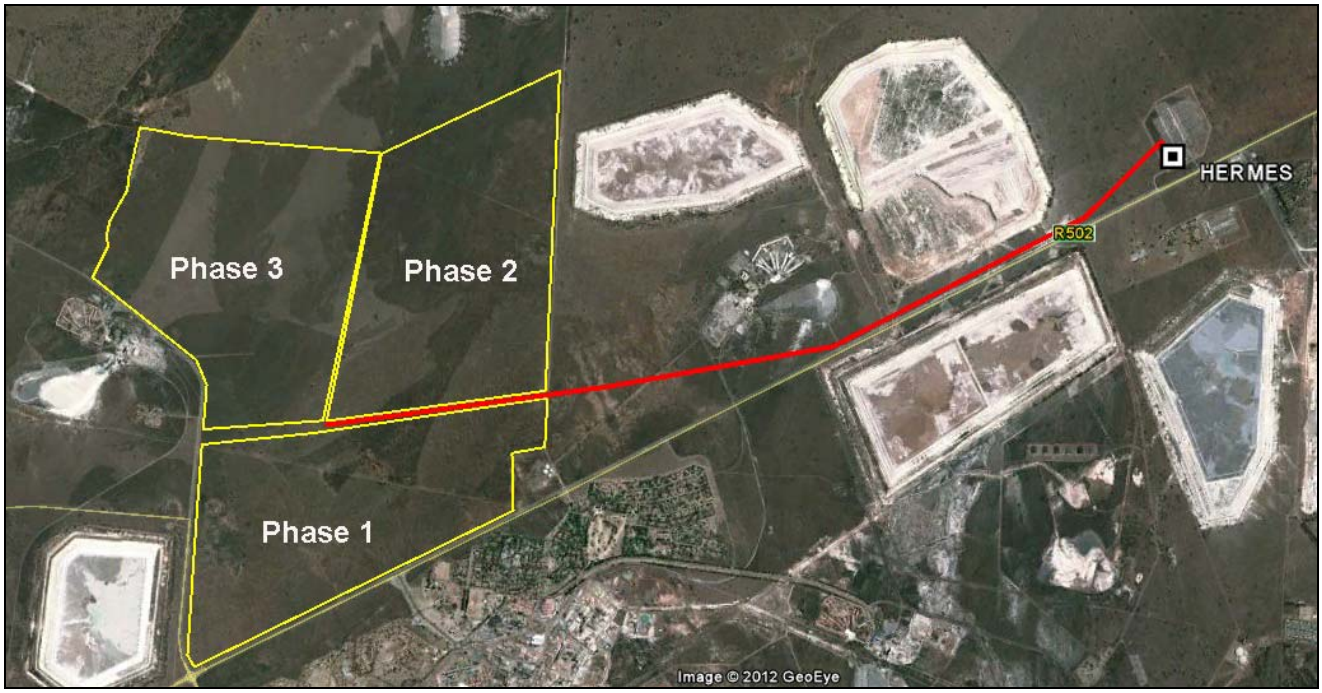
- Portion 7 of the farm Vaalkop 439 IP
- A portion of the farm Vaalkop 439 IP
- A portion of portion 3 of the farm Vaalkop 439 IP
- A portion of portion 200 of the farm Nooitgedacht 434 IP



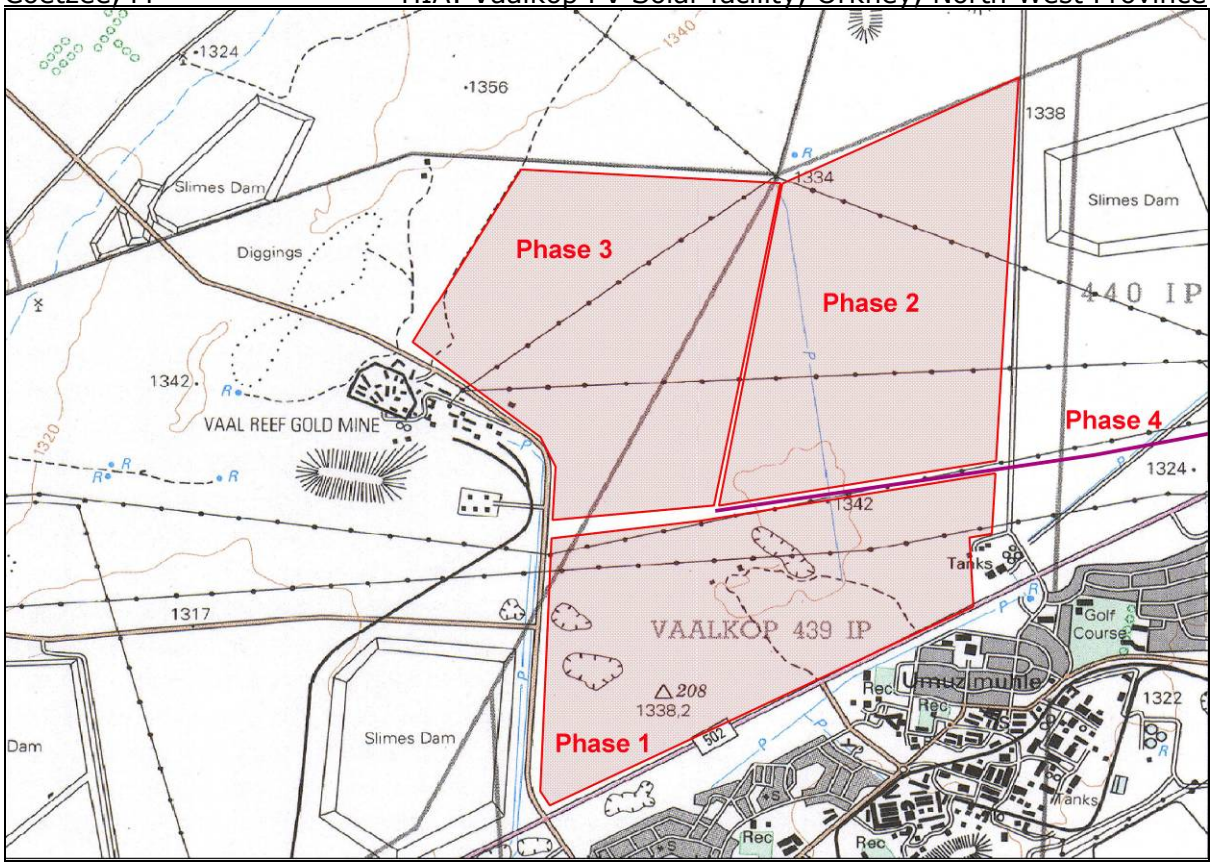
Map 1: Regional context of the survey area



Map 2: The three main survey areas indicated in green



Map 3: Detail of three main phases with the power line and substation indicated (Phase 4)



Map 4: Survey areas indicated on topographic map (Phase 4 is the new power line)

Figure 1: General view of the survey area

Figure 2: General view of the survey area (note existing infrastructure)

Figure 3: General view of the survey area

4. Proposed Project Activities

The proposed solar energy facility will consist of the following:

- Photovoltaic solar energy panels and associated infrastructure with a total generating capacity of about 208 MW, which will be developed in three phases
- An on-site substation and 6 km of new overhead power line
- Foundations to support the PV panels
- Cabling between project components
- Internal access roads
- Workshop / storage area

The proposed project will consist of four implementation phases:

- Kabi Vaalkop Solar I PV Facility
- Kabi Vaalkop Solar II PV Facility
- Kabi Vaalkop Solar III PV Facility
- Vaalkop substation and power line

5. Legal Framework

- Archaeological remains can be defined as human-made objects, which reflect past ways of life, deposited on or in the ground.

- Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and they are valuable, finite, non-renewable and irreplaceable.

- All archaeological remains, features, structures and artefacts older than 100 years and historic structures older than 60 years are protected by the relevant legislation, in this case the **National Heritage Resources Act (NHRA) (Act No. 25 of 1999, Section 34 & 35)**. The Act makes an archaeological impact assessment as part of an EIA and EMPR mandatory (see **Section 38**). No archaeological artefact, assemblage or settlement (site) may be moved or destroyed without the necessary approval from the **South African Heritage Resources Agency (SAHRA)**. Full cognisance is taken of this Act in making recommendations in this report.

- Cognisance will also be taken of the **Mineral and Petroleum Resources Development Act (Act No 28 of 2002)** and the **National Environmental Management Act (Act No 107 of 1998)** when making any recommendations.

- Human remains older than 60 are protected by the **NHRA**, with reference to **Section 36**. Human remains that are less than 60 years old are protected by the **Human Tissue Act (Act 65 of 1983 as amended)**.

- **Mitigation guidelines (The significance of the site):**

  Rating the **significance of the impact** on a historical or archaeological site is linked to the significance of the site itself. If the significance of the site is rated high, the significance of the impact will also result in a high rating. The same rule applies if the significance rating of the site is low (also see Table 1).

Significance Rating	Action
Not protected	1. None
Low	2a. Recording and documentation (Phase 1) of site adequate; no further action required
	2b. Controlled sampling (shovel test pits, auguring), mapping and documentation (Phase 2 investigation); permit required for sampling and destruction
Medium	3. Excavation of representative sample, C^{14} dating, mapping and documentation (Phase 2 investigation); permit required for sampling and destruction [including 2a & 2b]
High	4a. Nomination for listing on Heritage Register (National, Provincial or Local) (Phase 2 & 3 investigation); site management plan; permit required if utilised for education or tourism 4b. Graves: Locate demonstrable descendants through social consulting; obtain permits from applicable legislation, ordinances and regional by-laws; exhumation and reinterment [including 2a, 2b & 3]

Table 1: Rating the significance of sites

- With reference to the evaluation of sites, the certainty of prediction is definite, unless stated otherwise.

- The guidelines as provided by the **NHRA (Act No. 25 of 1999)** in Section 3, with special reference to subsection 3, and the Australian ICOMOS (International Council on Monuments and Sites) Charter (also known as the Burra Charter) are used when determining the cultural significance or other special value of archaeological or historical sites.

- It should be kept in mind that archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place **(*cf*. NHRA (Act No. 25 of 1999)**, Section 36 (6)).

- **Architectural significance:**
  - Does the site contain any important examples of a building type?
  - Are any of the buildings important examples of a style or period?
  - Do any of the buildings contain fine details and or reflect fine workmanship?
  - Are any of the buildings the work of a major architect or builder?
  - Are the buildings important examples of an industrial, technological or engineering development?
  - What is the integrity of the buildings?
  - Are the buildings still utilised?
  - Has the buildings been altered and are these alterations sympathetic to the original intent of the design?

- **Spatial significance of architecture:**
  - Is the site or any of the buildings a landmark in the city or town?
  - Does the plant contribute to the character of the neighbourhood/region?
  - Do the buildings contribute to the character of the street or square?
  - Is the place or building part of an important group of buildings?

- **Architecture**: **Levels of significance** are:
  - Protect
  - Highly significant
  - Possible significance
  - Least significance
  - No significance

- **Architecture: Levels of protection** are:

Retain and protect	Considered to be of high significance. The building or structure can be used as part of the development but must be suitably protected. Should not include major structural alterations. If the building is older than 60 years a modification permit is required from SAHRA.
Retain and re-use	Considered to be of moderate significance. The building or structure can be altered to be accommodated within the development plans. Structural alterations can be included. If the building is older than 60 years a modification permit is required from SAHRA.
Alter and re-use	Considered to be of low significance. The building or structure can be structurally altered or destruction can be considered following further documentation. If the building is older than 60 years a

	modification/destruction permit is required from SAHRA.
Can be demolished	Considered to be of negligible significance and can be demolished. If the building is older than 60 years a destruction permit is required from SAHRA.

Table 2: Level of protection of buildings/structures

- A copy of this report will be lodged with the **SAHRA** as stipulated by the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), Section 38 (especially subsection 4) and the relevant Provincial Heritage Resources Authority (PHRA).

- Note that the final decision for the approval of permits, or the removal or destruction of sites, structures and artefacts identified in this report, rests with the SAHRA (or relevant PHRA).

6. Study Approach/Methods

Regional maps, shapefiles and other geographical information were supplied by Savannah Environmental (Pty) Ltd. In addition Google images and topographic maps were used to indicate the survey area. The survey area was localised on the 1:50 000 topographic map 2626DC.

Existing access roads were used and selected areas were surveyed on foot using both systematic and intuitive pedestrian survey techniques.

6.1 Review of information/data

Additional information on the cultural heritage of the area was sourced from the following records:

- National Mapping Project by SAHRA (which lists heritage impact assessment reports submitted for South Africa)
- Maps and information documents supplied by the client
- Published literature

6.2 Site visit

The site investigation took place on 28 March 2012.

6.3 Impact assessment

The criteria used to describe heritage resources and to provide a significance rating of recorded sites are listed in the NHRA (Act 25 of 1999) specifically Section 7(7) and Section 38). SAHRA also published various regulations including: Minimum standards: Archaeological and palaeontological components of impact assessment reports in 2006.

Please note that no alternatives were proposed in terms of the project proposal.

6.4 Rating of Assessment Impacts

The following criteria are used to establish the impact rating of the proposed development on heritage resources, as provided by the client:

» 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:

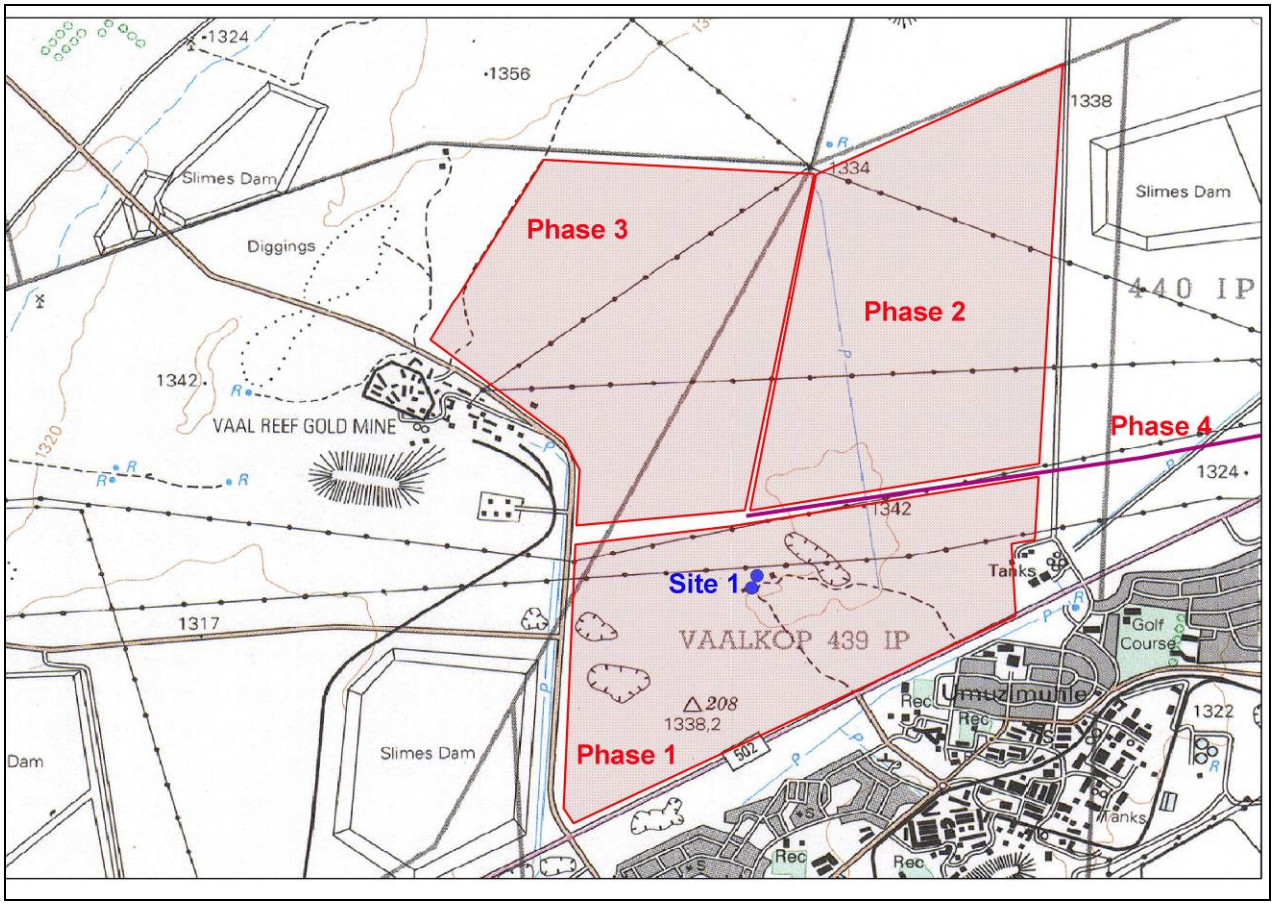
» < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
» 30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
» > 60 points: High (i.e. where the impact must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

6.5 Assumptions, uncertainties and gaps in knowledge

No severe physical restrictions were encountered. Please note that due to the subterranean nature of cultural remains this report should not be construed as a record of all archaeological and historic sites in the area.

7. Description and Evaluation of Cultural Heritage Sites

One site was recorded during the survey. Site 1 comprises the demolished remains of two square brick and cement structures that are probably not older than 60 years and therefore not protected under the NHRA (Act 25 of 1999).



Map 4: Location of recorded site in the survey area

8. Summary of Sites and Significance of Impacts

Site	Coordinates	Site Type	Significance Rating	Impact	Mitigation
1	26.925010°S 26.724430°E	Demolished structures	-	High	• None

Table 3: Position, rating, impact and mitigation of sites

Nature: During the construction and operational phases of the project various activities will impact on surfaces and/or subsurfaces which may destroy, damage, alter or remove from its original position archaeological and palaeontological structures or artefacts.		
	Without mitigation	**With mitigation**
Extent	Low (1)	Low (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Minor (2)	Low (1)
Probability	Probable (3)	Probable (3)
Significance	**11 (Low)**	**10 (Low)**
Status (positive or negative)	Negative	Negative
Reversibility	None	None
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation: Although no sites were recorded during the field survey please note that if any archaeological or palaeontological material is uncovered during construction or operation a qualified archaeologist must be contacted to assess the remains. Mitigation measures can then be activated which will include a permit from SAHRA and documentation and sampling.		
Cumulative impacts: Cultural heritage sites are a nonrenewable resource and any impacts on them is regarded as permanent and destructive.		
Residual Impacts: Destruction of heritage sites results in the depletion of known or unknown sites.		

Table 4: Significance of Impacts

9. Recommendations and Conclusions

Stone Age settlement

No Early, Middle or Later Stone Age tools were noted during the survey and no manufacturing or basecamp sites were identified.

Iron Age settlements

No Iron Age artefacts, structures, features or settlements were identified during the survey.

Graves

No graves (including grave bases and headstones) were recorded during the survey.

Historical structures

No historically significant structures were recorded. However the demolished remains of two square brick structures (Site 1) were found. They were not older than 60 years and are therefore not protected by the NHRA (Act no 25 of 1999).

Recommendations

No further action is required.

However, also note the following:

It should be kept in mind that archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place **(*cf*. NHRA (Act No. 25 of 1999)**, Section 36 (6)).

10. References (reviewed and cited)

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Addendum 1: Regional Archaeological and Historical Sequence

The table provides a general overview of the chronological sequence of the archaeological periods in South Africa.

PERIOD	APPROXIMATE DATE
Early Stone Age	More than c. 2 million years ago - c. 250 000 years ago
Middle Stone Age	c. 250 000 years ago – c. 25 000 years ago
Later Stone Age (Includes San Rock Art)	c. 25 000 years ago - c. AD 200 (up to historic times in certain areas)
Early Iron Age	c. AD 400 - c. AD 1025
Late Iron Age (Stonewalled sites)	c. AD 1025 - c. AD 1830 (c. AD 1640 - c. AD 1830)

Archaeological Context

Stone Age Sequence

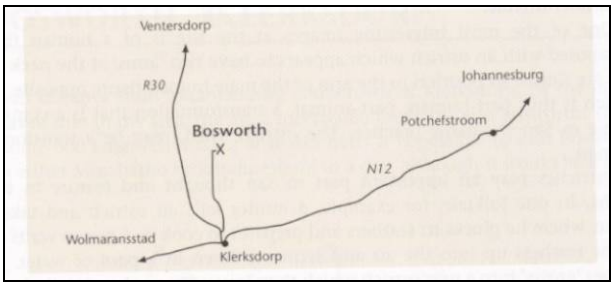
Concentrations of Early Stone Age (ESA) sites are usually present on the flood plains of perennial rivers and may date to over 2 million years ago. These ESA open sites may contain scatters of stone tools and manufacturing debris and secondly, large concentrated deposits ranging from pebble tool choppers to core tools such as handaxes and cleavers. The earliest hominins who made these stone tools, probably not always actively hunted, instead relying on the opportunistic scavenging of meat from carnivore fill sites.

Middle Stone Age (MSA) sites also occur on flood plains, but are also associated with caves and rock shelters (overhangs). Sites usually consist of large concentrations of knapped stone flakes such as scrapers, points and blades and associated manufacturing debris. Tools may have been hafted but organic materials, such as those used in hafting, seldom preserve. Limited drive-hunting activities are also associated with this period.

Sites dating to the Later Stone Age (LSA) are better preserved in rock shelters, although open sites with scatters of mainly stone tools can occur. Well-protected deposits in shelters allow for stable conditions that result in the preservation of organic materials such as wood, bone, hearths, ostrich eggshell beads and even bedding material. By using San (Bushman) ethnographic data a better understanding of this period is possible. South African rock art is also associated with the LSA.

Stone Age and Rock Art Sites

Rock art sites such as Bosworth is well known for its rock engravings. The site also yielded battered anvils, cores and flakes associated with the Earlier Smithfield tradition of the Later Stone Age (Mason 1962:303).



Map 5: Location of Bosworth rock art site

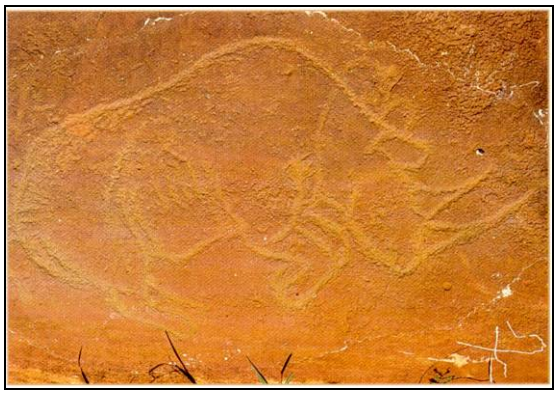


Figure 4: An example of the rock engravings at Bosworth

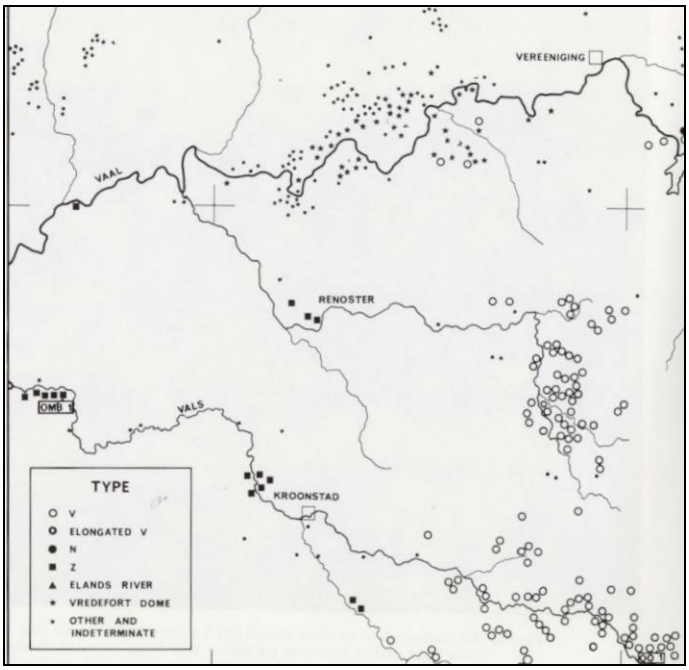
Iron Age Sequence

In the northern regions of South Africa at least three settlement phases have been distinguished for early prehistoric agropastoralist settlements during the **Early Iron Age** (EIA). Diagnostic pottery assemblages can be used to infer group identities and to trace movements across the landscape. The first phase of the Early Iron Age, known as **Happy Rest** (named after the site where the ceramics were first identified), is representative of the Western Stream of migrations, and dates to AD 400 - AD 600. The second phase of **Diamant** is dated to AD 600 - AD 900 and was first recognized at the eponymous site of Diamant in the western Waterberg. The third phase, characterised by herringbone-decorated pottery of the **Eiland** tradition, is regarded as the final expression of the Early Iron Age (EIA) and occurs over large parts of the North West Province, Northern Province, Gauteng and Mpumalanga. This phase has been dated to about AD 900 - AD 1200. These sites are usually located on low-lying spurs close to water.

The **Late Iron Age** (LIA) settlements are characterised by stone-walled enclosures situated on defensive hilltops c. AD 1640 - AD 1830). This occupation phase has been linked to the arrival of ancestral Northern Sotho, Tswana and Ndebele (Nguni–speakers) in the northern regions of South Africa with associated sites dating between the sixteenth and seventeenth centuries AD. The terminal LIA is represented by late 18th/early 19th century settlements with multichrome Moloko pottery commonly attributed to the Sotho-Tswana. These settlements can in many instances be correlated with oral traditions on population movements during which African farming communities sought refuge in mountainous regions during the processes of disruption in the northern interior of South Africa, resulting from the so-called *difaqane* (or *mfecane*).

The known Sotho-Tswana groups that settled in the area are Barolong Boo Seleka under chief Sehunelo and the Barolong Boo Rapulana under chief Matlaba. In circa 1775 the Seleka section moved to Thabeng (15 km north of Klerksdorp) and the Rapulana followed them. The Rapulana built their settlement at Matlwang (30 km north-east of Klerksdorp). These two Sotho-Tswana speaking groups remained in the area until the 1820s. During the later period of unrest they also settled at ThabaNchu for protection under chief Moshweshwe (Moshoeshoe) (Breutz 1989:126-136).

Late Iron Age stone-walled settlements were identified by Tim Maggs during his archaeological survey of the Free State in the 1960s. A Type Z settlement was recorded just south of the Vaal River near Orkney. These sites are characterised by clusters of closely packed stone-walled enclosures. Due to the double nature of some of the enclosures they are known as bilobial dwellings. Ethnographic evidence supports an association with the Barolong (Maggs 1976:37-40).



Map 6: Stone-walled settlement recorded in the area (note a Type Z site south of the Vaal River near Orkney)

Built Environment and Mining Activities

Klerksdorp

The built environment of the survey area is defined by two towns namely Klerksdorp and Orkney and the AngloGold Ashanti gold mine. Klerksdorp was founded by twelve Voortrekker families who settled on the banks of the Schoonspruit in 1837. The first magistrate was Jacob de C'lerq after whom the town was named. Klerksdorp is therefore one of oldest towns in the old Transvaal.

In 1885 gold was discovered in the Klerksdorp district by MG Jansen van Vuuren on the farm Ysterspruit. In the following year (1886) AP Roos found gold in the town commonage. As a consequence, thousands of fortune-seekers descended on the so-called Schoonspruit Gold-Field. This rush turned the small town into a settlement with 70 taverns and which later even had a stock exchange of its own. However, the nature of

the gold reef demanded expensive and sophisticated equipment to mine and extract the gold, causing the majority of diggers to move away in the late 1890s and leading to a decline in the gold mining industry (see Bulpin 2001).

Today, Klerksdorp is the centre for a large mining and agricultural economy and has the second largest grain co-operative in the world.

Orkney

The town Orkney was proclaimed on 20 March 1940 on the farm Witkoppen where the owner Simon Fraser first mined gold. He was from the Orkney Islands off the coast of Scotland. 'Orkn' is Icelandic for sea lion and 'Ey' is Nordic for island. As a result the sea lion is the emblem of the town which was proclaimed a municipality in March 1962. The town is situated near the Vaal Reefs Exploration and Mining Co Ltd (today AngloGold Ashanti) (Bulpin 2001).

Vaal Reefs Exploration and Mining Co. Ltd

Vaal Reefs acquired from Western Reefs Exploration and Development Co. Ltd the freehold and mineral rights of portions of farms Modderfontein, Vaalkop and Zandpan. An additional portion of the farm Zandpan (Crown land on Portion C) was granted on a prospecting lease until January 1952 (Mining Year Book 1952:485).

AngloGold Limited was founded in June 1998 with the consolidation of the gold mining interests of Anglo American. Vaal Reefs was one of the mines that was incorporated into the new company. Today AngloGold Ashanti as it is now known, was formed in April 2004 from the business combination between AngloGold and Ashanti Goldfields. Today, AngloGold Ashanti is the third largest gold producing mining company in the world.

Second Boer War Sites (1899 – 1902)

During the Second Boer War heavy fighting occurred in the Klerksdorp area which also housed a large concentration camp.

The Battle of Rooiwal was an engagement that took place on 11 April 1902 and resulted in a victory by a British force commanded by Colonel Robert Kekewich. Two Boer commandos were led by Generals Ferdinandus Jacobus Potgieter and Jan Kemp.

The action consisted of a Boer attack on horseback on an entrenched British hillside position in the valley of Rooiwal, near Klerksdorp. The Boers were attempting to break out of a British encircling maneuver. Their attack was repulsed at some cost to the Boers in killed and injured.

The details of the battle are as follows.

Preparing for the battle the Boers did not know of the British deployment on the hillside and they believed that Rooiwal was only lightly held. The two Boer commandos under Commandant Potgieter and General Kemp respectively, therefore tried to overrun the British position early on the morning of 11 April, in an effort to escape Hamilton's 'drive'. Commandant Potgieter had around 1,700 men, all mounted riflemen.

At around 7:15 am on 11 April, they charged the British position on horseback, firing from the saddle. A British picket of 40 mounted infantry was overrun, taking 20

casualties. Kekewich's position was a strong one, but the sight of the charging Boers panicked some of the inexperienced British troops and a number of Yeoman units fled the scene of the battle and were not stopped until they were a mile away from the fighting. A Lieutenant Carlos Hickie managed to stop the stampede with a mixture of pleas and threats. In addition, a number of the regular British officers on the scene were very critical of the 'wild' shooting of their men.

In spite of this, however, the Boer charge was stopped about 30 metres from the British line by artillery and rifle fire. Fifty Boers were killed outright and more were wounded. Among the dead was Commandant Potgieter, wearing a distinctive blue shirt. Kekewich later commented that, 'one good company of infantry could have killed 300 Boers'. The surviving Boers made good their retreat. Boer fire, delivered from the saddle, had produced about 50 casualties in the British line.

Ian Hamilton and Rawlinson arrived on the scene just as the fighting was ending. However, Hamiliton delayed the pursuit of the beaten Boers as he feared that the retreat was a ruse and that his men would fall into Boer ambushes. At about 9:45, or 90 minutes after the Boer charge had been repulsed, Hamilton sent his mounted troops in pursuit of the enemy. They captured a further 50 Boers and re-captured the artillery lost at Tweebosch (Raath 2007).

Battle of Ysterspruit (Yzer Spruit)

The most famous of the battles around Klerksdorp, is that of the **Battle of Ysterspruit**, in which the Boer General, Koos de la Rey, achieved a great victory. He battle is one of the most celebrated of the general's career, being the battle in which the Boer soldiers pioneered the art of firing from horseback.

Figure 5: Some of the weapons and horses captured after the battle

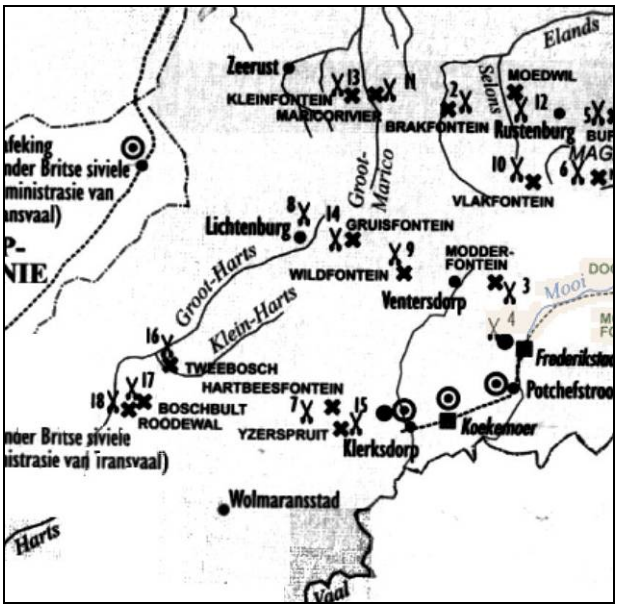
The details of the battle are as follows.

During the night of 24 February 1902 the commandos of Generals Liebenberg, Kemp and Celliers took up their positions in between Jagspruit and Ysterspruit Rivers. The aim was to attack the convoy of Colonel Anderson which was on their way to Klerksdorp.

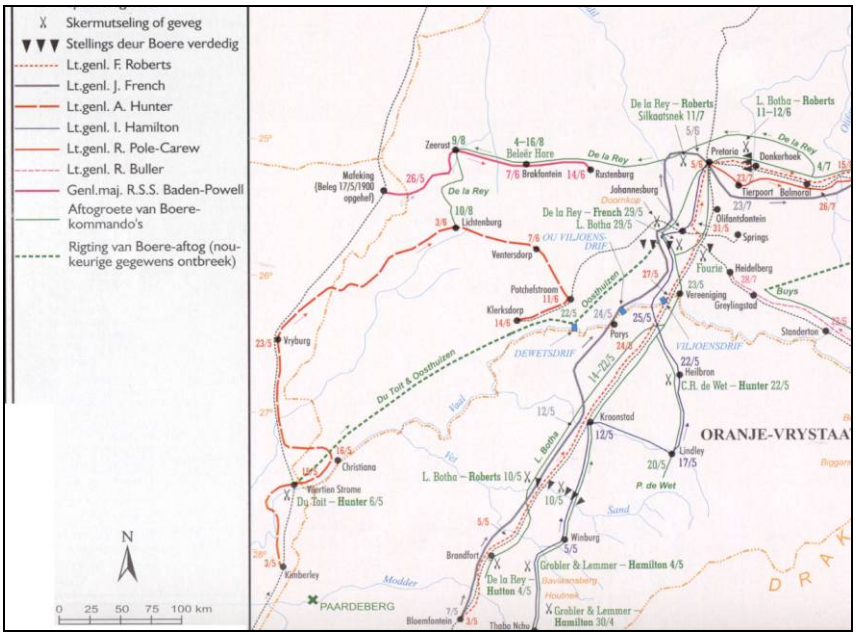
The Boer commandos of Liebenberg and Kemp stormed the convoy three times but were repulsed. It is then that Celliers charged the convoy at full gallop and his 100 men managed to overrun the British Imperial Yeomanry. As soon as the 150 men were fleeing the battle they were pursued by the all three Boer commandos. Anderson fled to Klerkdorp with the remaining men. The 5th battalion of Imperial Yeomanry was left with

28 dead and 34 wounded. The Boers managed to capture two 15 pounder Armstrong cannons, a hand-maxim machine gun and one bom-maxim (Raath 2007).

The graves of the victims of the concentration camps, namely Boer women and children, can still be visited today in the old cemetery just outside of town, numbering just below a thousand.



Map 6: Location of some of the battles that took place in the region



Map 7: Movement of the British forces in the region.

Blockhouses

By 31 May 1902 a total of approximately 8000 blockhouses over a distance of 5920 km had been erected. These included 441 stone blockhouses, 6883 Rice-type and similar corrugated iron blockhouses and 555 so-called 'works' (fieldworks). A total of 55 000 soldiers were manning these structures (Pretorius 2001:235).

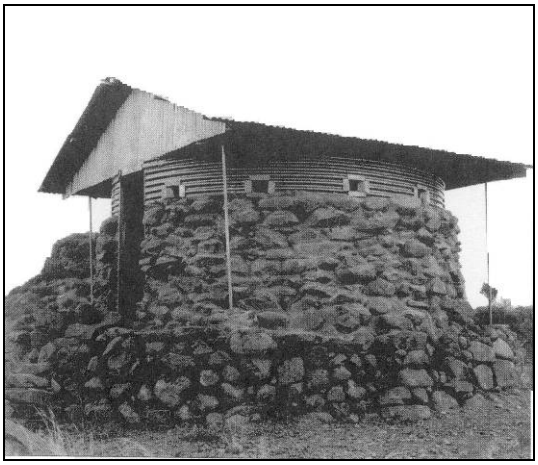
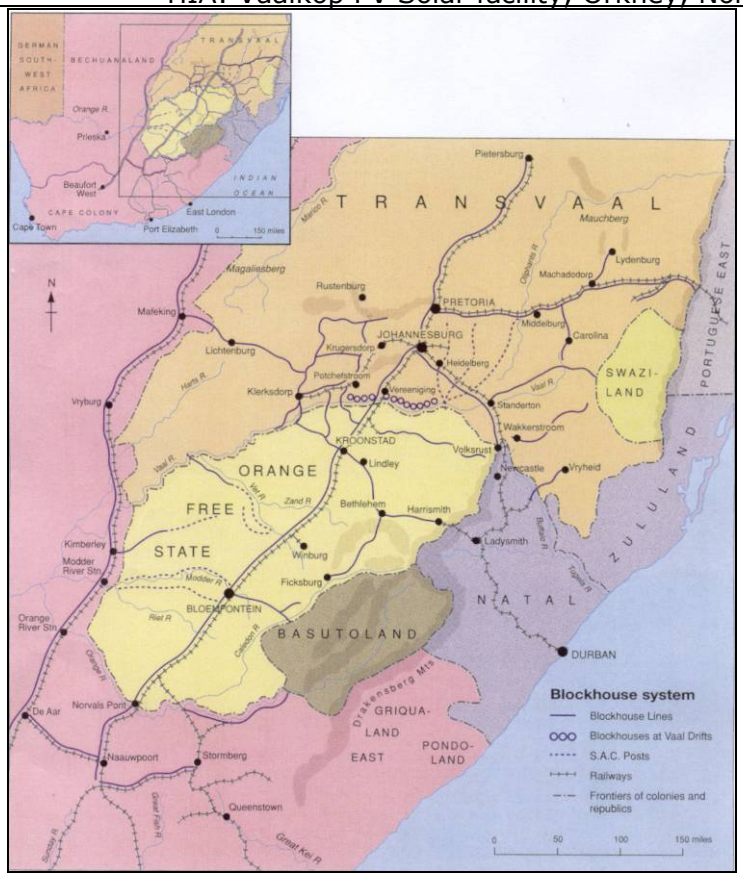


Figure 6: An example of a blockhouse (Note stone extensive stone foundation)

The 8000 strong blockhouse system mostly focused on breaking the north-south movement of the Boer commandos. Note that Klerksdorp is situated at a node where four blockhouse lines converge indicating the strategic importance of the region (Pakenham 1979:267). Two blockhouse lines emerge to the south, which is close to the survey area.



Map 8: The distribution of the blockhouse system

Addendum 2: Site Description and Evaluation

Site 1

A. GENERAL SITE DESCRIPTION
The site comprises the remains of two square brick and cement structures (measuring 5 m x 5 m and 5 m x 8 m, respectively) that have been almost completely demolished. No substantial middens or other structures were recorded in association. The enclosure was probably used for keeping livestock to overnight while grazed the area. The structure is probably older than 60 years.

B. SITE EVALUATION		
B1. HERITAGE VALUE	**Yes**	**No**
Historic Value		
It has importance to the community or pattern of South Africa's history or precolonial history.		√
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.		√
It has significance relating to the history of slavery in South Africa.		√
Aesthetic Value		
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.		√
Scientific Value		
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.		√
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.		√
It has importance to the wider understanding of the temporal change of cultural landscapes, settlement patterns and human occupation.		√
Social Value		
It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).		√
Tourism Value		
It has significance through its contribution towards the promotion of a local sociocultural identity and can be developed as tourist destination.		√
Rarity Value		
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.		√
Representative Value		
It is importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.		√
B2. REGIONAL CONTEXT		
Other similar sites in the regional landscape.		√
B3. CONDITION OF SITE		
Integrity of deposits/structures.	Demolished	

C. SPHERE OF SIGNIFICANCE	High	Medium	Low
International			
National			
Provincial			
Local			
Specific community			

D. FIELD REGISTER RATING	
National/Grade 1 [should be registered, retained]	
Provincial/Grade 2 [should be registered, retained]	
Local/Grade 3A [should be registered, mitigation not advised]	
Local/Grade 3B [High significance; mitigation, partly retained]	
Generally Protected A [High/Medium significance, mitigation]	

Generally protected B [Medium significance, to be recorded]	
Generally Protected C [Low significance, no further action]	
E. GENERAL STATEMENT OF SITE SIGNIFICANCE	
Low	
Medium	
High	
F. RATING OF POTENTIAL IMPACT OF DEVELOPMENT	
None	√
Peripheral	
Destruction	
Uncertain	

G. RECOMMENDED MITIGATION

- None, the site is sufficiently recorded.

H. APPLICABLE LEGISLATION AND LEGAL REQUIREMENTS

- None

I. PHOTOGRAPHS

Figure 6: Square stone-walled enclosure

Figure 7: Detail section of the stone wall of the enclosure