Phase 1 Heritage Impact Assessment Report:

Proposed Rehabilitation of Regional Road R61, Section 3
Between Cradock and Tarkastad,
Inxuba Yethemba and Tsolwana Local Municipalities,
Chris Hani District,
Eastern Cape Province, South Africa

Prepared for

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31 January 2013
**MANAGEMENT SUMMARY**

eThembeni Cultural Heritage was appointed by GIBB Engineering & Science to undertake a Phase 1 Heritage Impact Assessment of a proposed road upgrade in the Eastern Cape Province, as required by the National Environmental Management Act 107 of 1998 as amended, in compliance with Section 38 of the National Heritage Resources Act 25 of 1999 as amended. This report represents compliance with a full Phase 1 HIA, excluding a specialist palaeontological study, which has been undertaken by Dr John Almond of Naturaviva.

**HERITAGE RESOURCE DESCRIPTIONS AND SIGNIFICANCE**

— **Places, buildings, structures and equipment**

A section of drystone walling is located directly opposite BP 1 (Dwingfontein) at the start of the road upgrade project, on the northern side of the entrance road leading to the Michau farmstead. The significance of the walling is low at all levels.

— **Battlefields**

On 17 September 1901 during the Second Boer War in the Battle of Elands River, after the Elands River Poort, a Boer raiding force destroyed a British cavalry company on Modderfontein farm. The significance of the battlefield is as follows:

<table>
<thead>
<tr>
<th>Type of significance</th>
<th>Specialist group/community</th>
<th>Local</th>
<th>Regional</th>
<th>Provincial</th>
<th>National</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical</td>
<td>Medium-High</td>
<td>Medium-High</td>
<td>Medium</td>
<td>Low-Medium</td>
<td>Low</td>
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<tr>
<td>Aesthetic</td>
<td>Low</td>
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<tr>
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<tr>
<td>Educational</td>
<td>Medium-High</td>
<td>Medium-High</td>
<td>Medium</td>
<td>Low-Medium</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Economic including tourism</td>
<td>Medium-High</td>
<td>Medium-High</td>
<td>Medium</td>
<td>Low-Medium</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

**ASSESSMENT OF DEVELOPMENT IMPACT**

— **Places, buildings, structures and equipment**

The development will have NO IMPACT on the heritage resource.

— **Battlefields**

The development will have NO IMPACT on the heritage resource.

**RECOMMENDED MITIGATION MEASURES**

— **Places, buildings, structures and equipment**

None.

— **Battlefields**

None.
RECOMMENDED MONITORING

— Places, buildings, structures and equipment

None.

— Battlefields

None.

CONCLUSION

We recommend that the development proceed with no further heritage mitigation and have submitted this report to SAHRA in fulfilment of the requirements of the NHRA. Mr Sello Mokhanya may be contacted at the SAHRA Eastern Cape office (Eastern Cape Provincial Heritage Resources Authority, 74 Alexander Road, King Williams Town 5600; smokhanya@ecphra.org.za).

If permission is granted for development to proceed, the client is reminded that the NHRA requires that a developer cease all work immediately and follow the protocol contained in Section 9 of this report should any heritage resources, as defined in the Act, be discovered during the course of development activities.
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1 INTRODUCTION

eThembeni Cultural Heritage was appointed by GIBB Engineering & Science to undertake a Phase 1 Heritage Impact Assessment (HIA) of a proposed road upgrade in the Eastern Cape Province, as required by the National Environmental Management Act 107 of 1998 as amended (NEMA), in compliance with Section 38 of the National Heritage Resources Act 25 of 1999 (NHRA) (refer to Appendix A).

South Africa’s heritage resources are both rich and widely diverse, encompassing sites from all periods of human history. Resources may be tangible, such as buildings and archaeological artefacts, or intangible, such as landscapes and living heritage. Their significance is based upon their aesthetic, architectural, historical, scientific, social, spiritual, linguistic, economic or technological values; their representivity of a particular time period; their rarity; and their sphere of influence.

The integrity and significance of heritage resources can be jeopardized by natural (e.g. erosion) and human (e.g. development) activities. In the case of human activities, a range of legislation exists to ensure the timeous identification and effective management of heritage resources for present and future generations.

This report represents compliance with a full Phase 1 HIA, excluding a specialist palaeontological study, which has been undertaken by Dr John Almond of Naturaviva. The client negotiated with the Eastern Cape Provincial Heritage Resources Authority (EC PHRA) that the HIA and PIA reports may be submitted separately.

2 TERMS OF REFERENCE

An HIA must address the following key aspects:

− the identification and mapping of all heritage resources in the area affected;
− an assessment of the significance of such resources in terms of heritage assessment criteria set out in regulations;
− an assessment of the impact of the development on heritage resources;
− an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
− the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
− if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
− plans for mitigation of any adverse effects during and after completion of the proposed development.

In addition, the HIA should comply with the requirements of NEMA, including providing the assumptions and limitations associated with the study; the details, qualifications and expertise of the person who prepared the report; and a statement of independence.
3 PROJECT DESCRIPTION

The project involves the rehabilitation of the regional road R61, Section 3, between Cradock (km 24.2) and Tarkastad (km 75.0) in the Eastern Cape Province. The entire project from km 24.2 to km 75.0 is a winding road with a narrow cross section and very limited passing opportunities. The scope of the project includes the widening of the roadway (± 5.0 m) itself and the widening of all storm water structures along the entire project. The existing road reserve is approximately 32m.

There are 17 river or stream crossings along the project, falling into 9 different erven. Seven of the crossings are bridges, eight are culverts and in two the stream flows through a pipe underneath the road. Five of the bridges as well as the culvert and pipe structures will be widened only to suit the road cross section. The height of two other bridges was found to be inadequate and will need to be raised by 1.5 metres from their existing vertical alignment as well.

The need for the road upgrade was identified by SANRAL based on the condition of the road and on road safety considerations. The upgrade would bring this section of the R61 up to standard, which is responding to the importance of the road in enabling nation-wide efficient transportation of people and goods.

The road upgrade requires road building material from the surrounding area. The existing road layers do not contain sufficient material for the upgrade. Borrow pits and quarries will provide the additional needed material for general fill, selected fill, as well as subgrade and subbase for the road. It is proposed that material for the construction of the road will be sourced along the R61 from five borrow pits and one hard rock quarry. Mining activities at each mine are described below.

BP 1 (Dwingfontein) is situated at the start of the road upgrade project adjacent to the road. It is an extension of an existing borrow pit into a small hill. No written documentation has been traced regarding the previous mining activities at this site. Access is via the entrance road in the north leading to the Michau farmstead. While the borrow pit is active, the use of the road will be shared. When completed the borrow pit will have an oval shape of approximately 170 x 90 metres and it is to be mined for weathered dolerite to a depth of 3 - 7 metres. The extent of the area to be mined is 1.7 ha. A total quantity of 51 940 m$^3$ is needed for G7 selected and fill material from this pit to satisfy the road construction needs. The profile has been designed in such a way that the borrow pit will be self-draining towards the north-east corner. Top soil and overburden will be used for the rehabilitation of the borrow pit although the available quantities are very low. The inclined sections of the side walls, the batter, will have a slope of 1:3 when finished. Drainage of the borrow pit across the farm access road and into the unnamed non-perennial river will be managed by a headwall and pipe arrangement. The material will be mined by mechanical means with a frontend loader. No blasting will take place on site. The entire mine will be fenced. Access will be controlled with a gate, next to which there will be an office container, a weigh bridge and a stock pile area.

BP 2 (Fairview) is situated directly adjacent to the R61 on nearly flat ground. There is some evidence that the area has been mined previously, although details are not available. The completed borrow pit has a rectangular shape of 280 x 230 m. It is to be mined for weathered dolerite to a depth of 2 - 6 metres. The extent of the area to be mined is 6.2 ha. A total quantity of 176 420 m$^3$ is needed for G7 selected and fill material from this pit to satisfy the road construction needs. The profile has been designed in such a way that the borrow pit will be self-draining towards the eastern corner. Top soil and overburden will be used for the rehabilitation of the borrow pit. The inclined sections of the side walls, the batter, will have a slope of 1:3 when finished. The material will be mined by mechanical means with a frontend loader. No blasting will take place on site. The entire mine will be fenced. Access will be controlled with a gate, next to which there will be an office container, a weigh bridge and a stock pile area.

1 Information obtained from the client.
**BP 3 (Klipkral)** is a new borrow pit. Previously, mining for road material has taken place directly opposite on the other side of the road, which has left a poorly vegetated scar of some 140 x 90 m in the veld. The new completed borrow pit has a rectangular shape of 260 x 170 m. It is to be mined for weathered dolerite to a depth of 2 - 4 metres. The extent of the area to be mined is 4.3 ha. A total quantity of 134 017 m³ is needed for G7 selected and fill material from this pit to satisfy the road construction needs. The profile has been designed in such a way that the borrow pit will be self-draining towards the eastern corner. Top soil and overburden will be used for the rehabilitation of the borrow pit. The inclined sections of the side walls, the batter, will have a slope of 1:3 when finished. The material will be mined by mechanical means with a frontend loader. No blasting will take place on site. The entire mine will be fenced. Access will be controlled with a gate, next to which there will be an office container, a weigh bridge and a stock pile area.

**BP 4 (Burnley Park)** is a southward extension of a previously used borrow pit situated next to the R61. Signs of successful natural revegetation are beginning to show at the old pit, except for some bare steep edges still remaining. This will be attended to through partial filling with overburden from the new one. Caution should be exercised that the rehabilitation efforts do not annihilate the natural revegetation processes currently underway. The new completed borrow pit has a near-rectangular shape of 190 x 140 m. It is to be mined for weathered dolerite to a depth of 4 metres. The extent of the area to be mined is 2.5 ha. A total quantity of 73 093 m³ is planned to be mined that will be used for G7 selected and fill material. The profile has been designed in such a way that the borrow pit will be self-draining towards the eastern corner. Top soil and overburden will be used for the rehabilitation of the borrow pit. The inclined sections of the side walls, the batter, will have a slope of 1:3 when finished. The material will be mined by mechanical means with a frontend loader. No blasting will take place on site. The entire mine will be fenced. Access will be controlled with a gate, next to which there will be an office container, a weigh bridge and a stock pile area.

**BP 5 (Prinsfontein)** is an extension of a previously used borrow pit situated next to the R61. The new completed borrow pit has a trapezoid shape of 210 x 140 m. It is to be mined for weathered dolerite up to a depth of 6 metres in places. The extent of the area to be mined is 2.8 ha. A total quantity of 88 625 m³ road building material is planned to be mined, which will be used for G7 selected and fill material. The topography does not allow for the extended borrow pit to be self-draining. Rainwater will flow towards the northern point of the worked pit where it may be pumped out into the surrounding veld, or left in place as a seasonal waterhole. Top soil and overburden will be used for the rehabilitation of the borrow pit. The inclined sections of the side walls, the batter, will have a slope of 1:3 when finished. The material will be mined by mechanical means with a frontend loader. No blasting will take place on site. The entire mine will be fenced. Access will be controlled with a gate, next to which there will be an office container, a weigh bridge and a stock pile area.

**HRQ1 (Fairview)** is a new hard rock quarry at km 39.1 slightly offset from the R61. The quarry has an square shape of approximately 140 x 140 m. It is to be mined for dolerite up to a depth of 20 metres in places. The extent of the area to be mined is 1.57 ha. As it is carved into the hill side, it is doubtful at this time if the quarry will be self-draining when mined out. Top soil and overburden will be used for the rehabilitation. The material will be mined by mechanical means with a frontend loader after the rock has been broken by blasting. The entire mine will be fenced. Access will be controlled with a gate, next to which there will be an office container, a weigh bridge, a crusher plant and a stock pile area. Berms placed at strategic locations will hold and redirect storm water so that the dry water course at the foot of the hill is not polluted with silt.

**Alternatives**

Nearly all proposed road construction will occur within the existing road reserve of approximately 32m width. In order to achieve the desired road geometry small slivers (a few 1000 m³) of private land will have to be acquired by SANRAL. This is in progress. An alternative site or route for the road was not considered to be a viable option as it would have a much higher impact. Therefore, a route/site alternative was not assessed for this project.
During planning for the road upgrade the project engineers evaluated likely sources of material for the construction of the road. To be acceptable, the material sources had to meet the following criteria:

- Suitability of the stone and rock from a geotechnical perspective
- Availability of sufficient quantities to meet the demand
- Feasibility of extracting the material by means of opencast mining
- Short hauling distance from the borrow pit or hard rock quarry to the construction site
- No or only minimal disturbance by mining activities for local residents
- No or only minimal disturbance of the traffic flow by hauling trucks
- Absence of constraints in terms of ownership of the land or title deed restrictions
- A landowner willing to accept a borrow pit or hard rock quarry in exchange for fair compensation, and
- Low environmental impact.

The reconnaissance resulted in the identification of six mining sites (5 borrow pits and 1 hard rock quarry) along the R61 as sources for material for the construction of the road. These six mining sites fulfil all the needs. No other alternative materials sources have been identified that meet the requirements in terms of proximity to the road works and the desired quality of the road construction material. The investigation of all the proposed sites has confirmed that there is sufficient material available for use during the project. There are no feasible alternatives to the proposed method of open cast mining.
4 PROJECT LOCATION AND ENVIRONMENTAL DESCRIPTION\(^2\)

The proposed project is located within the jurisdictions of Inxuba Yethemba and Tsolwana Local Municipalities, Chris Hani District, between the towns of Cradock and Tarkastad. The relevant Surveyor-General 1:50 000 map sheets are 3225BB Lake Arthur, 3125DD Vlekpoort and 3126CC Elandsrivier\(^3\). The geographic coordinates of the start of the road upgrade are 32°04’59"S, 25°50’35"E and those of the end are 31°59’59"S, 26°14’58"E (Figure 1).

\(^2\) Information obtained from the client.
\(^3\) Given the extent of the route it is not useful to include extracts from these mapsheets in this report; the resolution of the images is too low to be of practical illustrative value.
Locations of borrow pits and quarry

**BP 1 - Dwingfontein** (RE/2/165 + RE/3/153)
24 km from the Cradock R61 turnoff
Geographical position: 32°05'01"S, 25°50'38"E

**BP 2 - Fairview** (RE/1/152)
37.3 km from the Cradock R61 turnoff
Geographical position: 32°01'04"S, 25°57'20"E

**BP 3 - Klipkraal** (RE/104)
42.5 km from the Cradock R61 turnoff
Geographical position: 31°59'06"S, 25°58'55"E

**BP 4 - Burnley Park** (RE/10/118)
53.8 km from the Cradock R61 turnoff
Geographical position: 31°56'01"S, 26°04'53"S

**BP 5 - Prinsfontein** (RE/2/94)
65.0 km from the Cradock R61 turnoff
Geographical position: 31°57'06"S, 26°11'11"E

**HRQ 1 - Fairview** (RE/2/152)
39.1 km from the Cradock R61 turnoff
Geographical position: 32°00'15"S, 25°57'46"E

Geology and soils

The rocks earmarked for mining at the borrow pits and the hard rock quarries are dark grey and reddish dolerite with a medium grain underlain by the Tarkastad Formation. They are the result of volcanic intrusions into the surrounding sedimentary layers of the Beaufort Group which is part of the Karoo Supergroup. The dolerite originally was forced between the layers of the Beaufort Group as dykes and sills when it was hot and soft, forming a continuous solid layer as it cooled and solidified. On exposure to the elements the dolerite is broken up into rounded rocks by the weathering action associated with erosion.

Soils are generally shallow and weakly developed. Crop and horticultural production at the mining sites is severely limited (even with irrigation) due to the dominant soil types.

Topography

From its start at Dwingfontein (altitude 1080m) Section 3 of the R61 traverses a gently undulating flat until reaching the Vlekpoortrivier at Klipkraal where it passes through a gap between two mountains of 1200m in height. Thereafter, in long straight sections, the road climbs slightly, passing the Maermansberg (1674m) on the right side, until it reaches the crossing of the Elandsrivier at the 401 turnoff to Hofmeyr (height 1250m). On its way to Tarkastad the R61 stays at the valley bottom between the Elandskop peak (1749m) and the spectacular buttress of the Middelkraal mountains (2031m). The road then climbs steadily until it reaches the town limit of Tarkastad at a height of 1320m.

Climate

Section 3 of the Regional Route R61 lies within a summer rainfall region peaking from January to March. However, rainfall is unpredictable and often falls in heavy storms. There is a west to east gradient in rainfall along section 3 of the R61 road. The mean annual precipitation ranges between 298 ± 82 mm at Borrow Pit 1 to 370 ± 94 mm at BP5. Half a metre of rain a year is regarded as the minimum amount required for sustainable (dryland) crop production. Hence life stock farming (sheep and cattle) prevails in the area. The aridity of the area will have a marked effect on the ability to rehabilitate disturbed veld.

Temperatures also vary greatly. Summer maximum reaches 38°C, but frost can be expected between May to August. Strong north-westerly winds can be expected from July to September in higher lying areas, while frequent south-westerly winds bring rain in summer.
Fauna, flora and biodiversity

The road and its associated mines span across the Eastern Nama Karoo and the Grassveld biomes. The vegetation can be broadly categorised into a) riverine bush dominated by dense thickets of Sweet Thorn *Acacia karoo*, b) dry and arid flats covered by *Aristida congesta* grass and Karoo shrubs. The road traverses the following vegetation types, all of which are classified as Least Threatened:

- **Southern Karoo Riviere** occurs on alluvial soils and is characterised by the presence of grasses and low, mostly thorny shrubs. On site, this azonal vegetation unit is embedded into the surrounding Grassland biome.
- **Eastern Upper Karoo** is contained within the Nama Karoo biome. This vegetation unit consists of sparsely vegetated, gently sloping plains dominated by microphyllous shrubs and grasses of the genera *Aristida* and *Eragrostis*.
- **Tarkastad Montane Shrubland** is found in the Grassland biome. The vegetation is of a low height consisting of a mix of grasses and small shrubs amongst bare rock.
- **Queenstown Thornveld** consists of a complex of *Acacia* thornveld and grassland dominated by *Aristida congesta*. It is found on the near-level bottomlands of intra-mountain basins.

None of the terrestrial ecosystem occurring in the area have been assigned Critically Endangered or Endangered status. However, the entire middle part (from km 36.9 to km 65.4 = 28.5 km) of the road upgrade project lies inside a recognised biodiversity conservation corridor as determined by the Eastern Cape Biodiversity Conservation Plan of 2007.

The fauna within the area has been affected to varying extents since the advent of commercial farming. While megaherbivores have been hunted out, medium and small mammals still occur in reasonable numbers, such as baboon, bushbuck, duiker, vervet monkey, black-backed jackal, hare, mountain reedbuck, porcupine, antbear, steenbok and dassie.

Threatened mammals that could occur in the greater study area are the Endangered White-tailed Rat *Mystromys albicaudatus* and the Mountain Zebra *Equus zebra zebra* that is regarded as Vulnerable. The proposed mining activities are unlikely to pose a threat to these two mammals.

No reptiles or amphibians of conservation concern were identified at the study area. The bird fauna is not regarded as vulnerable to the mining activities.
5 **IDENTIFICATION AND SIGNIFICANCE OF HERITAGE RESOURCES**

The following table summarises the heritage resource types assessed, and our observations.

<table>
<thead>
<tr>
<th>Heritage resource type</th>
<th>Observation</th>
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<tbody>
<tr>
<td>Places, buildings, structures and equipment</td>
<td>See below.</td>
</tr>
<tr>
<td>Places associated with oral traditions or living heritage</td>
<td>None were identified within the proposed development area.</td>
</tr>
<tr>
<td>Landscapes</td>
<td>None were identified within the proposed development area.</td>
</tr>
<tr>
<td>Natural features</td>
<td>None were identified within the proposed development area.</td>
</tr>
<tr>
<td>Burial grounds and graves</td>
<td>None were identified within the proposed development area.</td>
</tr>
<tr>
<td>Ecofacts</td>
<td>None were identified within the proposed development area.</td>
</tr>
<tr>
<td>Geological sites of scientific or cultural importance</td>
<td>None were identified within the proposed development area.</td>
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<tr>
<td>Archaeological sites</td>
<td>None were identified within the proposed development area.</td>
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<tr>
<td>Historical settlements and townscapes</td>
<td>None were identified within the proposed development area.</td>
</tr>
<tr>
<td>Public monuments and memorials</td>
<td>None were identified within the proposed development area.</td>
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<tr>
<td>Battlefields</td>
<td>See below.</td>
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</tbody>
</table>

Construction of the R61 and its ongoing maintenance have caused extensive disturbance to the road reserve (Figure 2). Accordingly, we located no heritage resources of any description in these areas. The borrow pits and quarry are located in inhospitable environments characterised by dolerite outcrops, which would have been eschewed for human settlement in the past (Figure 3). Accordingly, the only heritage resources that we identified on or close to these mining areas are associated with recent farming practices and a battlefield, as described below.

**Figure 2 Typical road verge disturbance.**

**Figure 3 Typical dolerite environment.**
A section of drystone walling is located at 32°04'59.2"S, 25°50'37.4"E; directly opposite BP 1 (Dwingfontein) at the start of the road upgrade project, on the northern side of the entrance road leading to the Michaul farmstead (Figure 4). Dense thorny vegetation prevented access to the walling to determine its precise extent, but it evidently demarcated a camp or historic farm boundary and has fallen into disrepair following the introduction of modern fencing materials. However, although it might be older than 100 years, since it retains use value it comprises a structure rather than an archaeological site. The significance of the walling is as follows:

**Table 2** Heritage significance of drystone walling.

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<tr>
<th>Type of significance</th>
<th>Specialist group/community</th>
<th>Local</th>
<th>Regional</th>
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**Figure 4** Drystone walling located opposite BP1.
### BATTLEFIELDS

In the Battle of Elands River, after the Elands River Poort, on 17 September 1901 during the Second Boer War, a Boer raiding force under Jan Smuts destroyed a British cavalry company led by Captain Sandeman, a cousin of Winston Churchill, on the Modderfontein farm. This battle is therefore also known as the Battle of Modderfontein. Refer to Appendix B for a full account of the background to the battle, the event itself, and its aftermath.

The significance of the battlefield is as follows:

#### Table 3 Heritage significance of the Battle of Elands River.

<table>
<thead>
<tr>
<th>Type of significance</th>
<th>Sphere of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Specialist group/community</td>
</tr>
<tr>
<td>Historical</td>
<td>Medium-High</td>
</tr>
<tr>
<td>Aesthetic</td>
<td>Low</td>
</tr>
<tr>
<td>Scientific</td>
<td>Low-Medium</td>
</tr>
<tr>
<td>Social/cultural/spiritual</td>
<td>Low-Medium</td>
</tr>
<tr>
<td>Educational</td>
<td>Medium-High</td>
</tr>
<tr>
<td>Economic including tourism</td>
<td>Medium-High</td>
</tr>
</tbody>
</table>

### 6 ASSESSMENT OF DEVELOPMENT IMPACT

#### PLACES, BUILDINGS, STRUCTURES AND EQUIPMENT

Since the drystone walling is fenced off on the opposite side of the entrance road to the farm, isolated and removed from the proposed borrow pit expansion to the south, the proposed development will have NO IMPACT on the heritage resource.

#### BATTLEFIELDS

Since the visible remains of the battlefield are confined to areas adjacent to the proposed road upgrade, the proposed development will have NO IMPACT on the heritage resource.

### 7 RECOMMENDED MITIGATION MEASURES

#### PLACES, BUILDINGS, STRUCTURES AND EQUIPMENT

None.

#### BATTLEFIELDS

None.

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8 RECOMMENDED MONITORING

— PLACES, BUILDINGS, STRUCTURES AND EQUIPMENT

None.

— BATTLEFIELDS

None.

9 PROTOCOL FOR THE IDENTIFICATION, PROTECTION AND RECOVERY OF HERITAGE RESOURCES DURING CONSTRUCTION AND OPERATION

It is possible that sub-surface heritage resources will be encountered during the construction phase of this project. The Project Engineer, Environmental Control Officer and all other persons responsible for site management and excavation should be aware that indicators of sub-surface sites could include:

- Ash deposits (unnaturally grey appearance of soil compared to the surrounding substrate);
- Bone concentrations, either animal or human;
- Ceramic fragments, including potsherds;
- Stone concentrations that appear to be formally arranged (may indicate the presence of an underlying burial); and
- Fossilised remains of fauna and flora, including trees.

In the event that such indicator(s) of heritage resources are identified, the following actions should be taken immediately:

- All construction within a radius of at least 20m of the indicator should cease. This distance should be increased at the discretion of supervisory staff if heavy machinery or explosives could cause further disturbance to the suspected heritage resource.
- This area must be marked using clearly visible means, such as barrier tape, and all personnel should be informed that it is a no-go area.
- A guard should be appointed to enforce this no-go area if there is any possibility that it could be violated, whether intentionally or inadvertently, by construction staff or members of the public.
- No measures should be taken to cover up the suspected heritage resource with soil, or to collect any remains such as bone or stone.
- If a heritage practitioner has been appointed to monitor the project, s/he should be contacted and a site inspection arranged as soon as possible.
- If no heritage practitioner has been appointed to monitor the project, Mr Sello Mokhanya must be contacted at the SAHRA Eastern Cape office; smokhanya@ecphra.org.za.
- The South African Police Services should be notified by a SAHRA staff member or an independent heritage practitioner if human remains are identified. No SAPS official may disturb or exhume such remains, whether of recent origin or not.
- All parties concerned should respect the potentially sensitive and confidential nature of the heritage resources, particularly human remains, and refrain from making public statements until a mutually agreed time.
Any extension of the project beyond its current footprint involving vegetation and/or earth clearance should be subject to prior assessment by a qualified heritage practitioner, taking into account all information gathered during this initial HIA.

10 CONCLUSION

We recommend that the development proceed with no further heritage mitigation and have submitted this report to SAHRA in fulfilment of the requirements of the NHRA. According to Section 38(4) of the Act the report shall be considered timeously by the Council which shall, after consultation with the person proposing the development, decide –

- whether or not the development may proceed;
- any limitations or conditions are to be applied to the development;
- what general protections in terms of this Act apply, and what formal protections may be applied to such heritage resources;
- whether compensatory action shall be required in respect of any heritage resources damaged or destroyed as a result of the development; and
- whether the appointment of specialists is required as a condition of approval of the proposal.

Mr Sello Mokhanya may be contacted at the SAHRA Eastern Cape office (Eastern Cape Provincial Heritage Resources Authority, 74 Alexander Road, King Williams Town 5600; smokhanya@ecphra.org.za).

If permission is granted for development to proceed, the client is reminded that the NHRA requires that a developer cease all work immediately and follow the protocol contained in Section 9 of this report should any heritage resources, as defined in the Act, be discovered during the course of development activities.
11 BIBLIOGRAPHY

Appendix B


Appendix C (Methodology)

APPENDIX A        STATUTORY REQUIREMENTS

General

The Constitution of the Republic of South Africa Act 108 of 1996 is the source of all legislation. Within the Constitution the Bill of Rights is fundamental, with the principle that the environment should be protected for present and future generations by preventing pollution, promoting conservation and practising ecologically sustainable development. With regard to spatial planning and related legislation at national and provincial levels the following legislation may be relevant:

- Physical Planning Act 125 of 1991
- Municipal Structures Act 117 of 1998
- Municipal Systems Act 32 of 2000
- Development Facilitation Act 67 of 1995 (DFA)

The identification, evaluation and management of heritage resources in South Africa is required and governed by the following legislation:

- National Environmental Management Act 107 of 1998 (NEMA)
- KwaZulu-Natal Heritage Act 4 of 2008 (KZNHA)
- National Heritage Resources Act 25 of 1999 (NHRA)
- Minerals and Petroleum Resources Development Act 28 of 2002 (MPRDA)

National Heritage Resources Act 25 of 1999

The NHRA established the South African Heritage Resources Agency (SAHRA) together with its Council to fulfil the following functions:

- co-ordinate and promote the management of heritage resources at national level;
- set norms and maintain essential national standards for the management of heritage resources in the Republic and to protect heritage resources of national significance;
- control the export of nationally significant heritage objects and the import into the Republic of cultural property illegally exported from foreign countries;
- enable the provinces to establish heritage authorities which must adopt powers to protect and manage certain categories of heritage resources; and
- provide for the protection and management of conservation-worthy places and areas by local authorities.

Heritage Impact Assessments

Section 38(1) of the NHRA of 1999 requires the responsible heritage resources authority to notify the person who intends to undertake a development that fulfils the following criteria to submit an impact assessment report if there is reason to believe that heritage resources will be affected by such development:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- the construction of a bridge or similar structure exceeding 50m in length;
- any development or other activity which will change the character of a site—
  (i) exceeding 5 000m² in extent; or
  (ii) involving three or more existing erven or subdivisions thereof; or
  (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;  
− the re-zoning of a site exceeding 10 000m² in extent; or  
− any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.

Reports in fulfilment of Section 38(3) of the Act must include the following information:

− the identification and mapping of all heritage resources in the area affected;  
− an assessment of the significance of such resources in terms of the heritage assessment criteria set out in regulations;  
− an assessment of the impact of the development on such heritage resources;  
− an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;  
− the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;  
− if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and  
− plans for mitigation of any adverse effects during and after completion of the proposed development.

Definitions of heritage resources

The NHRA defines a heritage resource as any place or object of cultural significance i.e. of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This includes, but is not limited to, the following wide range of places and objects:

− living heritage as defined in the National Heritage Council Act No 11 of 1999 (cultural tradition; oral history; performance; ritual; popular memory; skills and techniques; indigenous knowledge systems; and the holistic approach to nature, society and social relationships);  
− ecofacts (non-artefactual organic or environmental remains that may reveal aspects of past human activity; definition used in KwaZulu-Natal Heritage Act 2008);  
− places, buildings, structures and equipment;  
− places to which oral traditions are attached or which are associated with living heritage;  
− historical settlements and townscape;  
− landscapes and natural features;  
− geological sites of scientific or cultural importance;  
− archaeological and palaeontological sites;  
− graves and burial grounds;  
− public monuments and memorials;  
− sites of significance relating to the history of slavery in South Africa;  
− movable objects, but excluding any object made by a living person; and  
− battlefields.

Furthermore, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—

− its importance in 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;
it’s strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.

‘Archaeological’ means –
material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation;
wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

‘Palaeontological’ means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

A ‘place’ is defined as:
a site, area or region;
a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
a group of buildings or other structures which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures;
an open space, including a public square, street or park; and
in relation to the management of a place, includes the immediate surroundings of a place.

‘Public monuments and memorials’ means all monuments and memorials—
erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government; or
which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual;

‘Structures’ 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.
Management of Graves and Burial Grounds

- **Graves younger than 60 years** are protected in terms of Section 2(1) of the Removal of Graves and Dead Bodies Ordinance 7 of 1925 as well as the Human Tissues Act 65 of 1983. Such graves 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 Member of the Executive Council for Local Government and Planning, or in some cases the MEC for Housing and Welfare.

  Authorisation for exhumation and reinterment 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. In order to handle and transport human remains the institution conducting the relocation should be authorised under Section 24 of the Human Tissues Act 65 of 1983.

- **Graves older than 60 years situated outside a formal cemetery administered by a local authority** are protected in terms of Section 36 of the NHRA as well as the Human Tissues Act of 1983. Accordingly, such graves are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36(5) of NHRA) is applicable to graves older than 60 years that are situated outside a formal cemetery administered by a local authority. Graves in the category located inside a formal cemetery administered by a local authority will also require the same authorisation as set out for graves younger than 60 years over and above 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.

  The protocol for the management of graves older than 60 years situated outside a formal cemetery administered by a local authority is detailed in Section 36 of the NHRA:

  (3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—
  (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
  (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
  (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

  (4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

  (5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—
  (a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and
  (b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

  (6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in
co-operation with the South African Police Service and in accordance with regulations of the responsible
heritage resources authority—
(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is
protected in terms of this Act or is of significance to any community; and
(b) if such grave is protected or is of significance, assist any person who or community which is a direct
descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in
the absence of such person or community, make any such arrangements as it deems fit.

The Vermillion Accord on Human Remains

Adopted in 1989 at WAC Inter-Congress, South Dakota, USA

1. Respect for the mortal remains of the dead shall be accorded to all, irrespective of origin, race, religion,
nationality, custom and tradition.

2. Respect for the wishes of the dead concerning disposition shall be accorded whenever possible,
reasonable and lawful, when they are known or can be reasonably inferred.

3. Respect for the wishes of the local community and of relatives or guardians of the dead shall be accorded
whenever possible, reasonable and lawful.

4. Respect for the scientific research value of skeletal, mummified and other human remains (including fossil
hominids) shall be accorded when such value is demonstrated to exist.

5. Agreement on the disposition of fossil, skeletal, mummified and other remains shall be reached by
negotiation on the basis of mutual respect for the legitimate concerns of communities for the proper
disposition of their ancestors, as well as the legitimate concerns of science and education.

6. The express recognition that the concerns of various ethnic groups, as well as those of science are
legitimate and to be respected, will permit acceptable agreements to be reached and honoured.

http://www.worldarchaeologicalcongress.org/
APPENDIX B  ARCHAEOLOGICAL AND HISTORICAL CONTEXT OF THE STUDY AREA

The Stone Age

No systematic Early and Middle Stone Age research has been undertaken in the proposed development area, hence the general nature of this section. Open air scatters of stone artefacts, probably with low heritage significance, could be expected in areas with minimal environmental disturbance.

South Africa’s prehistory has been divided into a series of phases based on broad patterns of technology. The primary distinction is between a reliance on chipped and flaked stone implements (the Stone Age) and the ability to work iron (the Iron Age). Spanning a large proportion of human history, the Stone Age in Southern Africa is further divided into the Early Stone Age, or Paleolithic Period (about 2 500 000–150 000 years ago), the Middle Stone Age, or Mesolithic Period (about 150 000–30 000 years ago), and the Late Stone Age, or Neolithic Period (about 30 000–2 000 years ago). The simple stone tools found with australopithecine fossil bones fall into the earliest part of the Early Stone Age.

— The Early Stone Age

Most Early Stone Age sites in South Africa can probably be connected with the hominin species known as *Homo erectus*. Simply modified stones, hand axes, scraping tools, and other bifacial artifacts had a wide variety of purposes, including butchering animal carcasses, scraping hides, and digging for plant foods. Most South African archaeological sites from this period are the remains of open camps, often by the sides of rivers and lakes, although some are rock shelters, such as Montagu Cave in the Cape region.

— The Middle Stone Age

The long episode of cultural and physical evolution gave way to a period of more rapid change about 200 000 years ago. Hand axes and large bifacial stone tools were replaced by stone flakes and blades that were fashioned into scrapers, spear points, and parts for hafted, composite implements. This technological stage, now known as the Middle Stone Age, is represented by numerous sites in South Africa.

Open camps and rock overhangs were used for shelter. Day-to-day debris has survived to provide some evidence of early ways of life, although plant foods have rarely been preserved. Middle Stone Age bands hunted medium-sized and large prey, including antelope and zebra, although they tended to avoid the largest and most dangerous animals, such as the elephant and the rhinoceros. They also ate seabirds and marine mammals that could be found along the shore and sometimes collected tortoises and ostrich eggs in large quantities.

— The Late Stone Age

Basic toolmaking techniques began to undergo additional change about 40 000 years ago. Small finely worked stone implements known as microliths became more common, while the heavier scrapers and points of the Middle Stone Age appeared less frequently. Archaeologists refer to this technological stage as the Late Stone Age. The numerous collections of stone tools from South African archaeological sites show a great degree of variation through time and across the subcontinent.

The remains of plant foods have been well preserved at such sites as Melkhoutboom Cave, De Hangen, and Diepkloof in the Cape region. Animals were trapped and hunted with spears and arrows on which were mounted well-crafted stone blades. Bands moved with the seasons as they followed game into higher lands in the spring and early summer months, when plant foods could also be found. When available, rock overhangs became shelters; otherwise, windbreaks were built. Shellfish, crayfish, seals, and seabirds were also important sources of food, as were fish caught on lines, with spears, in traps, and possibly with nets.

6 http://www.britannica.com; article authored by Colin J. Bundy, Julian R. D. Cobbing, Martin Hall and Leonard Monteath Thompson
Dating from this period are numerous engravings on rock surfaces, mostly on the interior plateau, and paintings on the walls of rock shelters in the mountainous regions, such as the Drakensberg and Cederberg ranges. The images were made over a period of at least 25 000 years. Although scholars originally saw the South African rock art as the work of exotic foreigners such as Minoans or Phoenicians or as the product of primitive minds, they now believe that the paintings were closely associated with the work of medicine men, shamans who were involved in the well-being of the band and often worked in a state of trance. Specific representations include depictions of trance dances, metaphors for trance such as death and flight, rainmaking, and control of the movement of antelope herds.

Iron Age

Archaeological evidence shows that Bantu-speaking agriculturists first settled in southern Africa around AD 300. Bantu-speakers originated in the vicinity of modern Cameroon from where they began to move eastwards and southwards, some time after 400 BC, skirting around the equatorial forest. An extremely rapid spread throughout much of sub-equatorial Africa followed: dating shows that the earliest communities in Tanzania and South Africa are separated in time by only 200 years, despite the 3 000 km distance between the two regions. It seems likely that the speed of the spread was a consequence of agriculturists deliberately seeking iron ore sources and particular combinations of soil and climate suitable for the cultivation of their crops.

The earliest agricultural sites in KwaZulu-Natal date to between AD 400 and 550. All are situated close to sources of iron ore, and within 15 km of the coast. Current evidence suggests it may have been too dry further inland at this time for successful cultivation. From 650 onwards, however, climatic conditions improved and agriculturists expanded into the valleys of KwaZulu-Natal, where they settled close to rivers in savanna or bushveld environments. There is a considerable body of information available about these early agriculturists.

Seed remains show that they cultivated finger millet, bulrush millet, sorghum and probably the African melon. It seems likely that they also planted African groundnuts and cowpeas, though direct evidence for these plants is lacking from the earlier periods. Faunal remains indicate that they kept sheep, cattle, goats, chickens and dogs, with cattle and sheep providing most of the meat. Men hunted, perhaps with dogs, but hunted animals made only a limited contribution to the diet in the region.

Metal production was a key activity since it provided the tools of cultivation and hunting. The evidence indicates that people who worked metal lived in almost every village, even those that were considerable distances from ore sources.

Large-scale excavations in recent years have provided data indicating that first-millennium agriculturist society was patrilineal and that men used cattle as bridewealth in exchange for wives. On a political level, society was organised into chiefdoms that, in our region, may have had up to three hierarchical levels. The villages of chiefs tended to be larger than others, with several livestock enclosures, and some were occupied continuously for lengthy periods. Social forces of the time resulted in the concentration of unusual items on these sites. These include artefacts that originated from great distances, ivory items (which as early as AD 700 appear to have been a symbol of chieftainship), and initiation paraphernalia.

This particular way of life came to an end around AD 1000, for reasons that we do not yet fully understand. There was a radical change in the decorative style of agriculturist ceramics at this time, while the preferred village locations of the last four centuries were abandoned in favour of sites along the coastal littoral. In general, sites dating to between 1050 and 1250 are smaller than most earlier agriculturist settlements. It is tempting to see in this change the origin of the Nguni settlement pattern. Indeed, some archaeologists have suggested that the changes were a result of the movement into the region of people who were directly ancestral to the Nguni-speakers of today. Others prefer to see the change as the product of social and cultural restructuring within resident agriculturist communities.

Whatever the case, it seems likely that this new pattern of settlement was in some way influenced by a changing climate, for there is evidence of increasing aridity from about AD 900. A new pattern of

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economic inter-dependence evolved that is substantially different from that of earlier centuries, and is one that continued into the colonial period nearly 500 years later.

**Cradock**

Cradock is a town in the Eastern Cape Province of South Africa, in the upper valley of the Great Fish River, 292 kilometres by rail northeast of Port Elizabeth. The town is the administrative seat of the Inxuba Yethemba Local Municipality in the Chris Hani District of the Eastern Cape. The estimated population in 2005 is 28 689.

Lieutenant Governor and war leader Andries Stockenstrom established this spot as the magisterial seat for the surrounding region in 1812. The area was chosen for being strategically located for the frontier wars. The town was founded on 27 August 1818 when a Dutch Reformed church was built; it is named after Sir John Cradock, governor of the Cape from 1811 to 1813. The design of the Dutch Reformed Church building is based on that of St Martin-in-the-Fields in London.

In the 1830s the Great Trek began, as Afrikaans farmers who were discontent with British rule left en masse for the interior. Most of the migration departed from (and via) the area around Cradock. The Cape Colony received a degree of independence in 1872 when "Responsible Government" was declared and, in 1877, the government of Prime Minister John Molteno began construction of the railway line connecting Cradock to Port Elizabeth on the coast. This was officially opened on 21 November 1880, and led to significant growth and economic development in and around the town. In the early 1900s, a boom in demand for ostrich feathers led to a massive rise in prosperity for the local ostrich farmers.

The Cradock Four — Matthew Goniwe, Sparrow Mkhonto, Fort Calata and Sicelo Mhlauli — were abducted while travelling from Port Elizabeth to Cradock in 1985. They were then taken to Olifantshoek Pass and later to Port Elizabeth, where they were assaulted, killed and their bodies and the vehicle in which they were travelling burnt on June 27, 1985. Three Security Branch policemen, a Sergeant Faku, Sergeant Mgoduka, and one Sakati who participated in the killing of the activists were later killed in a car bomb blast at Motherwell in 1989. Two inquests were held following the killing of the Cradock activists. During the second inquest in 1994, evidence was presented which pointed to the involvement of the then South African Defence Force in the killing of the activists. This evidence related to a signal which was allegedly sent by Colonel Lourens du Plessis on behalf of Brigadier van der Westhuizen to Major General van Rensburg, in which the 'permanent removal' from society of the deceased was recommended.

Cradock is one of the Cape’s chief centres of the wool industry, and also produces beef, dairy, fruit, lucerne and mohair. In the neighbouring district a few herds of mountain zebras survive, now protected by game laws. Due to its hot sulphur springs the town enjoys a reputation as one of the best health resorts in the province. Among the town's other attractions are the Victoria Manor Hotel and the “tuishuise”, a collection of restored Victorian era craftsmen’s houses in Market Street.

**Tarkastad**

Tarkastad is a small Karoo town in the Eastern Cape Province of South Africa, located on a plain to the north of the Winterberg mountain range. The name Tarkastad is believed to come from the Khoi-Khoi word Traka (meaning women) or the Celtic word Tarka (meaning otter) and the Afrikaans word Stad (meaning city).

Tarkastad was established in 1862 as a church centre and became a municipality in 1864. Elands River Poort, a mountain pass located in the Karoo, 24km to the NNW of Tarkastad, where the Battle of Elands River (1901) was fought during the Second Boer War. The grave of Lt. Sheridan, cousin of Winston Churchill, who was killed in the Battle of Elands River can be found on the Modderfontein farm just outside of Tarkastad.

San rock paintings can be seen in the area. Victorian cast iron lamp posts and broekie lace adornments indicate the British colonial influence.

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8 http://en.wikipedia.org/wiki/Cradock,_Eastern_Cape
9 http://en.wikipedia.org/wiki/Tarkastad
Battle of Elands River (1901)

Background

After a year of guerilla war, the Boer leaders decided to send significant raiding forces into the Cape Colony and Natal. About 1000 Boers in six commandos already operated in the Cape Colony. The Boer leaders hoped to cause an uprising in that Dutch-majority territory or at least to widen the theater of war beyond the Boer republics of Orange Free State and South African Republic. Smuts led a commando south into the Cape Colony, while Louis Botha attempted to cross into Natal. Earlier Boer raids into the Cape Colony proved unsuccessful. All had been eventually hounded out by British mounted columns and had suffered painful losses. Smuts believed he could do better.

The raid

During the trek south to the Orange River, Smuts’ commando lost 36 men. He finally crossed at Kiba Drift on 3 September. Major General Fitzroy Hart's British force had been guarding the ford, but General Herbert Kitchener mistakenly sent them away on another mission. The Basotho attacked the Boers on 4 September near Wittenberg Mission, killing three and wounding seven with spears and ancient guns before being driven off with serious losses. On 7 September, Smuts went on a scout near Mordenaar's Poort (Murderer's Gorge), near Dordrecht, when they were ambushed. All three of his companions were shot by the British and Smuts barely escaped.

The cold spring rains tormented both men and horses as British pursuing columns under the overall command of Major General Sir John French closed in on Smuts' raiders. On 13 September, the Boers were cornered atop Stormberg Mountain and escaped only when a friendly guide in the form of Hans Kleynhans appeared and led them down a precipitous route to safety. The night of 15 September nearly finished the raiders as freezing rain killed over 60 ponies and fourteen men went missing. In front of the Boers, every mountain pass was reportedly held by the British.

Battle

Refer to the Military History Journal article below.

Aftermath

Smuts and some 250 men of his commando were able to operate for many months in the Cape Colony, but could not win the war. By this time, the Dutch in the Cape Colony were mostly convinced that the Boer republics were losing the war. Though the commando received generous help from Dutch civilians, and indeed commandeered their requirements from people of every background, the British refrained from burning Dutch farms in the Cape Colony as a matter of policy.

While Boers captured in the republics were well-treated as prisoners of war, Boer fighters native to the Cape Colony and captured there were sometimes treated as rebellious subjects and executed by the British. After the battle, Smuts' commando was dressed largely in British khaki uniforms, and Lord Kitchener gave orders that all Boer fighters taken in British uniform were to be executed. Several members of the commando were shot on this basis, others for being treasonous subjects of the Cape Colony. When the remaining members found out about this order, they dressed themselves in civilian clothes as soon as they could.

MODDERFONTEIN
17 September 1901
by R W Smith, 2004

A businesswoman in Pietermaritzburg, Robin Smith describes herself as a “collector of battlefields”. He is a member of the South African Military History Society and the Crimean War Research Society. He has never served in any of the armed forces.

View of the farmhouse from a low ridge, a dolerite dyke where Field Cornet Jack Borrius’ section, with Denys Reitz, attacked the Lancer camp.
(Photo: R W Smith).

On the farm Modderfontein in the Eastern Cape, 22km from Tarkastad, are the graves of officers and men of ‘C’ Squadron, 17th Lancers, who died on 17 September 1901 while defending their camp against the commando of General Jan Christiaan Smuts. Three officers have separate headstones and they and thirty-five men of the regiment are buried in a mass grave. Three gunners of the Royal Garrison Artillery also died there and are named on the memorial. What is astounding is that the 17th Lancers lost more men killed in action on that day than on any other single day in its long history, including even the Charge of the Light Brigade at Balaklava in 1854! (The White Lancer and Vedette, 1986, p 112). Had the Boer commando not succeeded in overwhelming their opponents that day, the history of the Anglo-Boer War and, indeed, of the world, could have been very different. Smuts later became a world figure, a field marshal in the British Army and a member of the original committee of statesmen who proposed the formation of the United Nations.

The writer, having made a study of the terrain and of a number of accounts of the encounter, offers the following version of events to explain the disaster which befell the 17th Lancers on the farm, Modderfontein, on 17 September 1901.

Denys Reitz wrote a racy version of the Modderfontein clash in his book, Commando (1929), and Ben Bouwer, his commandant on the day, has more to say in his memoirs. On the other side, we have a short description from Lt-Col Douglas Haig, the Lancers’ commanding officer, to his sister, Henrietta, in a letter written a few days after the battle. There are also descriptions of the action in the official history (1910) and in The Times History of the War in South Africa (Vol V, 1907) and the officer casualties are illustrated in After Pretoria (1902). There are also other accounts, but none of these satisfied the writer that they give a proper explanation of what happened that day.

On 17 September 1901, the British knew that the Smuts Commando was likely to be at the end of their tether, having suffered severely since they crossed the Orange River into the Cape Colony at Khibia Drift on 3 September. They had been attacked by the Basotho near the Wittenberg Mission, losing one man killed and three captured before they had managed to continue southwards (Shearing, 2000, pp 32-4; Stretton, 2001, p 21). Then, on 11 September, Smuts himself had had a narrow escape at Moordenaar’s Poort, near Dordrecht, when he and two companions had been ambushed while scouting the way ahead. British columns had practically surrounded them on the Stormberg, but, guided by a friendly bywoner, the crippled Hans Kleyhans, they had managed a miraculous escape at Boshoff’s Kraal by slithering down the mountainside on a grassy slope, the only way down and a near-vertical incline (Reitz, 1929, p 219). Also, the

11 http://samilitaryhistory.org/vol131rs.html
recent weather had been diabolical, even for that area which almost annually experiences a particularly severe spell at this time of the year.

The commando had then crossed the branch railway line near Halseton and the main line from East London at Puffer's Kraal and headed along the Klaas Smits River, travelling south and west. Making for the farm Rhenosterhoek, they had come across the column commanded by Lt-Col G F Gorringe who was heading for the same farm. Smuts and his men spent the night 'adrift on the open veld', in Reitz's words, as neither side wanted a clash in the awful weather then prevailing (Reitz, 1929, p223).

On the next day, 15 September, the commando called in at Waterval, a large farm that housed several families. Smuts was most reluctant to stay the night there as he knew that Gorringe's column was not far behind, so they pushed on through the night, which was described by Reitz as the 'night of the big rain'. After a stop at a deserted farm, Groothaasfontein, they went north-west across the farm Hondeklip, crossed the nek to the south of Toorkop, and found food and forage on the farm De Hoek, which was owned by Fanie Venter. (The adjacent map shows the commando's route from Putter's Kraal to Modderfontein and Klein Mosterts Hoek).

The following day was 17 September, the day of the clash. As the commando passed the farm Rietfontein, they came to Ewan's Hope and it was here that Jan Coetzer, a 17-year-old youth, came running out of the farmhouse to tell them that the British cavalry had a camp in the next valley. Coetzer had seen a patrol of the 17th Lancers come close to the farmhouse earlier that morning. Seeing nothing, the Lancers had returned down the Buysrivierpoort and back to the camp at Modderfontein. The youth's warning to the commando appears to have been quite factual, although some accounts describe him as feeble-minded. Fanie Venter, who farms in the area, claims that this was not so: 'You are talking about one of my ancestors!'

The 17th Lancers' camp at Modderfontein was poorly located for a determined defence. According to Haig's letter to his sister, the regiment had arrived by train from Stormberg on Sunday, 15 September. Their orders had been to guard the passes into the valley - the Buysrivierpoort and the Elandsrivierpoort. Owing to the incessant rain of the previous week, the Elands River was running high and had become difficult to cross with transport. The farm of Hendrik van Heerden, set a little way back from the two passes, offered a sheltered campsite and a comfortable farmhouse for the officers' mess. Mr van Heerden and his wife were confined to the bedroom so as not to give away any information that might find its way to Smuts or any other enemy in the neighbourhood (Shearing, 2000, p 54).

On the day before, Monday, 16 September, Haig himself had come to Modderfontein from Tarkastad to inspect the site and had lunched with Capt Sandeman, the squadron commander, on the dolerite dyke which protrudes from the ground behind the farmhouse. In his letter, he describes Sandeman as a 'most capable officer' and clearly he must have told him to stay where he was (Childers, 1907, p 388).
Tuesday morning, 17 September, was foggy and, according to Haig's letter, Sandeman sent out two patrols to reconnoitre the passes. In all likelihood, each patrol would have been about a troop in strength, about thirty men, commanded by a lieutenant. One patrol went through the Buysrivierpoort and onto the open plain near Ewan's Hope, where they expected that they might meet up with Lt-Col Gorringe's men. In reality, Gorringe was not far away, having camped the previous night on the farm Hondekilp, aware that Smuts's men were not too far ahead of them. On the plain, the Lancers could see a considerable distance across the flat country to the next range of hills, the Toorberg, and to the north and south, but there were no Boers or British troops in sight. The second patrol drew a similar blank north of the Elandsrivierpoort and the Elands River could by then be crossed reasonably easily by mounted men. The two troops of Lancers returned to camp the way they had come, leaving pickets guarding the exits from the passes, as indicated on the map.

Map of the battle of Modderfontein (R W Smith).

On 16 September, Gorringe had captured a number of Boers on Hondekilp - Ben Bouwer's account states that they had been sent out from De Hoek as foragers (Bouwer, Memoirs) and Shearing(2000, p52) gives some of the names of those captured or wounded in the clash. Gorringe then moved towards Tarkastad, not far away, to get supplies and to confer with Haig.

On the Boer side, Smuts had ordered Denys Reitz and his section to scout the way ahead and it was this group who encountered the young Jan Coetzer (Reitz, 1929, p 225). Reitz does not mention Coetzier by name, but his descendants are certain that it was he who rushed out to the approaching Boers and excitedly warned them that an English patrol had only returned down the Buysrivierpoort a few minutes before. Bouwer claims to have been with the Boer patrol.

Reitz sent Edgar Duncker back to report and he returned with General Smuts and Commandant van Deventer. Evidently, Smuts had planned to pass through Lelik Poortjie to get over the next range at Klein Mosterts Hoek, but he now decided to attack the Lancers' camp immediately as his men were in desperate need of fresh horses, ammunition and food.

Commandant Ben Bouwer led a party of scouts through the Buysrivierpoort. Commandant Jaap van Deventer took another group, who followed a little way behind. Smuts stayed back to organise the rest of the commando, including several men who had no horses. By then, it was late morning. The Boers passed through the poort and were spotted by one of the Lancers' pickets and a trooper galloped back to the camp and informed Capt Sandeman that a party of Boers was advancing towards the camp.
According to Haig's letter, the message reached the camp at about noon, while the official history (Grant, 1910) states 12.30. Sandeman immediately sent out a troop under 2/Lieut Russel to investigate.

Ewan's Hope, the farm where 17-year old Jan Coetzer warned the Boer advance of the presence of the 17th Lancers' camp in the next valley. (Photo: R W Smith).

There is mention of a spy in an account in Afrikaans by J P Bosman, who claims to have seen him in the morning before they left the farm De Hoek. The Reverend John Catling also describes how an English farmer came into the Lancers' camp to warn them of the approaching Boer commando. Captain Sandeman arrested him, according to Catling, as a spy. He may have been the 'spy' seen at De Hoek.

Russel's troop came across Ben Bouwer's group at a stream and a patch of thorn bush. The Boers levelled their rifles at the Lancers and Russel, believing them to be from Gorringe's column, shouted to them: 'Don't fire. We are the 17th Lancers.' (See H W Wilson's After Pretoria, Vol II, 1902, p 745). The Boers opened fire at once and the Lancers suffered several casualties. Realising that they were Boers, Russel sent some of his men back to camp along the road while he circled around to the west with the rest of the troop. The men that he had sent back to camp were delayed by a gate and suffered several more casualties (Reitz, 1929, p 226).

Reitz was one of those who had opened fire at the stream. He had dismounted and, as he had no more cartridges for his Mauser, he dropped it there, picked up a Lee-Metford and a bandolier from one of the Lancer dead, rushed for his mare, and joined in the chase after the Lancers' patrol. At the gate in the fence, Ben Bouwer and Jaap van Deventer conferred and then Bouwer and his men, who included Reitz, followed the retiring members of the patrol (Reitz, 1929, p 226).

Bouwer, Reitz, Veldkornet Jack Borrius and about a dozen others made their way up the eastern side of the valley, which is flat and open. Borrius took his men into the rocks and bushes of the dyke. Hidden in the rocks were the two guns - a mountain gun (popular in India, a muzzle-loader that could be quickly dismounted and carried by four or six mules) and a Maxim machine gun. Reitz and his friends dismounted and abandoned their horses. (Boer horses were trained to stand still and did not need minders). They found themselves very near the British gunners and quickly opened fire on the guns which were in an exposed position although protected by a ring of rocks. Lieutenant Hay-Coglan was shot by Reitz, two of the other gunners were killed and another, who managed to escape into the camp, was wounded. They were also very close to the tents of the camp and were in a tight position. (This account differs in a number of important respects from the description given in Shearing [2000, p 55]. The account in Stretton [2001, pp 49-53] seems more plausible).

Commandant Ben Bouwer then arrived just behind Borrius' section, dismounted and ran into the yard of the farmhouse on its south side. The guard at the door opened fire and hit young Lawrence Tyner in the head. Meanwhile, Bouwer's men had spread out in a line to the south of the farmhouse and opened fire on the Lancers' right flank. Van Deventer had circled around even further to the south and approached the farm from that direction. Bouwer's men were already engaging the Lancers, who, it appears, mistook the oncoming Boers for their colleagues of 'A' Squadron, who were camped at Hoogstede to the south of Modderfontein. By then, Smuts and Kirsten had taken up a position on a small rise about 800 yards (730m) to the west and, from this point, swept the flat field with rifle fire. The Lancers were assailed from all sides, without adequate cover, and suffered accordingly.

When a patrol from 'A' Squadron of the Lancers was spotted in the distance, the Boers on the side of the dyke realised that they would have to finish things quickly before Lancer reinforcements arrived. Reitz and his fellow Boers probably saw van Deventer's men approaching and made the same mistake as the
Lancers! Borrius gave the orders and Reitz and his section charged into the remaining Lancers, of whom there were only about fifteen left. Further resistance was hopeless, one or two threw down their arms, but several escaped into the tents. Reitz shot an officer who tried to escape on a horse, possibly Lieut Russel or Morritt? (Reitz, 1929, p 229).

With the guns out of action, the rest of the Lancers were quickly overwhelmed. Capt Sandeman rallied some of the men who occupied one of the stone kraals, but they were too few in number to defend the whole perimeter and they too were attacked from all sides, having no alternative but to give in. A number of Lancers were forced to retreat to the south through the narrow defile at Thorn Grove. Bouwer states that the action took 'less than twenty minutes', but in view of the serious opposition that the Boers encountered from the Lancers, it does seem unlikely that matters were decided quite so quickly. Both J P Bosman and Micholls describe what appears to be a small number of Lancers caught in the open on the right and forced to retreat through a defile, possibly near Thorn Grove Farm, 'after shooting their horses, ... having expended all their ammunition' (Micholls).

Don't fire! We are the 17th Lancers'
(Sketch by I Sheldon Williams, After Pretoria, Vol II, p 744).

The Boers spent not more than a few minutes looting the camp. They replenished their ammunition supplies, took as much food as they could carry and used British uniforms to replace the rags and grain bags they had been wearing. It was then that Reitz encountered Lord Vivian and their conversation is related in Thomas Pakenham's introduction to later editions of Commando - although the account as related in the introduction to the 1983 edition of this book has been discredited as Lord Vivian died in 1940! The Mauser rifle that Reitz had discarded before the battle was later returned to him in England when he served there as South African ambassador). After the encounter with Lord Vivian, Reitz kitted himself out with the British officer's equipment - a Lancer's uniform, complete with badges and insignia, Lee-Metford rifle and full bandoliers, as well as a superb grey Arab, formerly the property of Lieutenant Sheridan (Reitz, 1929, p 231). Ben Bouwer, however, acquired Vivian's fine pair of binoculars!
Lieut P H Hay-Coghlan, who died of wounds two days after the battle (After Pretoria, Vol II).

Lieut R B Morritt may have been the officer shot while trying to escape (After Pretoria II).

Like giants refreshed, in Reitz's words, and with their confidence in their leader, General Jan Smuts, restored, the Boers burned whatever they were unable to carry away with them. The foul weather they had experienced since crossing the Orange and the determined and relentless pursuit of the British columns, had caused their faith in Smuts to waver, and some had deserted in attempts to return to the Free State and the Transvaal. In one example, related by Bouwer, Commandant Piet Wessels had returned to the Free State with about 100 of his men on 8 September. After Modderfontein, however, there was no more talk of this.

There were about three hundred animals, horses and mules, in the Lancers' camp, some of which would have been killed and wounded in the fight. There would almost certainly have been enough surviving animals, however, to remount the commando. Apart from the Arab mentioned above, Reitz also managed to acquire a mule. When they had left De Hoek, the commando had had a string of dismounted men, as well as several wounded. No wounded were left behind at Modderfontein, although there were six more casualties.

An eye witness account, given in Parry, quotes Commandant [sic] Smuts as having said that they 'had paid dearly for it'. The wounded were taken to Cradock, where there was a Red Cross hospital.

The Lancers' mountain gun had been disabled by a few blows from van Deventer (formerly a gunner in the Transvaal Staatsartillerie), who then rode off to the north through the Elandsrivierpoort and over Klein Mosterts Hoek pass towards Maraisburg (now Hofmeyr). Two Maxim guns had also been captured, but, according to Bouwer, these were too much of a nuisance and were dumped in the first dam they came across.

The patrol from 'A' Squadron was not sufficiently strong to do more than exchange a few shots with the fleeing Boers. They did what they could to rescue the few unwounded Lancers and sent messages back to
their camp at Hoogstede. From there, a messenger galloped to Tarkastad, where Haig had two further Lancer squadrons, the news reaching him at 16.30. Haig then galloped the 22km to Modderfontein in an hour and a quarter, probably arriving there at 17.45, certainly too late to take part in the pursuit of the commando. The wounded were taken into Tarkastad. (It is claimed that two of them are buried in the town cemetery, but the writer was unable to confirm this).

Lieut R B Sheridan, shot through the brain by Jack Borrius (After Pretoria II).

It is undeniable that, on 17 September 1901, a squadron of one of the British Army's crack cavalry regiments was overwhelmed by the Boers at Modderfontein in the Eastern Cape. All previous accounts give the impression that a mob of Boer irregulars descended on the camp, which was taken completely by surprise. The writer does not support this view, believing instead that the attack was conducted in a thoroughly professional manner by experienced Boer soldiers. No white flag was hoisted and in a speech given in England some years later as a guest of Douglas Haig, General Smuts himself paid the following tribute to the fighting spirit of the Lancers: 'How gallantly those boys fought against us, many being killed because they knew not how to surrender.' Several had thrown down their rifles when confronted by Boers at point-blank range and at least one had given in when he bumped into Reitz at the corner of the kraal (Reitz, 1929, p 230).

The Lancer camp was located in a less than ideal place for defence purposes. They had encamped there on arrival in the area in pouring rain, after finding that they were unable to cross the Elands River with their transport. The farm's field and the shelter in the lee of the dolerite dyke, to say nothing of the comfortable farmhouse, provided a solution to this problem. Also, they were positioned close to the river which solved the problem of acquiring water for men and beasts. Unfortunately, however, the camp site was dominated on all sides by higher ground, and the Boers, with their eye for such things, took full advantage. Another factor contributing to the disaster was that 'C' Squadron, 17th Lancers, also consisted largely of new recruits who had little experience of combat. In spite of this, they fought well, fitting the tradition of the regiment and badge, the Death's Head and motto 'Or Glory'. That they suffered more casualties on 17 September 1901 than on any other day in their history is testimony enough to their heroic defence.
The Lancer graves on Modderfontein Farm, with wreaths laid in 2001 on the occasion of the commemoration of the centenary of the battle. (Photo R W Smith).

**Douglas Haig's account**
*(from a letter to his sister, Henrietta, 22 September 1901)*

'You will have heard ere this of the terrible losses C Squadron 17th Lancers sustained on Tuesday last. I trained the regiment from Stormberg to Tarkastad to head Smuts' commando which had broken SW from near Dordrecht, The Squadron in question under a most capable officer (Sandeman) was holding a position about 14 miles [22.5km] from Tarkastad to prevent the enemy coming south. I was out with the squadron on the previous day (Monday) when it marched from Tarkastad. The weather for several days had been terribly wet. However it cleared for an hour about 3 o'clock and Sandeman lunched with me (off some of those nice tin things you sent me from Cabbett) on the fatal koppie on which next day so many poor fellows were killed. I got back to Tarkastad at 9pm. Next morning was very foggy. However his patrols reconnoitred the two passes at the exits of which Sandeman had his camp. All was reported clear, but about noon a message was sent to Sandeman that the Boers were advancing to attack his camp. A troop moved out at once. The officer in charge of it saw some men in khakee [sic] whom he took to be some of Gorrige's column which was expected north of the post. These men levelled their rifles at him when about 200 yards [180m] distant. He shouted to them 'Don't fire. We are the 17th Lancers.' (These irregular corps often fire at one another by mistake.) The Boers, as such they proved to be, opened fire at once and emptied several saddles. Before the troop got back to camp the enemy had worked up a donga to the rear of the camp. Again their khakee [sic] dress assisted them. They were now between Sandeman's squadrons and another squadron which was about three miles [4.8km] distant. Seeing khakee [sic] dressed men in rear of camp, they were allowed to approach quite close before fire was opened on them. Our men held the position to the last, and not a man surrendered. Out of 130 men, 29 were killed and 41 wounded. The other men were still fighting when the next squadron came to their support and the enemy made off. All the offices were either killed or wounded. Such nice fellows too.'

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APPENDIX C  METHODOLOGY

Site survey
Ethembeni staff members inspected the proposed activity area on 16, 17 and 18 January 2013 and completed a controlled-exclusive surface survey, where ‘sufficient information exists on an area to make solid and defensible assumptions and judgements about where [heritage resource] sites may and may not be’ and ‘an inspection of the surface of the ground, wherever this surface is visible, is made, with no substantial attempt to clear brush, turf, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures that are observed by accident’ (King 1978; see bibliography for other references informing methodological approach).

The site survey comprised walks and drives along the entire proposed development area. Photographs were taken with a Nikon Coolpix camera and a representative selection is included in this report. Geographic coordinates were obtained using a handheld Garmin global positioning unit (WGS 84).

Database and literature review
No archaeological site data was available for the project area. A search of SAHRIS, the online database of SAHRA, revealed no HIA reports for the study area. A concise account of the archaeology and history of the broader study area was compiled from sources including those listed in the bibliography.

Assessment of heritage resource value and significance
Heritage resources are significant only to the extent that they have public value, as demonstrated by the following guidelines for determining site significance developed by Heritage Western Cape in 2007 and utilised during this assessment.

Grade I Sites (National Heritage Sites)
Regulation 43 Government Gazette no 6820. 8 No. 24893 30 May 2003, Notice No. 694 states that: Grade I heritage resources are heritage resources with qualities so exceptional that they are of special national significance should be applied to any heritage resource which is
a) Of outstanding significance in terms of one or more of the criteria set out in section 3(3) of the NHRA;
b) Authentic in terms of design, materials, workmanship or setting; and is of such universal value and symbolic importance that it can promote human understanding and contribute to nation building, and its loss would significantly diminish the national heritage.

1. Is the site of outstanding national significance?
2. Is the site the best possible representative of a national issue, event or group or person of national historical importance?
3. Does it fall within the proposed themes that are to be represented by National Heritage Sites?
4. Does the site contribute to nation building and reconciliation?
5. Does the site illustrate an issue or theme, or the side of an issue already represented by an existing National Heritage Site – or would the issue be better represented by another site?
6. Is the site authentic and intact?
7. Should the declaration be part of a serial declaration?
8. Is it appropriate that this site be managed at a national level?
9. What are the implications of not managing the site at national level?
Phase 1 HIA of Rehabilitation of Regional Road R61, Section 3 between Cradock and Tarkastad, Eastern Cape, South Africa

Grade II Sites (Provincial Heritage Sites)

Regulation 43 Government Gazette no 6820. 8 No. 24893 30 May 2003, Notice No. 694 states that:
Grade II heritage resources are those with special qualities which make them significant in the context of a province or region and should be applied to any heritage resource which:

a) is of great significance in terms of one or more of the criteria set out in section 3(3) of the NHRA; and
b) enriches the understanding of cultural, historical, social and scientific development in the province or region in which it is situated, but that does not fulfil the criteria for Grade 1 status.

Grade II sites may include, but are not limited to –

(a) places, buildings, structures and immovable equipment of cultural significance;
(b) places to which oral traditions are attached or which are associated with living heritage;
(c) historical settlements and townscapes;
(d) landscapes and natural features of cultural significance;
(e) geological sites of scientific or cultural importance;
(f) archaeological and palaeontological sites; and
(g) graves and burial grounds.

The cultural significance or other special value that Grade II sites may have, could include, but are not limited to –

(a) its importance in the community or pattern of the history of the province;
(b) the uncommon, rare or endangered aspects that it possess reflecting the province’s natural or cultural heritage;
(c) the potential that the site may yield information that will contribute to an understanding of the province’s natural or cultural heritage;
(d) its importance in demonstrating the principal characteristics of a particular class of the province’s natural or cultural places or objects;
(e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group in the province;
(f) its importance in demonstrating a high degree of creative or technical achievement at a particular period in the development or history of the province;
(g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
(h) its strong or special association with the life or work of a person, group or organization of importance in the history of the province.

Grade III (Local Heritage Resources)

Regulation 43 Government Gazette no 6820. 8 No. 24893 30 May 2003, Notice No. 694 states that:
Grade III heritage status should be applied to any heritage resource which:

(a) fulfils one or more of the criteria set out in section 3(3) of the NHRA; or
(b) in the case of a site contributes to the environmental quality or cultural significance of a larger area which fulfils one of the above criteria, but that does not fulfill the criteria for Grade 2 status.

Grade IIIA

This grading is applied to buildings and sites that have sufficient intrinsic significance to be regarded as local heritage resources; and are significant enough to warrant any alteration being regulated. The significances of these buildings and/or sites should include at least some of the following characteristics:

- Highly significant association with a
  - historic person
  - social grouping
  - historic events
  - historical activities or roles
  - public memory
- Historical and/or visual-spatial landmark within a place
- High architectural quality, well-constructed and of fine materials
- Historical fabric is mostly intact (this fabric may be layered historically and/or past damage should be easily reversible)
- Fabric dates to the early origins of a place
- Fabric clearly illustrates an historical period in the evolution of a place
- Fabric clearly illustrates the key uses and roles of a place over time
- Contributes significantly to the environmental quality of a Grade I or Grade II heritage resource or a conservation/heritage area

Such buildings and sites may be representative, being excellent examples of their kind, or may be rare: as such they should receive maximum protection at local level.

Grade IIIB

This grading is applied to buildings and/or sites of a marginally lesser significance than grade IIIA; and such marginally lesser significance argues against the regulation of internal alterations. Such buildings and sites may have similar significances to those of a grade IIIA building or site, but to a lesser degree. Like grade IIIA buildings and sites, such buildings and sites may be representative, being excellent examples of their kind, or may be rare, but less so than grade IIIA examples: as such they should receive less stringent protection than grade IIIA buildings and sites at local level and internal alterations should not be regulated (in this context).

Grade IIIC

This grading is applied to buildings and/or sites whose significance is, in large part, a significance that contributes to the character or significance of the environs. These buildings and sites should, as a consequence, only be protected and regulated if the significance of the environs is sufficient to warrant protective measures. In other words, these buildings and/or sites will only be protected if they are within declared conservation or heritage areas.

Assessment of development impacts

A heritage resource impact may be defined broadly as the net change, either beneficial or adverse, between the integrity of a heritage site with and without the proposed development. Beneficial impacts occur wherever a proposed development actively protects, preserves or enhances a heritage resource, by minimising natural site erosion or facilitating non-destructive public use, for example. More commonly, development impacts are of an adverse nature and can include:
- destruction or alteration of all or part of a heritage site;
- isolation of a site from its natural setting; and / or
- introduction of physical, chemical or visual elements that are out of character with the heritage resource and its setting.
Beneficial and adverse impacts can be direct or indirect, as well as cumulative, as implied by the aforementioned examples. Although indirect impacts may be more difficult to foresee, assess and quantify, they must form part of the assessment process. The following assessment criteria have been used to assess the impacts of the proposed development on identified heritage resources:

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<thead>
<tr>
<th>Criteria</th>
<th>Rating Scales</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Nature</td>
<td>Positive</td>
<td>An evaluation of the type of effect the construction, operation and management of the proposed development would have on the heritage resource.</td>
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<td></td>
<td>Negative</td>
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<td>Extent</td>
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<td>Site-specific, affects only the development footprint.</td>
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<td>Medium</td>
<td>Local (limited to the site and its immediate surroundings, including the surrounding towns and settlements within a 10 km radius):</td>
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<td>High</td>
<td>Regional (beyond a 10 km radius) to national.</td>
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<td>Duration</td>
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<td>0-4 years (i.e. duration of construction phase).</td>
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<td>Medium</td>
<td>5-10 years.</td>
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<td></td>
<td>High</td>
<td>More than 10 years to permanent.</td>
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<tr>
<td>Intensity</td>
<td>Low</td>
<td>Where the impact affects the heritage resource in such a way that its significance and value are minimally affected.</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>Where the heritage resource is altered and its significance and value are measurably reduced.</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Where the heritage resource is altered or destroyed to the extent that its significance and value cease to exist.</td>
</tr>
<tr>
<td>Potential for impact on irreplaceable resources</td>
<td>Low</td>
<td>No irreplaceable resources will be impacted.</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>Resources that will be impacted can be replaced, with effort.</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>There is no potential for replacing a particular vulnerable resource that will be impacted.</td>
</tr>
<tr>
<td>Consequence (a combination of extent, duration, intensity and the potential for impact on irreplaceable resources)</td>
<td>Low</td>
<td>A combination of any of the following: - Intensity, duration, extent and impact on irreplaceable resources are all rated low. - Intensity is low and up to two of the other criteria are rated medium. - Intensity is medium and all three other criteria are rated low.</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>Intensity is medium and at least two of the other criteria are rated medium.</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Intensity and impact on irreplaceable resources are rated high, with any combination of extent and duration. Intensity is rated high, with all of the other criteria being rated medium or higher.</td>
</tr>
<tr>
<td>Probability (the likelihood of the impact occurring)</td>
<td>Low</td>
<td>It is highly unlikely or less than 50 % likely that an impact will occur.</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>It is between 50 and 70 % certain that the impact will occur.</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>It is more than 75 % certain that the impact will occur or it is definite that the impact will occur.</td>
</tr>
<tr>
<td>Significance (all impacts including potential cumulative impacts)</td>
<td>Low</td>
<td>Low consequence and low probability. Low consequence and medium probability. Low consequence and high probability.</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>Medium consequence and low probability. Medium consequence and medium probability. Medium consequence and high probability. High consequence and low probability.</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>High consequence and medium probability. High consequence and high probability.</td>
</tr>
</tbody>
</table>

**Assumptions and limitations of this HIA**

- The description of the proposed project, provided by the client, is assumed to be accurate.
- The public consultation process undertaken as part of the Environmental Impact Assessment is sufficient and adequate and does not require repetition as part of the HIA.
- Soil surface visibility was good. Heritage resources might be present below the surface and we remind the client that the NHRA requires that a developer cease all work immediately and observe the protocol in Section 9 should any heritage resources, as defined in the Act, be discovered during the course of development activities.
- No subsurface investigation (including excavations or sampling) were undertaken, since a permit from SAHRA is required to disturb a heritage resource.
- A key concept in the management of heritage resources is that of non-renewability: damage to or destruction of most resources, including that caused by bona fide research endeavours, cannot be
reversed or undone. Accordingly, management recommendations for heritage resources in the context of development are as conservative as possible.

- Human sciences are necessarily both subjective and objective in nature. eThembeni staff members strive to manage heritage resources to the highest standards in accordance with national and international best practice, but recognise that their opinions might differ from those of other heritage practitioners.

- Staff members involved in this project have no vested interest in it; are qualified to undertake the tasks as described in the terms of reference (refer to Appendix D); and comply at all times with the Codes of Ethics and Conduct of the Association of Southern African Professional Archaeologists.

- eThembeni staff members take no personal or professional responsibility for the misuse of the information contained in this report, although they will take all reasonable precautions against such misuse.
**APPENDIX D**

**SPECIALIST COMPETENCY AND DECLARATION OF INDEPENDENCE**

**Specialist competency**

Len van Schalkwyk is accredited by the Cultural Resources Management section of the Association of Southern African Professional Archaeologists (ASAPA) to undertake HIAs in South Africa. He is also a member of the ASAPA Cultural Resources Management Committee for 2011 and 2012. Mr van Schalkwyk has a master’s degree in archaeology (specialising in the history of early farmers in southern Africa) from the University of Cape Town and 25 years’ experience in heritage management. He has worked on projects as diverse as the establishment of the Ondini Cultural Museum in Ulundi, the cultural management of Chobe National Park in Botswana and various archaeological excavations and oral history recording projects. He was part of the writing team that produced the KwaZulu-Natal Heritage Act 1997. He has worked with many rural communities to establish integrated heritage and land use plans and speaks good Zulu.

Mr van Schalkwyk left his position as assistant director of Amafa aKwaZulu-Natali, the provincial heritage management authority, to start eThembeni in partnership with Elizabeth Wahl, who was head of archaeology at Amafa at the time. Over the past decade they have undertaken almost 1000 heritage impact assessments throughout South Africa, as well as in Mozambique.

Elizabeth Wahl has a BA Honours in African Studies from the University of Cape Town and has completed various Masters courses in Heritage and Tourism at the University of KwaZulu-Natal. She is currently studying for an MPhil in the Conservation of the Built Environment at UCT. She is also a member of ASAPA.

Ms Wahl was an excavator and logistical coordinator for Glasgow University Archaeological Research Division’s heritage programme at Isandlwana Battlefield; has undertaken numerous rock painting surveys in the uKhahlamba/Drakensberg Mountains, northern KwaZulu-Natal, the Cederberg and the Koue Bokkeveld in the Cape Province; and was the principal excavator of Scorpion Shelter in the Cape Province, and Lenjane and Crystal Shelters in KwaZulu-Natal. Ms Wahl compiled the first cultural landscape management plan for the Mnweni Valley, northern uKhahlamba/Drakensberg, and undertook an assessment of and made recommendations for cultural heritage databases and organisational capacity in parts of Lesotho and South Africa for the Global Environment Facility of the World Bank for the Maloti Drakensberg Transfrontier Conservation and Development Area. She developed the first cultural heritage management plan for the uKhahlamba Drakensberg Park World Heritage Site, following UNESCO recommendations for rock art management in southern Africa.

**Declaration of independence**

We declare that Len van Schalkwyk, Elizabeth Wahl and eThembeni Cultural Heritage have no financial or personal interest in the proposed development, nor its developers or any of its subsidiaries, apart from in the provision of heritage impact assessment and management consulting services.