

Phase 1 Archaeological and Heritage Impact Assessment on the farm
Malelane 389 JU and alongside 10km of the N4 National Road in respect of
the proposed widening of section 8X as well as certain access roads,
Malelane, Mpumalanga Province.

Compiled for:



For Enpact Environmental Consultants

Surveyor: Mr JP Celliers

13 October, 2020

I, Jean-Pierre Celliers as authorized representative of Kudzala Antiquity CC hereby confirm my independence as a specialist and declare that neither I or the Kudzala Antiquity CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which I was appointed as Heritage Consultant, other than fair remuneration for work performed on this project.

SIGNATURE: _____

A handwritten signature in black ink, appearing to read 'JP Celliers', written over a horizontal line.

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Executive summary

Site name and location: Nkomazi Local Municipality and Ehlanzeni District Municipality. TRAC N4 from an access road and N4 junction 10km west of Malalane to the TSB junction east of Malalane. This consists of access roads on N4 section 8X (MDC Section 13) from KM 15.00 to KM 25.20. Some of the newly proposed access roads are located on the farm Malelane 389 JU.

Purpose of the study: An archaeological and heritage study in order to identify cultural heritage resources in respect of the proposed widening of certain sections of the N4 and access roads. As well as access road junctions located north and south of the N4 National road and some roads located on the farm Malalane 389 JU.

Topographical Maps: 1:250 000 2530 (1942, 1974). 1:50 000 2531 BC (1970, 1984); 2531 CB (1968, 1984, 2003) and 2431 DA (1984).

EIA Consultant: Enpact Environmental Consultants

Client: TRAC N4

Heritage Consultant: Kudzala Antiquity CC.

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Report date: 13 October 2020

Description and findings:

An Archaeological and Heritage Impact Assessment was undertaken by Kudzala Antiquity CC in respect of the expansion of the existing N4 National road and upgrading of certain access roads within a 10 km section of the road (section 8X (MDC Section 13) from KM 15.00 to KM 25.20) west and east of the town Malalane, located in Nkomazi Local Municipality, Mpumalanga Province. The study was done with the aim of identifying sites which are of heritage significance on the identified project areas and assess their current preservation condition, significance and possible impact of the proposed action. This forms part of legislative requirements as appears in section 38 of the National Heritage Resources Act (Act No. 25 of 1999). This report can be submitted in support of the National Environmental Management Act (Act 25 of 1998).

The survey was conducted on foot and with the aid of a motor vehicle in an effort to locate archaeological remains and historic sites, structures and features. Archival information including scrutiny of previous heritage surveys of the area formed the baseline information against which the survey was conducted. Sites of social and heritage significance totalling ten in number were documented. This includes a roadside marker for a deceased motorist (site MAL 1), remains of demolished dwellings (site MAL 6) a

water furrow for irrigation (sites MAL 2, 3, 5, 9 and 10) two formal graveyards (sites MAL 4 and 7) and a single identified burial area (MAL 8).

A total of forty three survey orientation locations were documented, sites SO 1-43 which includes a GPS location and photographs of the landscape at that particular location. These were recorded alongside the identified routes sections for the project (see Appendix C maps and Appendix D photos).

In terms of section 34 of the National Heritage Resources Act (NHRA, 25 of 1999), an historic water furrow was located but it is not older than 60 years (currently 53 years old). It is approaching 60 years and will then be within the ambit of the Act.

In terms of section 35 of the NHRA, no archaeological remains were located.

In terms of section 36 of the NHRA, three grave sites were located.

It is not within the expertise of this report or the surveyor to comment on possible palaeontological remains which may be located in the study area.

Disclaimer: *Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. Kudzala Antiquity CC will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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- The results of the project;
- The technology described in any report; and
- Recommendations delivered to the client.

1. Introduction

1.1. Terms of reference

Kudzala Antiquity CC was commissioned to conduct an archaeological and heritage resources assessment in respect of the expansion of the N4 national road and access roads and routes located on farms adjacent to the N4. The largest affected farm is Malalane 389 JU on which the town of Malalane is located. The survey was conducted for Enpact Environmental Consultants.

1.1.1 Project overview

The client is in the process of obtaining environmental authorization to widen sections of the existing N4 national road and certain access roads which join it from the adjacent farms.

1.1.2. Constraints and limitations

The heritage and archaeological survey consisted of non-intrusive methods which exclusively rely on surface observations. Most of the project footprint areas were relatively easy of access but certain areas were difficult to access due to dense vegetation (and in some instances sugar cane) growth which resulted in archaeological visibility being low.

1.2. Legislative Framework

The National Heritage Resources Act (NHRA) (Act No. 25, 1999) require that individuals or institutions have specialist heritage impact assessment studies undertaken whenever development activities are planned and such activities trigger activities listed in the legislation. This report is the result of an archaeological and heritage study in accordance with the requirements as set out in Section 38 (3) of the NHRA in an effort to ensure that heritage features or sites that qualify as part of the national estate are properly managed and not damaged or destroyed.

The study aims to address the following objectives:

- Analysis of heritage issues;
- Assess the cultural significance of identified places including archaeological sites and features, buildings and structures, graves and burial grounds within a specific historic context;
- Identifying the need for more research;

- Surveying and mapping of identified places including archaeological sites and features, buildings and structures, graves and burial grounds;
- A preliminary assessment of the feasibility of the proposed development or construction from a heritage perspective;
- Identifying the need for alternatives when necessary; and
- Recommending mitigation measures to address any negative impacts on archaeological and heritage resources.

Heritage resources considered to be part of the national estate include those that are of archaeological, cultural or historical significance or have other special value to the present community or future generations.

The national estate may include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and paleontological sites;
- graves and burial grounds including:
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the *Gazette*;
 - (v) historical graves and cemeteries; and other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to slavery in South Africa;
- movable objects including:
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
 - (ii) objects to which oral traditions are attached or which are associated with living heritage
 - (iii) ethnographic art and objects;
 - (iv) military objects
 - (v) objects of decorative or fine art;
 - (vi) objects of scientific or technological interest; and

- (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Cultural resources are unique and non-renewable physical phenomena (of natural occurrence or made by humans) that can be associated with human (cultural) activities (Van Vollenhoven 1995:3). These would be any man-made structure, tool, object of art or waste that was left behind on or beneath the soil surface by historic or pre-historic communities. These remains, when studied in their original context by archaeologists, are interpreted in an attempt to understand, identify and reconstruct the activities and lifestyles of past communities. When these items are removed from their original context, any meaningful information they possess is lost, therefore it is important to locate and identify such remains before construction or development activities commence.

1.3. Approach and statutory requirements

The SAHRA Minimum standards of 2007 guideline document, forms the background against which the survey was planned and the report compiled. An Archaeological Impact Assessment (AIA) consists of three phases. This document deals with the first phase. This (phase 1) investigation is aimed at getting an overview of cultural resources in the project area, assigning significance to these resources, assessing the possible impact that the proposed activity may have on these resources, making recommendations pertaining to the management of heritage resources and putting forward mitigation measures where applicable.

When the archaeologist or heritage specialist encounters a situation where the planned project will lead to the destruction or alteration of an archaeological/ heritage site or feature, a second phase investigation is normally recommended. During a phase two investigation mitigation measures are put in place and detailed investigation into the nature of the cultural material is undertaken. Often at this stage, archaeological excavation and detailed mapping of a site is carried out in order to document and preserve the cultural heritage.

Phase three consists of the compiling of a management plan for the safeguarding, conservation, interpretation and utilization of cultural resources (Van Vollenhoven, 2002).

Continuous communication between the developer and heritage specialist after the initial assessment has been carried out may result in the modification of a planned route or development to incorporate or protect existing archaeological and heritage sites.

2. Description of surveyed area

The study area falls within the Nkomazi Local Municipality, Mpumalanga Province.

The survey was carried out on a project footprint consisting of 10km alongside the N4 National road west of the town Malalane up to the TSB junction east of the town and a number of access roads and junctions on the farm Malelane 389 JU as well as other farms adjacent to the N4.

Landscape: Natural and wetland vegetation previously Granite Lowveld vegetation and soils.

Visibility: Good-Poor in certain areas due to dense vegetation cover.

Veld type: The vegetation is classed as Granite Lowveld comprising tall shrubland with few trees to moderately dense woodland on the deep sandy uplands with *Terminalia sericea*, *Combretum zeyheri* and *C. Tricholaena Eragrostis rigidior*. Dense thicket to open savanna in the bottomlands. The dense herbacious layer contains the dominant *Digitaria eriantha*, *Panicum maximum* and *Astrida congesta* on fine-textured soils. The brackish bottomlands support *Sporobolus nitens*, *Urochloa mosambicensis* and *Chloris virgata* (Mucina and Rutherford, 2009).

Geology and soils: Swazian Goudplaats Gneiss, Makhutswi Gneiss and Nelspruit Suite occur from north to south. Further south, the younger Mpuluzi Granite, form the major base geology of the area. Archaean gneiss and granite weather into sandy soils in the uplands and clayey soils with high sodium content in the lowlands.

Limiting factors: In certain parts of the project areas especially where current sugarcane fields are, access was not possible.

3. Methodology

This study consists of a detailed archival study in order to understand the study area in a historical timeframe, an archaeological background study which include scrutiny of previous archaeological reports of the area, obtained through the SAHRIS database, and published as well as unpublished written sources on the archaeology of the area, social consultation with people who live nearby and a lastly a physical survey of the affected and immediate area.

The South African Heritage Resources Agency (SAHRA) and the relevant legislation (NHRA) require that the following components be included in an archaeological impact assessment:

- Archaeology;
- Shipwrecks;
- Battlefields;

- Graves;
- Structures older than 60 years;
- Living heritage;
- Historical settlements;
- Landscapes;
- Geological sites; and
- Paleontological sites and objects.

All the above-mentioned heritage components are addressed in this report, except shipwrecks, geological sites and paleontological sites and objects.

The ***purpose*** of the archaeological, archival and heritage study is to establish the whereabouts and nature of cultural heritage sites should they occur on project area. This includes settlements, structures and artefacts which have value for an individual or group of people in terms of historical, archaeological, architectural and human (cultural) development.

The ***aim*** of this study is to locate and identify such objects or places in order to assess and rate their significance and establish if further investigation is needed. Mitigation measures can then be suggested and put in place when necessary.

3.1. Archaeological and Archival background studies

The purpose of the desktop study is to compile as much information as possible on the heritage resources of the area. This helps to provide an historical context for located sites. Sources used for this study include published and unpublished documents, archival material and maps. Information obtained from the following institutions or individuals were consulted:

- Published and unpublished archaeological reports and articles;
- Published and unpublished historical reports and articles;
- Archival documents from the National Archives in Pretoria;
- Historical maps; and
- South African Heritage Resource Information System (SAHRIS) database.

3.1.1. Previous archaeological studies in the area

An archaeological impact study focusing on a section of the Mozambique-Secunda gas pipeline in the Barberton District, conducted by Mr J.A. van Schalkwyk in 2002, resulted in the recording of a single rock art site on Salisbury Kop and a few surface finds of pottery on the farm Thankerton 175 JU.

The same author compiled a heritage survey report in 2007 in respect of a housing development on the farm Stentor Reservaat 656 JU located south-west of Malalane. Finds included a historic structure, possibly an old house and a grave.

3.1.2. Historic maps

Historical maps were scrutinized and features that were regarded as important in terms of heritage value were identified and if they were located within the boundaries of the project area they were physically visited in an effort to determine:

- (i) whether they still exist;
- (ii) their current condition; and
- (iii) Significance.

3.1.3. Physical survey

- The physical survey of the proposed project areas was conducted on 16 and 29 September 2020
- The survey took two days to complete.
- The documented sites were numbered sequentially.
- Sites were recorded by using a handheld Garmin Oregon 450 GPS unit and the unit was given time to reach an accuracy of at least 5 metres.
- Sites were plotted on 1:50 000 topographical maps which are geo-referenced (WGS 84) and also on Google Earth.
- Some sites of heritage significance were located and documented. A number of survey orientation sites were mapped for survey purposes.

3.2. Social Consultation

Social consultation forms an important part of identifying sites which may be of heritage significance. Farmer and resident on the farm Malalane 389 JU, Mr Hennie Botes, was consulted about the presence of heritage sites within the project area and he pointed out a site where he was told that people were

buried many years ago. He has been living on the property for thirty years and has known about this place for a long time. This site was visited with the aid of Mr Botes, investigated and documented as site MAL 8. It is located very close to the north-western corner of the town under large wild fig trees (see Appendix C – Maps). There are however no grave dressings or headstones visible. It is possible that it was either removed or that the graves are located at a different but nearby location.

3.3. Heritage site significance

The South African Heritage Resources Agency (SAHRA) formulated guidelines for the conservation of all cultural resources (sections 6 and 7 of the NHRA, 1999) and therefore also divided such sites into three main categories. These categories might be seen as guidelines that suggest the extent of protection a given site might receive. They include sites or features of local (Grade 3) provincial (Grade 2) national (Grade 1) significance, grades of *local significance* and *generally protected* sites with a variety of degrees of significance.

For practical purposes the surveyor uses his own classification for sites or features and divides them into three groups, those of low or no significance, those of medium significance and those of high significance **(Also see table 5.2. Significance rating guidelines for sites).**

Values used to assign significance and impact characteristics to a site include:

- **Types of significance**

The site's scientific, aesthetic and historic significance or a combination of these is established.

- **Degrees of significance**

The archaeological or historic site's rarity and representative value is considered. The condition of the site is also an important consideration.

- **Spheres of significance**

Sites are categorized as being significant in the international, national, provincial, regional or local context. Significance of a site for a specific community is also taken into consideration.

To arrive at the specific allocation of significance of a site or feature, the specialist considers the following:

- Historic context;
- Archaeological context or scientific value;
- Social value;
- Aesthetic value; and

- Research value.

More specific criteria used by the specialist in order to allocate value or significance to a site include:

- The unique nature of a site;
- The integrity of the archaeological deposit;
- The wider historic, archaeological and geographic context of the site;
- The location of the site in relation to other similar sites or features;
- The depth of the archaeological deposit (when it can be determined or is known);
- The preservation condition of the site;
- Quality of the archaeological or historic material of the site; and
- Quantity of sites and site features.

Archaeological and historic sites containing data, which may significantly enhance the knowledge that archaeologists currently have about our cultural heritage, should be considered highly valuable. In all instances these sites should be preserved and not damaged during construction activities. However, when development activities jeopardize the future of such a site, a second and third phase in the Cultural Resource Management (CRM) process is normally advised. This entails the excavation or rescue excavation of cultural material, along with a management plan to be drafted for the preservation of the site or sites.

Graves are considered very sensitive sites and should never under any circumstances be jeopardized by development activities. Graves and burial grounds are incorporated in the NHRA under section 36 and in all instances where graves are found by the surveyor, the recommendation would be to steer clear of these areas. If this is not possible or if construction activities have for some reason damaged graves, specialized consultants are normally contacted to aid in the process of exhumation and re-interment of the human remains.

4. History and Archaeology

4.1. Historic period

4.1.1. Early History

In Southern Africa the domestication of the environment began only a couple of thousands of years ago, when agriculture and herding were introduced. At some time during the last half of the first millennium BC, people living in the region where Botswana, Zambia and Angola are today, started moving southward, until they reached the Highveld and the Cape in the area of modern South Africa. As time passed and the sub-continent became fully settled, these agro-pastoralists, who spoke Bantu languages, started dominating all those areas which were ecologically suitable for their way of life. This included roughly the eastern half of modern South Africa, the eastern fringe of Botswana and the north of Namibia. Historians agree that the earliest Africans to inhabit in the Lowveld in Mpumalanga were of Nguni origin.

Up until the 1930s, malaria would have occurred sporadically in the study area during the rainy season. During the first half of the nineteenth century, Tsetse flies also thrived in this area. Pastoralists would have avoided the moist low-lying valleys and thickly wooded regions where these insects preferred to congregate. It is unlikely that populations would be dense in areas where malaria and the “sleeping sickness” transferred by Tsetse flies was a constant threat to humans and their stock (Bergh 1999: 3; Shillington 1995: 32).

In a few decades, the course of history in the old Transvaal province would change forever. The Difaqane (Sotho), or Mfekane (“the crushing” in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820s until the late 1830s. It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka’s Zulus to attack other tribes.

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa – some as early as the 1720’s. One such an adventurer was Robert Schoon, who formed part of a group of Scottish travellers and traders who had travelled the northern provinces of South Africa in the late 1820s and early 1830s. Schoon had gone on two long expeditions in the late 1820’s and once again ventured eastward and northward of Pretoria in 1836 (Bergh, 1999: 13, 116-121).

By the late 1820s, a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the numbers of people of European descent. As can be expected, the

movement of whites into the Northern provinces would have a significant impact on the local farmer – herders who populated the land.

By 1860, the population of Europeans in the central Transvaal was already very dense and the administrative machinery of their leaders was firmly in place. Many of the policies that would later be entrenched as legislation during the period of apartheid had already been developed (Ross 2002: 39; Bergh, 1999: 170).

However, relations were at times also interdependent in nature. After the Great Trek, when European farmers had settled at various areas in the northern provinces, wealthier individuals were often willing to lodge needy white families on their property in exchange for odd jobs and commando service. These “bywoners” often arrived with a family and a few cows. He would till the soil and pay a minimal rent to the farmer from the crops he grew. The farmer did not consider him a labourer, but mostly kept workers for hard labour on the farm.

The discovery of gold in South Africa had a major impact in the region. In 1873 gold was discovered in Pilgrims Rest, 80 kilometres north of Nelspruit. This drew scores of prospectors into the region. The establishment of Barberton in 1884, after the discovery of the Sheba gold reef, also brought about greater activity in the area. The Nelspruit settlement first received official recognition in August 1884 (South African History Online 2013).

4.1.2. The Voortrekkers

The Groot Trek of the Voortrekkers started with the Tregardt- van Rensburg trek in 1835. The two men met where Tregardt and his followers crossed the Orange River at Buffelsvlei (Aliwal North). Here van Rensburg joined the trek northwards. On August 23, 1837 the Tregardt trek left for Delagoabay from the Soutpansberg. They travelled eastwards alongside the Olifants River to the eastern foothills of the Drakensberg. From here they travelled through the Lowveld and the current Kruger National Park where they eventually crossed the Lebombo mountains in March 1838. They reached the Fortification at Lourenço Marques on 13 April 1838 (Bergh, 1998:124-125).

Permanent European (Voortrekker) settlement of the eastern areas of Mpumalanga can be traced back to a commission under the leadership of A.H. (Hendrik) Potgieter who negotiated with the Portuguese Governor at Delagoabaai in 1844 for land. It was agreed that these settlers could settle in an area that was four days journey from the east coast of Africa between the 10° and 26° south latitudes. Voortrekkers started migrating into the area in 1845. Andries-Ohrigstad was the first town established in this area in July 1845 after the Voortrekkers successfully negotiated for land with the Pedi Chief Sekwati. Farms were given out as far west as the Olifants River. The western boundary was not officially defined but at a Volksraad meeting in 1849 it was decided that the Elands River would be the boundary between

the districts of Potchefstroom and Lydenburg as this eastern portion of the Transvaal was then known (Bergh, 1998).

Due to internal strife and differences between the various Voortrekker groups that settled in the broader Transvaal region, the settlers in the Ohrigstad area now governed from the town of Lydenburg decided to secede from the Transvaal Republic in 1856. The Republic of Lydenburg laid claim to a large area that included not only the land originally obtained from the Pedi Chief Sekwati in 1849 but also other areas of land negotiated for from the Swazis. The Republic of Lydenburg was a vast area and stretched from the northern Strydpoort mountains to Wakkerstroom in the south and Bronkhortsspruit in the west to the Swazi border and the Lebombo mountains east.

As can be expected, the migration of Europeans into the north would have a significant impact on the indigenous people who populated the land. This was also the case in Mpumalanga. In 1839 Mswati succeeded Sobhuza (also known as Somhlomo) as king of the Swazi. Threatened by the ambitions of his half-brothers, including Malambule, who had support from the Zulu king Mpande, he turned to the Ohrigstad Boers for protection. He claimed that the land that the Boers had settled on was Swazi property. The Commandant General of the Ohrigstad settlement, Andries Hendrik Potgieter, responded that the land was ceded to him by the Pedi leader Sekwati, in return for protection of the Pedi from Swazi attacks (Giliomee, 2003).

However, in reaction to the increasingly authoritarian way in which Potgieter conducted affairs at Ohrigstad, the Volksraad of Ohrigstad saw Mswati's offer as a means to obtain more respectable title deeds for the property (Bonner, 1978). According to a sales contract set up between the Afrikaners and the Swazi people on 25 July 1846, the whites were the rightful owners of the land that had its southern border at the Crocodile River, which stretched out in a westerly direction up to Elandspruit; of which the eastern border was where the Crocodile and Komati rivers joined and then extended up to Delagoa bay in the north (Van Rooyen, 1951). The Europeans bought the land for a 100 heads of cattle (Huyser).

4.1.3. History of the Anglo Boer War (1899-1902) in the area

The discovery of diamonds and gold in the Northern provinces had very important consequences for South Africa. After the discovery of these resources, the British, who at the time had colonized the Cape and Natal, had intentions of expanding their territory into the northern Boer republics. This eventually led to the Anglo-Boer War, which took place between 1899 and 1902 in South Africa, and which was one of the most turbulent times in South Africa's history.

Even before the outbreak of war in October 1899 British politicians, including Sir Alfred Milner and Mr. Chamberlain, had declared that should Britain's differences with the Z.A.R. result in violence, it would mean the end of republican independence. This decision was not immediately publicised, and as a

consequence republican leaders based their assessment of British intentions on the more moderate public utterances of British leaders. Consequently, in March 1900, they asked Lord Salisbury to agree to peace on the basis of the status quo ante bellum. Salisbury's reply was, however, a clear statement of British war aims (Du Preez, 1977).

During the British advance between February to September 1900, Lord Roberts replaced Genl. Buller as the supreme commander and applied a different tactic in confronting the Boer forces instead of a frontal attack approach he opted to encircle the enemy. This proved successful and resulted for instance in the surrender of Genl. Piet Cronje and 4000 burghers at Paardeberg on 27 February 1900.

This was the start of a number of victories for the British and shortly after they occupied Pretoria on 5 June 1900, a skirmish at Diamond Hill resulted in the Boer forces under command of Louis Botha, retreated alongside the Delagoa Bay railway to the east. Between the 21-27 August, Botha and 5000 burghers defended their line at Bergendal but were overwhelmed by superior numbers and artillery. This resulted in the Boer forces retreating even further east and three weeks later the British reached Komatipoort and thus the whole of the Eastern Transvaal south of the Delagoa Bay railway line was now occupied by British Forces.

General Louis Botha, with his Boer forces, marched through Nelspruit on 11 September 1900. A week later, on 18 September 1900, the British battalion of Lieutenant General F. Roberts arrived in Nelspruit. No major skirmishes in the war took place near Nelspruit, but a concentration camp for black people was established a small distance to the north of the town. Another event of import in the area was the arrival of the President of the Transvaal, Paul Kruger, in Nelspruit on 29 May 1900, where he received a message saying Lord Roberts had annexed the Transvaal. Kruger declared the annexation illegitimate on 3 September 1900, the same day that Nelspruit was proclaimed as the administrative capital of the Transvaal Republic. Kruger left Nelspruit in June of that year in order to board a ship to Swaziland (Bergh, 1999: 51; 54).

4.1.4. Railway history in the Eastern Lowveld

The building of the railway line between Pretoria and Delagoa Bay commenced after the Kruger Government gave the concession for the building of the line to the Nederlandsche Zuid-Afrikaansche Spoorweg-Maatschappij (NZASM). The railway line was completed in 1895 (de Jong et al. 1988).

Before completion of the Eastern, or Delagoa Bay Railway line in 1895, payable gold was discovered in the Lowveld regions of Gravelotte, Leydsdorp, Rubbervale, Trichardtsdal and the Selati Goldfields. This necessitated that a railway line to connect the North-eastern Transvaal with the central markets of the ZAR be constructed (Pienaar, 1990).

President Paul Kruger supported this idea and in July 1890 he managed to convince the “Volksraad” that a proposed railway line connecting the Soutpansberg and Selati Goldfields with the main line to Lourenço Marques (Delagoa Bay) be approved.

This proved to be quite an expensive project and in May of 1893 the first plans for the railway was approved by railway commissioner Mr J.S. Smit (Pienaar, 1990). The Selati railway line would be 307 km long and the project take three years to complete at an estimated cost of £6 000 per km.

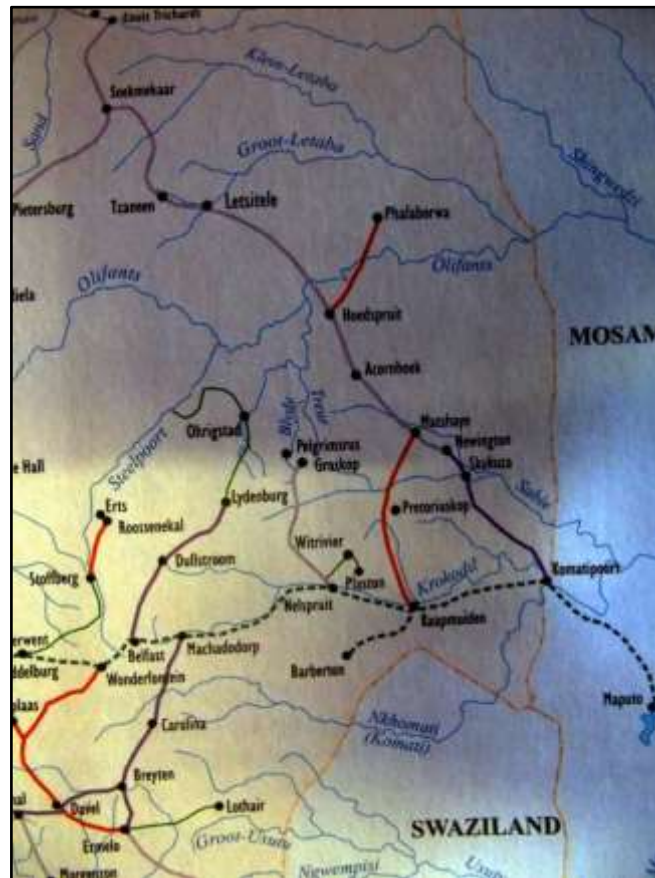


Figure 4.1. Railway development in the Transvaal, 1889-1980 (Bergh, 1999: 79)

The contractor who was commissioned to complete the work was that of Baron Eugène Oppenheim who had to commit the first £500 000 after which the ZAR Government would follow with £1,5 million. The construction company appointed for the work, Westwood & Winby, completed surveying of the line in early 1893 and by July of that year some 40 km of the line was completed (Pienaar, 1990). Unfortunately Oppenheim acted unlawfully in his dealings with the ZAR and after an enquiry initiated by Smit, all work on the railway halted after approximately 120 km between Komatipoort and Newington was completed. After numerous legal battles both in ZAR and abroad, all concessions awarded to Oppenheim was nullified and at that stage the Selati Railway line was left incomplete. Materials and tools used for the construction of the line were left abandoned in the wilderness together with numerous unmarked graves

of British workers who succumbed to malaria (Pienaar, 1990). The graveyard in Komatipoort is testament to this and a number of individuals lie buried here including Patrick O'Connor (11 June 1893), Aubrey Drury (24 June 1895), Frank Wilson (18 September 1893), George Charles Bovey (30 November 1893) and John Frederick Farrall (21 August 1894). Although no evidence could be found, it is probable that the grave of C.C. Moloney who died 22 July 1894, located very near the Selati line in the Sabi Sand Reserve is further testimony to the hardships endured by the railway labourers.



Figure 4.2. Mr George Pauling was the appointed contractor for the Eastern Railway Line between 1892-1894 and also a section of the Selati Line during 1909-1912 (Pienaar, 1990).

During the Anglo Boer War (1899-1902) a small British regiment under command of Prussian “Baron” Ludwig von Steinaecker, known as Steinaecker’s Horse, was tasked to patrol the border between the Transvaal and Mozambique. Steinaecker used the Selati railway for this purpose and used the train to transport his troops and supplies between Komatipoort and Sabie Bridge. He also erected military outposts along the Swaziland border up to the north of Letaba where he stationed an officer and a few troops at each post (Pienaar, 1990). Two of these outposts would later play an important role in the establishment history of the Kruger National Park, one at Gomondwane and the other on the southern bank of the Sabie River at the Sabie railway bridge.

Pioneer and visionary of the later Kruger National Park, Col. James Stevenson-Hamilton appointed the first field ranger and stationed Mr E.G. (Gaza) Grey at Gomondwane. In 1902 Stevenson-Hamilton made

von Steinaecker's blockhouse at Sabie Bridge his first home. This outpost later developed into the Skukuza Rest Camp (Pienaar, 1990).



Figure 4.3. Construction of the Selati Line north of the Sabie Bridge in 1911 (Stevenson-Hamilton Collection, Skukuza Archive in Pienaar, 1990).

At this stage, after the War, the area between the Crocodile and Sabie Rivers were re-proclaimed as Nature Reserve and Stevenson-Hamilton served as the keeper. Materials and equipment which were used to construct the Selati Line was used by him to develop infrastructure of the Reserve. He also got permission to utilize the railway for this purpose and fabricated a transport trolley consisting of a railway undercarriage and wheels with a platform to transport materials, staff and equipment (Pienaar, 1990).

After the establishment of the Union of South Africa in 1910 and the resultant S.A.S (South African Railway Services) funds became available to extend the Selati Line towards Tzaneen (fig. 4.1.). Experienced railway contractor, Mr George Pauling (George Pauling & Co.) was awarded the contract and in 1912 it was completed and connected with Tzaneen (Pienaar, 1990). In 1915 the line was extended even further and reached Soekmekaar. At this stage however, the Selati Goldfields were waning and gold mining became less profitable. The economic sustainability of the Selati Line was again compromised and subsequently in 1921 concessions to prospect for coal were awarded along the Selati Line. It was however the vision of Mr Harry Caldecott, marketing manager of the S.A.S, which led to the idea of promoting tourism to the Reserve by making use of the railway line. The S.A.S decided that a package tour for tourists visiting the Eastern and North-eastern Transvaal named "Rondomtalie in nege da" (Round Trip in nine days) was to be implemented. The first of these became reality in 1923. It started

and concluded in Johannesburg and included visits to Lourenço Marques (Maputo) and the section through the Sabie Reserve was regarded as the highlight of the tour (Pienaar, 1990).

In the year 1926 the Kruger National Park was established and more and more tourists made use of this service. The visitor experience was enhanced by a regular campfire social event at Huhla station and at certain places the train stopped and passengers guided by a ranger for a short walk in the reserve. A certain highlight of this service was when, in 1925, the Prince of Wales took part in this unique tour (Pienaar, 1990).

The Selati Line was however not without problems which included regular veld fires caused by the train, collisions with game and some very serious train collisions which led to numerous casualties. Commercial activity and mining in the Phalaborwa area led to the Selati Line being busier than ever and it became necessary to electrify the line in order to meet the demand. In light of the problems experienced with fire and game the S.A.S decided to divert the line further and West of the Kruger National Park border. During the construction of this section, one night a train collided with a herd of elephant which led to one being killed and several wounded. In 1968 a new line extending from Kaapmuiden was built West of the Nsikazi River and at Metsi, a few kilometres North of Newington, it joined the Selati Line. Upon completion of this new line traffic diminished drastically and from April 1971 a single daily service between Komatipoort and Skukuza was used for the transport of supplies (Pienaar, 1990).

4.1.5. Historical overview and development of Malalane and surrounds

The earliest recorded owners of Malelane 389 JU appear to be George Joseph Elphick and William Studeley Sturton, who traded together in partnership, as G.J. Elphick and Company (NARSSA SAB, URU: 396 610). The partnership cultivated tomatoes, cotton, mangos, oranges and pawpaws on the property (Corridor Gazette, 2016).

In 1949 the town was proclaimed and only thereafter was it named Malelane. According to Barnard (Barnard, 1975) the name Malelane derived from the ilala palm tree (*Hyphaene natalensis*) which occurs alongside certain sections of the Crocodile River. Sap from the ilala palm trunk was traditionally used to make palm beer. In the vicinity of a well-used footpath which crosses the Crocodile River, stood a number of ilala palm trees. The local Swazi's named this crossing *Emalaleni* which means "at the ilala palms". Later this name became the name of a farm and also the name of the railway siding. The spelling changed from Malaleni to Malelane (Barnard, 1975:118). In July 2007, the town Malelane was officially renamed to Malalane (Jenkins, 2007: 76).

In 1874 the Volksraad of the South African Republic (ZAR) decided that a railway line should be built connecting the ZAR to the port at Lourenço Marques in Portuguese East Africa (now Maputo in

Mozambique). (de Busy 1910: 4) However, the project was halted by the First Anglo-Boer War and the line was eventually only opened on 1 January 1895, (de Busy, 1910: 13).

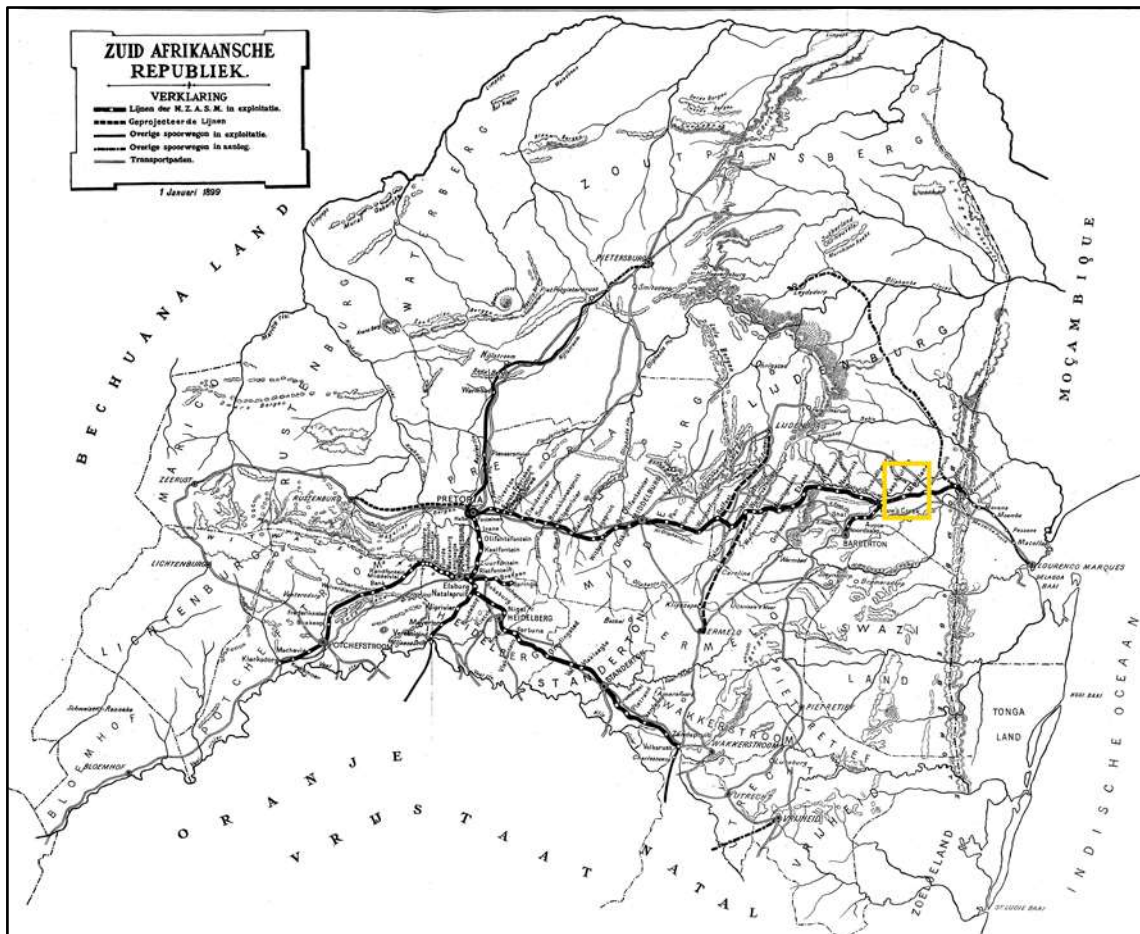


Figure 4.4. A map of railway lines and proposed railway lines, in 1899, operated by the Nederlandsche Zuid-Afrikaansche Spoorwegmaatschappij within the ZAR, indicating the location of the Malelane railway station, which is located on Malelane 389 JU, (de Busy, 1910).

In 1898 and again in 1903, the area north of Malalane, across the Crocodile River, was proclaimed as a nature reserve as part of the Sabi Reserve (Bergh, 1999: 58). In 1926, with the introduction of the National Parks Act (Act 56 of 1926), Sabi Reserve was incorporated into the greater Kruger National Park (Bergh, 1999: 268). In 1942, the government of Transvaal commissioned a road to be built, which was eventually tarred. In 1998 the road servicing the area was upgraded to a national road, named the N4.

4.1.6. Historical overview of the Malelane Irrigation Board canal system

Several times in the past schemes to develop the Lower Crocodile River have been investigated, starting in 1918 with the George-Impala Scheme. This was a proposal to irrigate some 9000 morgens of riparian and non-riparian land between Kaapmuiden and Hectorspruit. However, it was considered uneconomical and the project was abandoned (NARSSA SAB, WW: 111 K4/34).

In 1931, the Ten Bosch area was examined for potential irrigation of approximately 11 000 morgens but based on the disappointing results of extensive soil surveys, the project was shelved (NARSSA SAB, WW: 111 K4/34). A serious deterrent of development of the area was the prevalence of malaria and Blackwater. Real development could only take place once these illnesses were eradicated (NARSSA SAB, WW: 111 K4/34). Because of the steep banks of the Crocodile River and the absence of alluvial terraces, all development must take place by means of pumping with water turbines or diesel pumps (NARSSA SAB, WW: 111 K4/34).

The Malelane Irrigation District was established in 1947 and comprised only a small part of the original George-Impala Scheme (NARSSA SAB, URU: 2393 436). Approximately 2000 morgen of the farms Malelane and Malelane Estates was irrigated by diesel pumps. However, by 1955, these pumps were nearing the end of their useful life and interested persons approached the department in connection with the construction of a canal scheme with a diversion weir in the Crocodile Gorge. The investigation of such a scheme had to be postponed until the allocation of water in the Government Water Control Area had been established. In 1960, the scheme was redesigned by Government, the proposals approved by the Water Board and the original district extended to include the whole of the area that could be served by the proposed canal (NARSSA SAB, WW: 111 K4/34).

During initial investigations into the scheme, it was considered whether it would be possible to include all grounds along the lower Crocodile River, up to Komatipoort. However, it was found that such a scheme would cost more than separate smaller irrigation systems and further investigations into a larger scheme was stopped (NARSSA SAB, WW: 111 K4/34).

In 1961, the White Paper for this scheme was laid before Parliament for approval of construction with a Government loan and subsidy (NARSSA SAB, WW: 111 K4/34). In the same year, a loan in the amount of R1 740 000, repayable over 30 years at a rate of 6% per annum, was approved by Government (NARSSA SAB, URU: 4243 1609).

Originally it was intended that the branch canals would be short and unlined. However, in 1966, the Irrigation Board decided to build an extended, improved reticulation system which would supply water to all the individual owners at their plots.



Figure 4.5. A map of the Malelane Irrigation Board's canal system dated 1961, which was submitted to Parliament. The canal system is shown with a yellow line (NARSSA TAB, TRB: 2/1/689 124/10/152).

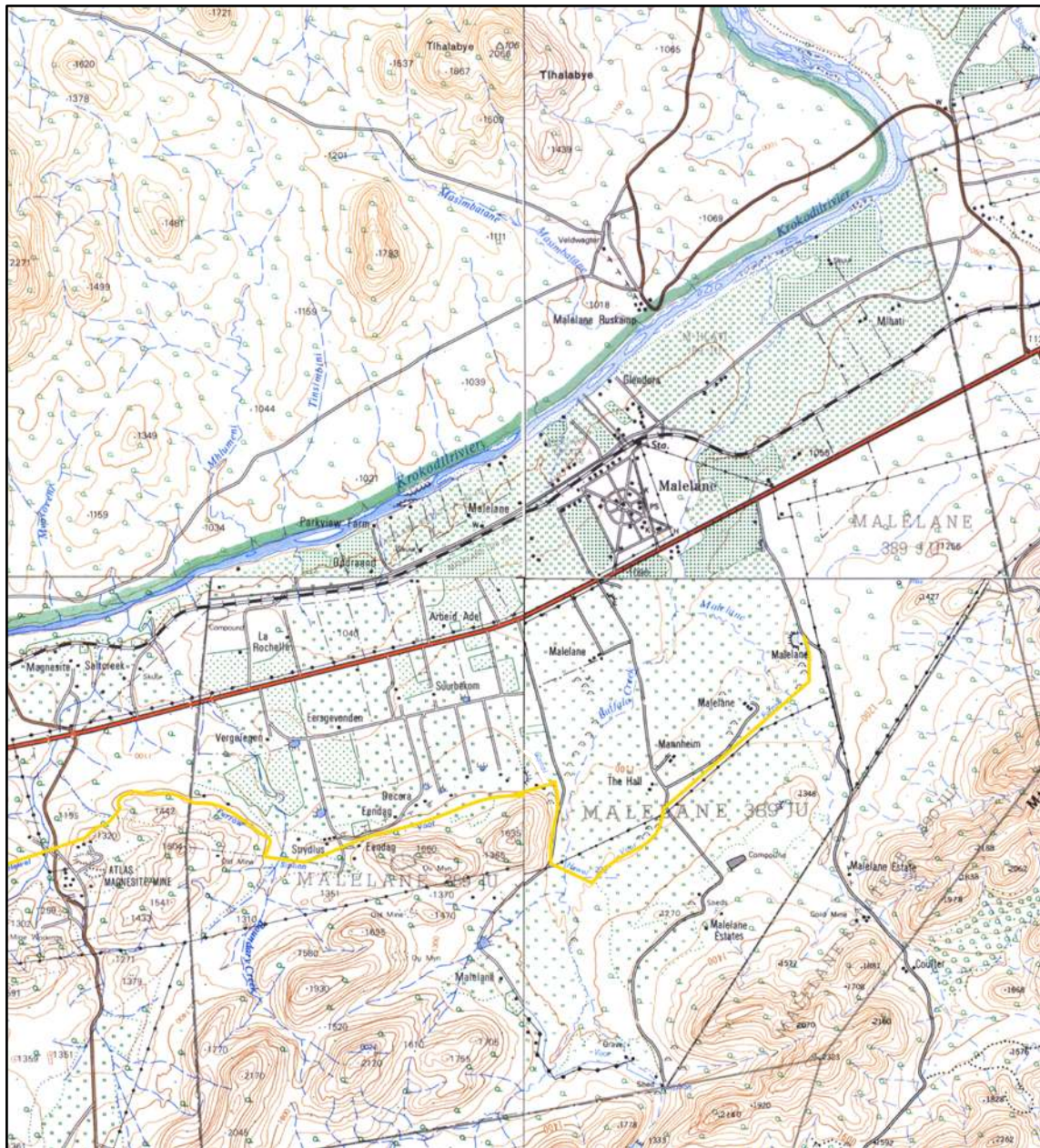


Figure 4.6. A Topographical map dated 1967 and 1970 of the study area. The N4 national road, red colour, is visible as well as the town Malalane. The approximate location of the main Malelane Irrigation Board Scheme canal and pipeline system is shown in yellow (Topographical Map 1967; Topographical Map 1968; Topographical Map 1970; Topographical Map 1970).

When completed, the system was approximately 100 000 feet long, a considerable portion of which, consisted of pressure pipelines. The ultimate cost of the scheme came to R2 700 000 (NARSSA SAB, WW: 111 K4/34).

The main component structures of the scheme comprised:

1. A diversion weir, in the Crocodile River Poort (Gorge) with a height of approximately 60 feet.
 2. The Poort Section, consisting of 33 000 feet of water conduit on the northern bank of the Crocodile River. This portion traverses very difficult terrain and it consists largely of a 52-inch diameter pipeline.
 3. The Main Canal, with thirteen siphons, stretching from Kaapmuiden to beyond Malelane, a total length of nearly nineteen miles.
 4. Branch Canals of approximately 20 miles, which supply water to the individual owners of land.
- (NARSSA SAB, WW: 111 K4/34).

Open concrete canals were built in accordance with the usual parabolic shape which has been developed by the Department of Water Affairs and the pipelines were constructed from locally produced pre-stressed concrete pipes with a maximum diameter of 52 inches and 16 feet long (NARSSA SAB, WW: 111 K4/34).

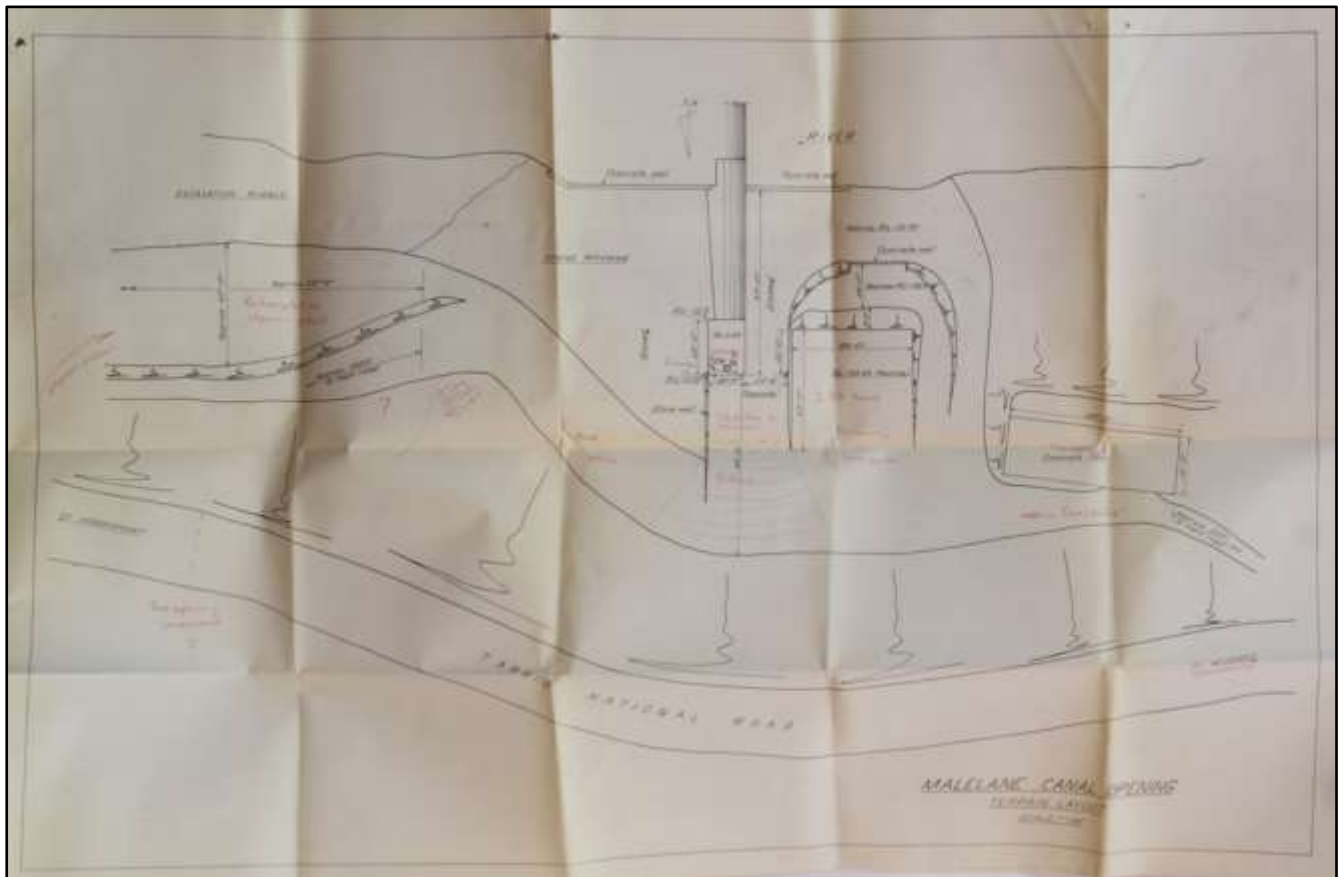


Figure 4.7. Map and detail plan of the Malelane Canal during its official opening circa 1967 (NARSSA SAB, WW: 111 K4/34/1).

On 3 August 1967, the Malelane Irrigation Board Scheme was opened by the Honourable Dr. J.J Fouche, Minister of Water Affairs at a public ceremony (NARSSA SAB, WW: 111 K4/34).

4.1.7. Historic maps of the study area

Since the mid-1800s up until the present, South Africa has been divided and re-divided into various districts. As of 1875, the property under investigation would have formed part of the Lydenburg district. This remained the case up until 1902, when the Barberton district was proclaimed. The study area remained part of this district up until 1994 (Bergh, 1999: 17, 20-27).

Before 1902, the property was known as Malelane 74, Lydenburg District. By 1911 the property under investigation was known as Malelane 239 of Section B of the Kaap Block, Barberton District. After 1950 it was known as Malelane 389 JU.

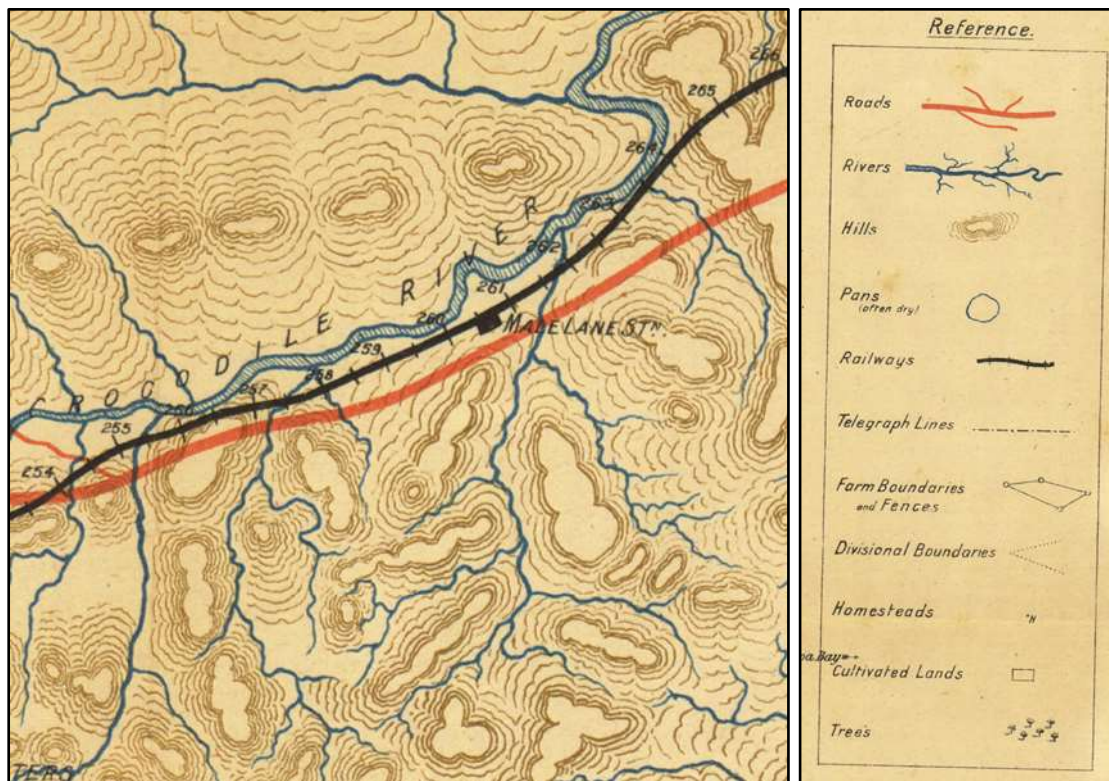


Figure 4.8. A map of De Kaap in the year 1900. At the time, the study area had not yet been surveyed. The Crocodile river can be seen in the north, the railway can be seen parallel, just south of the river with Malelane Station built on the study area. A road can be seen just south of the railway line. No other developments can be seen on the property (Field Intelligence Department, 1900).

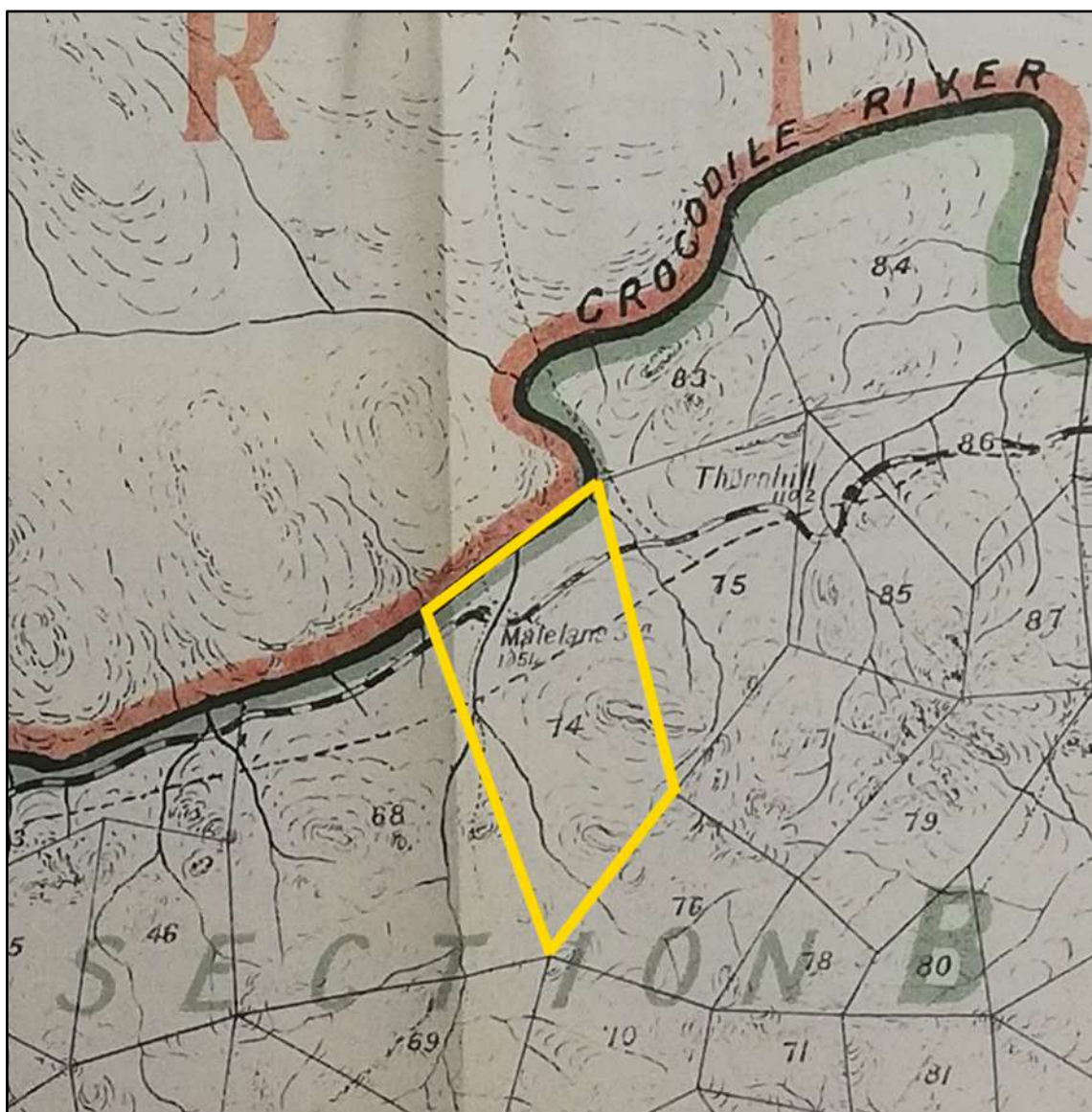


Figure 4.9. A Map of the Kaap Block in 1908. At the time, the property was known as Malelane 74, Section B of the Kaap Block. The Crocodile River forms the northern boundary of the farm and this is also the boundary between Barberton and the Kaap Block. The NZASM Eastern Railway Line can be seen in the north of the study area, with a parallel road to the south of the railway line (Surveyor-General's Office, 1904).

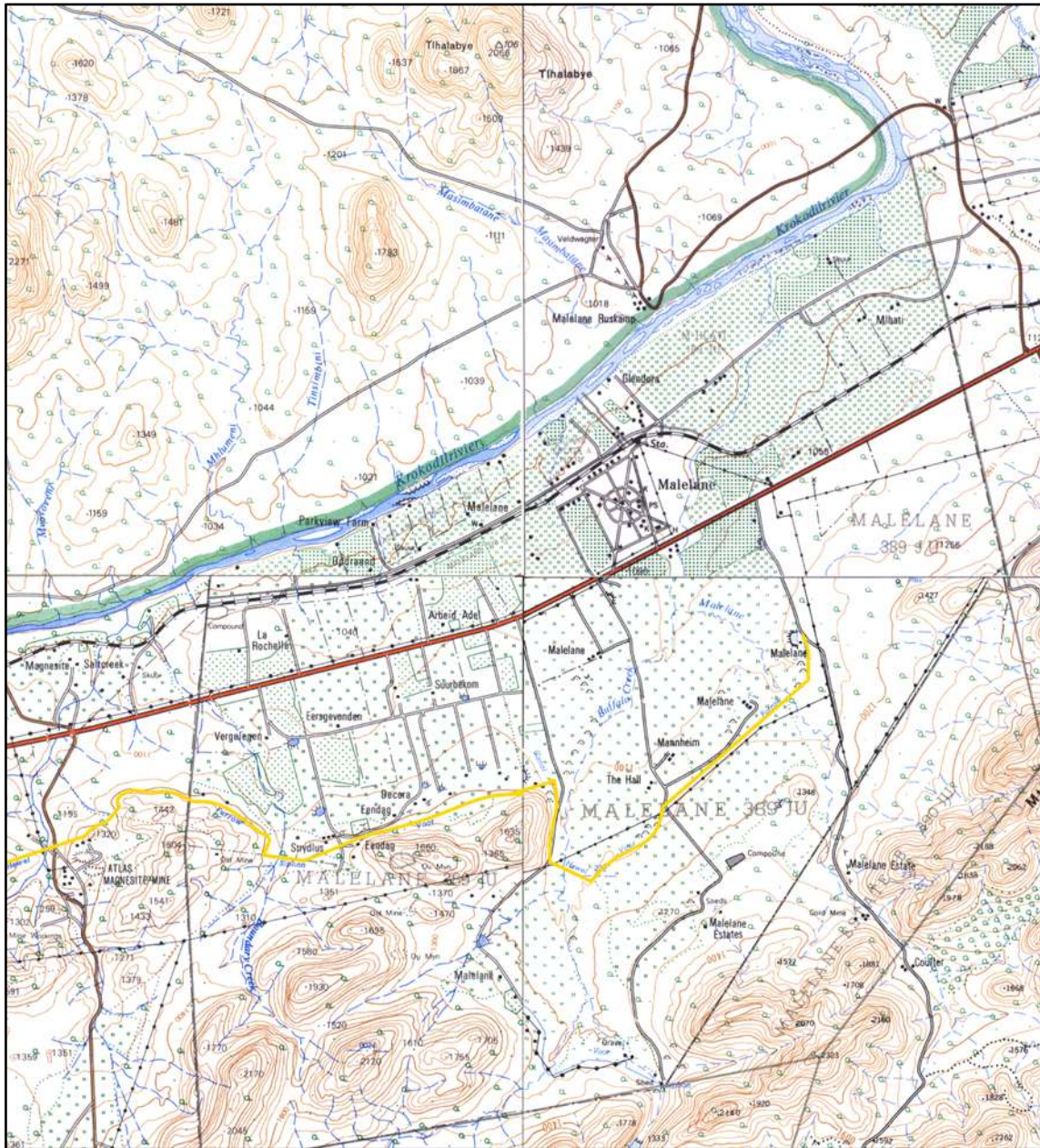


Figure 4.11. A Topographical map incorporating the years 1967 – 1970 showing the area under investigation. The approximate location of the main Malélane Irrigation Board Scheme canal and pipeline system is shown in yellow (Topographical Map 1967; Topographical Map 1968; Topographical Map 1970; Topographical Map 1970).

4.2. Archaeology

4.2.1. Stone Age

In Mpumalanga Province the Drakensberg separates the interior plateau also known as the Highveld from the low-lying subtropical Lowveld, which stretches to the Indian Ocean. A number of rivers amalgamate into two main river systems, the Olifants River and the Komati River. This fertile landscape has provided resources for humans and their predecessors for more than 1.7 million years (Esterhuizen & Smith in Delius, 2007).

The initial attraction of abundant foods in the form of animals and plants eventually also led to the discovery of and utilisation of various minerals including ochre, iron and copper. People also obtained foreign resources by means of trade from the coast. From 900 AD this included objects brought across the ocean from foreign shores.

The Early Stone Age (ESA)

In South Africa the ESA dates from about 2 million to 250 000 years ago, in other words from the early to middle Pleistocene. The archaeological record shows that as the early ancestors progressed physically, mentally and socially, bone and stone tools were developed. One of the most influential advances was their control of fire and diversifying their diet by exploitation of the natural environment (Esterhuizen & Smith in Delius, 2007).

The earliest tools date to around 2.5 million years ago from the site of Gona in Ethiopia. Stone tools from this site shows that early hominids had to cognitive ability to select raw material and shape it for a specific application. Many bones found in association with stone tools like these have cut marks which lead scientists to believe that early hominids purposefully chipped cobblestones to produce flakes with a sharp edge capable of cutting and butchering animal carcasses. This supplementary diet of higher protein quantities ensured that brain development of hominids took place more rapidly.

Mary Leaky discovered stone tools like these in the Olduvai Gorge in Tanzania during the 1960s. The stone tools are named after this gorge and are known as relics from the Oldowan industry. These tools, only found in Africa, are mainly simple flakes, which were struck from cobbles. This method of manufacture remained for about 1.5 million years. Although there is continuing debate about who made these tools, two hominids may have been responsible. The first of these was an early form of *Homo* and the second was *Paranthropus robustus*, which became extinct about 1 million years ago (Esterhuizen & Smith in Delius, 2007).

Some time later, around 1.7 million years ago, more specialised tools known as Acheulean tools, appeared. These are named after tools from a site in France by the name of Saint Acheul, where they were first discovered in the 1800s. It is argued that these tools had their origin in Africa and then spread

towards Europe and Asia with the movement of hominids out of Africa. These tools had longer and sharper edges and shapes, which suggest that they could be used for a larger range of activities, including the butchering of animals, chopping of wood, digging roots and cracking bone. *Homo ergaster* was probably responsible for the manufacture of Acheulean tools in South Africa. This physical type was arguably physically similar to modern humans, had a larger brain and modern face, body height and proportion very similar to modern humans. *Homo ergaster* was able to flourish in a variety of habitats in part because they were dependent on tools. They adapted to drier, more open grassland settings. Because these early people were often associated with water sources such as rivers and lakes, sites where they left evidence of their occupation are very rare. Most tools of these people have been washed into caves, eroded out of riverbanks and washed downriver. An example in Mpumalanga is Maleoskop on the farm Rietkloof where Early Stone Age (ESA) tools have been found. This is one of only a handful such sites in Mpumalanga.

Middle Stone Age (MSA)

A greater variety of tools with diverse sizes and shapes appeared by 250 000 before present (BP). These replaced the large hand axes and cleavers of the ESA. This technological advancement introduces the Middle Stone Age (MSA). This period is characterised by tools that are smaller in size but different in manufacturing technique (Esterhuizen & Smith in Delius, 2007).

In contrast to the ESA technology of removing flakes from a core, MSA tools were flakes to start with. They were of a predetermined size and shape and were made by preparing a core of suitable material and striking off the flake so that it was flaked according to a shape which the toolmaker desired. Elongated, parallel-sided blades, as well as triangular flakes are common finds in these assemblages. Mounting of stone tools onto wood or bone to produce spears, knives and axes became popular during the MSA. These early humans not only settled close to water sources but also occupied caves and shelters. The MSA represents the transition of more archaic physical type (*Homo*) to anatomically modern humans, *Homo sapiens*.

The MSA has not been extensively studied in Mpumalanga but evidence of this period has been excavated at Bushman Rock Shelter, a well-known site on the farm Klipfonteinhoek in the Ohrigstad district. This cave was excavated twice in the 1960s by Louw and later by Eloff. The MSA layers show that the cave was repeatedly visited over a long period. Lower layers have been dated to over 40 000 BP while the top layers date to approximately 27 000 BP (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

Later Stone Age (LSA)

Early hunter gatherer societies were responsible for a number of technological innovations and social transformations during this period starting at around 20 000 years BP. Hunting of animals proved more successful with the innovation of the bow and link-shaft arrow. These arrows were made up of a bone tip

which was poisoned and loosely linked to the main shaft of the arrow. Upon impact, the tip and shaft separated leaving the poisoned arrow-tip imbedded in the prey animal. Additional innovations include bored stones used as digging stick weights to uproot tubers and roots; small stone tools, mostly less than 25mm long, used for cutting of meat and scraping of hides; polished bone tools such as needles; twine made from plant fibres and leather; tortoiseshell bowls; ostrich eggshell beads; as well as other ornaments and artwork (Esterhuizen & Smith in Delius, 2007).

At Bushman Rock Shelter the MSA is also represented and starts at around 12 000 BP but only lasted for some 3 000 years. The LSA is of importance in geological terms as it marks the transition from the Pleistocene to the Holocene, which was accompanied by a gradual shift from cooler to warmer temperatures. This change had its greatest influence on the higher-lying areas of South Africa. Both Bushman Rock Shelter and a nearby site, Heuningneskrans, have revealed a greater use in plant foods and fruit during this period (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

Faunal evidence suggests that LSA hunter-gatherers trapped and hunted zebra, warthog and bovinds of various sizes. They also diversified their protein diet by gathering tortoises and land snails (*Achatina*) in large quantities.

Ostrich eggshell beads were found in most of the levels at these two sites. It appears that there is a gap of approximately 4 000 years in the Mpumalanga LSA record between 9 000 BP and 5 000 BP. This may be a result of generally little Stone Age research being conducted in the province. It is, however, also a period known for rapid warming and major climate fluctuation, which may have led people to seek out protected environments in this area. The Mpumalanga Stone Age sequence is visible again during the mid-Holocene at the farm Honingklip near Badplaas in the Carolina district (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

At this location, two LSA sites were located on opposite sides of the Nhlazatshe River, about one kilometre west of its confluence with the Teespruit. These two sites are located on the foothills of the Drakensberg, where the climate is warmer than the Highveld but also cooler than the Lowveld (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

Nearby the sites, dated to between 4 870 BP and 200 BP are four panels, which contain rock art. Colouring material is present in all the excavated layers of the site, which makes it difficult to determine whether the rock art was painted during the mid- or later Holocene. Stone walls at both sites date from the last 250 years of hunter gatherer occupation and they may have served as protection from predators and intruders (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

4.2.2. Early Iron Age

The period referred to as the Early Iron Age (AD 200-1500 approx.) started when presumably Karanga (north-east African) herder groups moved into the north eastern parts of South Africa. It is believed that these people may have been responsible for making of the famous Lydenburg Heads, ceramic masks dating to approximately 600AD.

Ludwig von Bezing was a boy of more or less 10 years of age when he first saw pieces of the now famous Lydenburg heads in 1957 while playing in the veld on his father's farm near Lydenburg. Five years later von Bezing developed an interest in archaeology and went back to where he first saw the shards. Between 1962 and 1966 he frequently visited the Sterkspruit valley to collect pieces of the seven clay heads. Von Bezing joined the archaeological club of the University of Cape Town when he studied medicine at this institution.

He took his finds to the university at the insistence of the club. He had not only found the heads, but potsherds, iron beads, copper beads, ostrich eggshell beads, pieces of bones and millstones. Archaeologists of the University of Cape Town and WITS Prof. Ray Innskeep and Dr Mike Evers excavated the site where von Bezing found the remains. This site and in particular its unique finds (heads, clay masks) instantly became internationally famous and was henceforth known as the Lydenburg Heads site.

Two of the clay masks are large enough to probably fit over the head of a child, the other five are approximately half that size. The masks have both human and animal features, a characteristic that may explain that they had symbolic use during initiation- and other religious ceremonies. Carbon dating proved that the heads date to approximately 600 AD and was made by Early Iron Age people. These people were Bantu herders and agriculturists and probably populated Southern Africa from areas north-east of the Limpopo river. Similar ceramics were later found in the Gustav Klingbiel Nature Reserve and researchers believe that they are related to the ceramic wares (pottery) of the Lydenburg Heads site in form, function and decorative motive. This sequence of pottery is formally known as the Klingbiel type pottery. No clay masks were found in a context similar to this pottery sequence.

Two larger heads and five smaller ones make up the Lydenburg find. The Lydenburg heads are made of the same clay used in making household pottery. It is also made with the same technique used in the manufacture of household pottery. The smaller heads display the modelling of a curved forehead and the back neck as it curves into the skull. Around the neck of each of the heads, two or three rings are engraved horizontally and are filled in with hatching marks to form a pattern. A ridge of clay over the forehead and above the ears indicates the hairline. On the two larger heads a few rows of small clay balls indicate hair decorations. The mouth consists of lips – the smaller heads also have teeth. The seventh head has the snout of an animal and is the only head that represents an animal.

Some archaeological research was done during the 1970's at sites belonging to the Early Iron Age (EIA), location Plaston, a settlement close to White River (Evers, 1977). This site is located on a spur between the White River and a small tributary. It is situated on holding 119 at Plaston.

The site was discovered during house building operations when a collection of pottery sherds was excavated. The finds consisted of pottery shards both on the surface and excavated.

Some of the pottery vessels were decorated with a red ochre wash. Two major decoration motifs occurred on the pots:

- Punctuation, using a single stylus; and
- Broad line incision, the more common motif.

A number of EIA pottery collections from Mpumalanga and Limpopo may be compared to the Plaston sample. They include Silver Leaves, Eiland, Matola, Klingbiel and the Lydenburg Heads site. The Plaston sample is distinguished from samples of these sites in terms of rim morphology, the majority of rims from Plaston are rounded and very few bevelled. Rims from the other sites show more bevelled rims (Evers, 1977:176).

Early Iron Age pottery was also excavated by archaeologist, Prof. Tom Huffman during 1997 on location where the Riverside Government complex is currently situated (Huffman, 1998). This site is situated a few km north of Nelspruit next to the confluence of the Nelspruit and Crocodile River. It was discovered during the course of an environmental impact assessment for the new Mpumalanga Government complex offices. A bulldozer cutting exposed storage pits, cattle byres, a burial and midden on the crest of a gentle slope. Salvage excavations conducted during December 1997 and March 1998 recovered the burial and contents of several pits.

One of the pits contained, among other items, pottery dating to the eleventh century (AD 1070 ± 40 BP). This relates the pottery to the Mzonjani and Broederstroom phases. The early assemblage belongs to the Kwale branch of the Urewe tradition.

During the early 1970s Dr Mike Evers of the University of the Witwatersrand conducted fieldwork and excavations in the Eastern Transvaal. Two areas were studied: the first area was the Letaba area south of the Groot Letaba River, west of the Lebombo Mountains, east of the great escarpment and north of the Olifants River. The second area was the Eastern Transvaal escarpment area between Lydenburg and Machadodorp.

These two areas are referred to as the Lowveld and escarpment respectively. The earliest work on Iron Age archaeology was conducted by Trevor and Hall in 1912. This revealed prehistoric copper-, gold- and iron mines. Schwelinius (1937) reported smelting furnaces, a salt factory and terraces near Phalaborwa.

In the same year D.S. van der Merwe located ruins, graves, furnaces, terraces and soapstone objects in the Letaba area.

Mason (1964, 1965, 1967, 1968) started the first scientific excavation in the Lowveld, followed by N.J. van der Merwe and Scully. M. Klapwijk (1973, 1974) also excavated an EIA site at Silverleaves and Evers and van den Berg (1974) excavated at Harmony and Eiland, both EIA sites.

Research by the National Cultural History Museum resulted in the excavation of an EIA site in Sekhukuneland, known as Mototolong (Van Schalkwyk, 2007). The site is characterized by four large cattle kraals containing ceramics, which may be attributed to the Mzonjani and Doornkop occupational phases.

4.2.3. Late Iron Age

The later phases of the Iron Age (AD 1600-1800's) are represented by various tribes including Ndebele, Swazi, BaKoni, and Pedi, marked by extensive stonewalled settlements found throughout the escarpment and particularly around Machadodorp, Lydenburg, Badfontein, Sekhukuneland, Roossenekal and Steelpoort. The BaKoni were the architects of a unique archaeological stone building complex who by the 19th century spoke seKoni which was similar to Sepedi. The core elements of this tradition are stone-walled enclosures, roads and terraces. These settlement complexes may be divided into three basic features: homesteads, terraces and cattle tracks. Researchers such as Mike Evers (1975) and David Collett (1982) identified three basic settlement layouts in this area. Basically these sites can be divided into simple and complex ruins. Simple ruins are normally small in relation to more complex sites and have smaller central cattle byres and fewer huts. Complex ruins consist of a central cattle byre, which has two opposing entrances and a number of semi-circular enclosures surrounding it. The perimeter wall of these sites is sometimes poorly visible. Huts are built between the central enclosure and the perimeter wall. These are all connected by track-ways referred to as cattle tracks. These tracks are made by building stone walls, which forms a walkway for cattle to the centrally located cattle byres.

5. Site descriptions, locations and impact significance assessment

Sites of social and heritage significance totalling 10 in number were documented. This includes a roadside marker for a deceased motorist (site MAL 1), remains of demolished dwellings (site MAL 6) a water furrow for irrigation (sites MAL 2, 3, 5 and 9) two formal graveyards (sites MAL 4 and 7) and a single identified burial area (MAL 8).

A total of forty three survey orientation locations were documented, sites SO 1-43 which includes a GPS location and photographs of the landscape at that particular location. These were recorded alongside the identified routes sections for the project. The survey orientation sites are tabled in Appendix B and their photos in Appendix D. A map of their location is also provided in Appendix C.

Tables indicate the **site significance rating scales and status** in terms of possible impacts of the proposed actions on any located or identified heritage sites (**Table 5.5 & 5.6**).

Table 5.1. Summary of located sites and their heritage significance

Type of site	Identified sites	Significance
Graves and graveyards	Two (MAL 4, 7, 8)	High (GP A)
Late Iron Age	None	N/A
Early Iron Age	None	N/A
Historical buildings or structures	Five (MAL 2, 3, 5, 6, 9)	Low (GP C)
Historical features and ruins	None	N/A
Stone Age sites	None	N/A

Table 5.2. Significance rating guidelines for sites

Field Rating	Grade	Significance	Recommended Mitigation
National Significance (NS)	Grade 1	High	Conservation, nomination as national site
Provincial Significance (PS)	Grade 2	High	Conservation; Provincial site nomination
Local significance (LS 3A)	Grade 3A	High	Conservation, No mitigation advised
Local Significance (LS 3B)	Grade 3B	High	Mitigation but at least part of site should be retained
Generally Protected A (GPA)	GPA	High/ Medium	Mitigation before destruction
Generally Protected B (GPB)	GPB	Medium	Recording before destruction
Generally Protected C (GPC)	GPC	Low	Destruction

5.1. Description of located sites

5.1.1. Site MAL 1

Location: See Appendix B and D (fig. 1)

Description: Roadside marker in the form of a cross. This is probably just a marker to serve as memory of the victim of a road accident. It is marked with the family name De Wet. It is located on the southern side of the N4 road. It has no heritage significance but does have some social significance.

Impact of the proposed development/ activity: It is possible that the marker may be affected by the proposed activities. It is not within the scope or competency of this report to comment on the legitimacy of the location of this marker on the roadside servitude, which will guide action to be taken by TRAC.

Recommendation: If it is necessary and practical, move the marker to a different location within the general area it was originally erected.



View south

5.1.2. Site MAL 2

Location: See Appendix B and D (fig. 2)

Description: A concrete irrigation canal or furrow. Evidence suggests that this canal system was constructed in 1966/7.

Impact of the proposed development/ activity: It is possible that the canal may be affected by the proposed activities.

Recommendation: The canal is 54 years old and therefore does not currently fall under the ambit of the Act (25 of 1999) which automatically protects structures and features older than 60 years (section 34 of the Act). It should however be noted that it is fast approaching the 60 year mark. Given its well documented origin and the drive behind its construction it is regarded as having high heritage value for the town and surrounding farming community. Current or imminent impacts should be kept minimal or avoided at best. A 20 meter buffer zone is recommended to minimize impact. If the canal or a section thereof will be negatively impacted upon, pre-emptive mitigation is recommended.



View north-east

5.1.3. Site MAL 3

Location: See Appendix B and D (fig. 3)

Description: A concrete irrigation canal or furrow. Evidence suggests that this canal system was constructed in 1966/7.

Impact of the proposed development/ activity: It is possible that the canal may be affected by the proposed activities.

Recommendation: The canal is 54 years old and therefore does not currently fall under the ambit of the Act (25 of 1999) which automatically protects structures and features older than 60 years (section 34 of the Act). It should however be noted that it is fast approaching the 60 year mark. Given its well documented origin and the drive behind its construction it is regarded as having high heritage value for the town and surrounding farming community. Current or imminent impacts should be kept minimal or avoided at best. A 20 meter buffer zone is recommended to minimize impact. If the canal or a section thereof will be negatively impacted upon, pre-emptive mitigation is recommended.



View north-east

5.1.4. Site MAL 4

Location: See Appendix B and D (fig. 4, 5)

Description: A small graveyard is located here with at least 6 graves. Only one grave is clearly marked with a headstone and inscription: “Mkhabela, Adam/T. 1976-01-20 – 03-04-01”. It is located very near the current railway.

Impact of the proposed development/ activity: It is possible that the gravesite may be impacted upon by the proposed road construction/ expansion.

Recommendation: It is recommended that the graveyard be fenced prior to any construction activity in order to protect the graves. Any surviving relatives should be allowed access. If this is not possible, heritage legislation guides alternative options. The Human Tissues Act 65 of 1983 applies to graves younger than 60 years. Graves which are older than 60 years are protected under section 36 of the NHRA (25 of 1999) and therefore a permit must be issued by SAHRA before the graves may be relocated or exhumed. A buffer zone of at least 20 meters is recommended to minimize impact.



View north-east

5.1.5. Site MAL 5

Location: See Appendix B and D (fig. 6)

Description: A concrete irrigation canal or furrow. Evidence suggests that this canal system was constructed in 1966/7. It is located close to the existing railway line.

Impact of the proposed development/ activity: It is possible that the canal may be impacted upon by the proposed road construction/ expansion.

Recommendation: The canal is 54 years old and therefore does not currently fall under the ambit of the Act (25 of 1999) which automatically protects structures and features older than 60 years (section 34 of the Act). It should however be noted that it is fast approaching the 60 year mark. Given its well documented origin and the drive behind its construction it is regarded as having high heritage value for the town and surrounding farming community. Current or imminent impacts should be kept minimal or avoided at best. A 20 meter buffer zone is recommended to minimize impact. If the canal or a section thereof will be negatively impacted upon, pre-emptive mitigation is recommended.



View north

5.1.6. Site MAL 6

Location: See Appendix B and D (fig. 7)

Description: A few collapsed stones suggesting that demolished dwelling was located here.

Impact of the proposed development/ activity: It is possible that the site may be impacted upon by the proposed road construction/ expansion.

Recommendation: The site is located within a dense thicket close-by and north of the existing N4 road. It is clear that some sort of dwelling which is now demolished, was here. It may have served as farm workers quarters. It is possible that unmarked graves are located in the immediate vicinity of the demolished structure. A buffer of 20 meters is recommended in order to safeguard against impact on possible unmarked graves.



View north-west

5.1.7. Site MAL 7

Location: See Appendix B and D (fig. 8)

Description: A formal large graveyard known as the Malelane Regional Graveyard.

Impact of the proposed development/ activity: The graveyard is clearly fenced off and not close to the proposed alignment for road expansion. No impact is expected.

Recommendation: The proposed activities will not negatively impact on the graveyard. It is recommended that any proposed construction or expansion activity be outside a minimum buffer zone of 20 meters around the graveyard. No additional recommendations.



View south

5.1.8. Site MAL 8

Location: See Appendix B and D (fig. 9)

Description: This is a location pointed out by informant Mr Hennie Botes who claims that long ago a number of people were buried under the large wild fig trees here. After extensive inspection, no grave dressings could be located here.

Impact of the proposed development/ activity: The alignment of the proposed roads to be expanded or constructed does not reach to this spot which is located on the north-western boundary of the town.

Recommendation: Although no grave dressings could be located at this spot, it is recommended that no construction or earth-moving activity be conducted here in an effort to prevent any damage to unmarked graves or human remains. A 20 meter buffer zone is recommended to minimize impact and fencing of the area.



View north-east

5.1.9. Site MAL 9

Location: See Appendix B and D (fig. 10)

Description: A concrete irrigation canal or furrow. Evidence suggests that this canal system was constructed in 1966/7. It is located close to the existing railway line.

Impact of the proposed development/ activity: It is possible that the canal may be impacted upon by the proposed road construction/ expansion.

Recommendation: The canal is 54 years old and therefore does not currently fall under the ambit of the Act (25 of 1999) which automatically protects structures and features older than 60 years (section 34 of

the Act). It should however be noted that it is fast approaching the 60 year mark. Given its well documented origin and the drive behind its construction it is regarded as having high heritage value for the town and surrounding farming community. Current or imminent impacts should be kept minimal or avoided at best. A buffer zone is recommended to minimize impact. If the canal or a section thereof will be negatively impacted upon, pre-emptive mitigation is recommended.



View east

5.1.10. Site MAL 10

Location: See Appendix B and D (fig. 11)

Description: A concrete irrigation canal or furrow. Evidence suggests that this canal system was constructed in 1966/7. It is located close to the existing railway line.

Impact of the proposed development/ activity: It is possible that the canal may be impacted upon by the proposed road construction/ expansion.

Recommendation: The canal is 54 years old and therefore does not currently fall under the ambit of the Act (25 of 1999) which automatically protects structures and features older than 60 years (section 34 of the Act). It should however be noted that it is fast approaching the 60 year mark. Given its well documented origin and the drive behind its construction it is regarded as having high heritage value for the town and surrounding farming community. Current or imminent impacts should be kept minimal or avoided at best. A buffer zone is recommended to minimize impact. If the canal or a section thereof will be negatively impacted upon, pre-emptive mitigation is recommended.



View west

Survey orientations:

5.1.11. Site SO 1.

Location: Survey orientation.

Description: Survey orientation location, eastern side.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view north-east

5.1.12. Site SO 2.

Location: Survey orientation.

Description: Survey orientation location in road reserve south of the N4.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view southwest

5.1.13. Site SO 3.

Location: Survey orientation.

Description: Survey orientation location south of the N4.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view north-east

5.1.14. Site SO 4.

Location: Survey orientation.

Description: Survey orientation location south of the N4.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view north east

5.1.15. Site SO 5.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view south west

5.1.16. Site SO 6.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view north

5.1.17. Site SO 7.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view north east

5.1.18. Site SO 8.

Location: Survey orientation location.

Description: Survey orientation location north of the N4

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view east

5.1.19. Site SO 9.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north east

5.1.20. Site SO 10.

Location: Survey orientation location.

Description: Survey orientation location south of the N4

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View west

5.1.21. Site SO 11.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north

5.1.22. Site SO 12.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View east

5.1.23. Site SO 13.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View east

5.1.24. Site SO 14.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View west

5.1.25. Site SO 15.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View west

5.1.26. Site SO 16.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View east

5.1.27. Site SO 17.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View south

5.1.28. Site SO 18.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north

5.1.29. Site SO 19.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north

5.1.30. Site SO 20.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View east

5.1.31. Site SO 21.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north

5.1.32. Site SO 22.

Location: Survey orientation location.

Description: Survey orientation location south of the N4.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View west

5.1.33. Site SO 23.

Location: Survey orientation location.

Description: Survey orientation location north of the N4.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View east

5.1.34. Site SO 24.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north west

5.1.35. Site SO 25.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View south

5.1.36. Site SO 26.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View south west

5.1.37. Site SO 27.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View west

5.1.38. Site SO 28.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View west

5.1.39. Site SO 29.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View east

5.1.40. Site SO 30.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north

5.1.41. Site SO 31.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View east

5.1.42. Site SO 32.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View west

5.1.43. Site SO 33.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north

5.1.44. Site SO 34.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north

5.1.45. Site SO 35.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View west

5.1.46. Site SO 36.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View west

5.1.47. Site SO 37.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north-east

5.1.48. Site SO 38.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View south-east

5.1.49. Site SO 39.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View east

5.1.50. Site SO 40.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View south

5.1.51. Site SO 41.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View south

5.1.52. Site SO 42.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View north west

5.1.53. Site SO 43.

Location: Survey orientation location.

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



View west

TABLE 5.3. General description of located sites and field rating.

Site No.	Description	Type of significance	Degree of significance	NHRA heritage resource & rating
MAL 1	Roadside marker	Social	Archaeological: N/A Historic: N/A	None GP B
MAL 2	Water canal	Structures (section 34)	Archaeological: N/A Historic: N/A	Structures (section 34); GP B
MAL 3	Water canal	Structures (section 34)	Archaeological: N/A Historic: N/A	Structures (section 34); GP B
MAL 4	Graves	Graves & burial grounds (section 36)	Archaeological: N/A Historic: N/A	Graves & burial grounds (section 36); GP A
MAL 5	Water canal	Structures (section 34)	Archaeological: N/A Historic: N/A	Structures (section 34); GP B
MAL 6	Ruins	Structures (section 34)	Archaeological: N/A Historic: N/A	Structures (section 34); GP B
MAL 7	Graves	Graves & burial grounds (section 36)	Archaeological: N/A Historic: N/A	Graves & burial grounds (section 36); GP A
MAL 8	Graves	Graves & burial grounds (section 36)	Archaeological: N/A Historic: N/A	Graves & burial grounds (section 36); GP A
MAL 9	Water canal	Structures (section 34)	Archaeological: N/A Historic: N/A	Structures (section 34); GP B
MAL 10	Water canal	Structures (section 34)	Archaeological: N/A Historic: N/A	Structures (section 34); GP B
SO1 - SO43	Survey orientation locations	N/A	Archaeological: N/A Historic: N/A	None

TABLE 5.4. Site condition assessment and management recommendations.

Site no.	Type of Heritage resource	Integrity of cultural material	Preservation condition of site	Relative location	Quality of archaeological/ historic material	Quantity of site features	Recommended conservation management
MAL 1	Roadside marker	N/A	Good	Malelane 389 JU	N/A	1	None
MAL 2	Structures	Good	Fair	Malelane 389 JU	Good	1	Buffer zone
MAL 3	Structures	Good	Fair	Malelane 389 JU	Good	1	Buffer zone
MAL 4	Graves	Fair	Poor	Malelane 389 JU	Fair	6	Buffer zone, fence
MAL 5	Structures	Poor	Fair	Malelane 389 JU	Poor	1	Buffer zone
MAL 6	Structures	Poor	Poor	Malelane 389 JU	Poor	1	Buffer zone
MAL 7	Graves	Good	Good	Malelane 389 JU	Good	>20	None. Already fenced
MAL 8	Graves	Poor	Poor	Malelane 389 JU	Poor	Not known	Buffer zone, fence
MAL 9	Structures	Good	Fair	Malelane 389 JU	Good	1	Buffer zone
MAL10	Structures	Good	Fair	Malelane 389 JU	Good	1	Buffer zone
SO1 – SO43	N/A	N/A	N/A	Malelane 389 JU	Archaeology: N/A Historically: N/A	-	N/A

TABLE 5.5. Significance Rating Scales of Impact on heritage resources

Site No.	Nature of impact	Type of site	Extent	Duration	Intensity	Probability	Score total
MAL 1	Road construction	Road marker	Site	Short term	Low	Possible	3
MAL 2	Road construction	Canal	Site	Short term	Low	Possible	3
MAL 3	Road construction	Canal	Site	Short term	Low	Possible	3
MAL 4	Road construction	Graves	Site	Short term	Moderate	Possible	4
MAL 5	Road construction	Canal	Site	Short term	Low	Possible	3
MAL 6	Road construction	Ruins	Site	Short term	Low	Possible	3
MAL 7	Road construction	Graves	Site	Short term	Low	Possible	3
MAL 8	Road construction	Graves	Site	Short term	Low	Possible	3
MAL 9	Road construction	Canal	Site	Short term	Low	Possible	3
MAL 10	Road construction	Canal	Site	Short term	Low	Possible	3
SO1-SO43	Road construction	N/A	N/A	Short term	Low	Improbable	2

***Notes:** Short term ≥ 5 years, Medium term 5-15 years, Long term 15-30 years, Permanent 30+ years

Intensity: Very High (4), High (3), Moderate (2), Low (1)

Probability: Improbable (1), Possible (2), Highly probable (3), Definite (4)

TABLE 5.6. Site current status and future impact scores

Site No.	Current Status	Low impact (4-6 points)	Medium impact (7-9 points)	High impact (10-12 points)	Very high impact (13-16 points)	Score Total
MAL 1	Neutral	-	7	-	-	7
MAL 2	Neutral	5	-	-	-	5
MAL 3	Neutral	5	-	-	-	5
MAL 4	Neutral		7	-	-	7
MAL 5	Neutral	5	-	-	-	5
MAL 6	Neutral	5	-	-	-	5
MAL 7	Neutral	4	-	-	-	4
MAL 8	Neutral	5	-	-	-	5
MAL 9	Neutral	5	-	-	-	5
MAL 10	Neutral	5	-	-	-	5
SO1 – SO43	Neutral	-	-	-	-	-

5.2. Cumulative impacts on the heritage landscape

Cumulative impacts can occur when a range of impacts which result from several concurrent processes have impact on heritage resources. The importance of addressing cumulative impacts is that the total impact of several factors together is often greater than one single process or activity that may impact on heritage resources. The sites where graves were documented (sites MAL 4 and 7 and 8) are sensitive to any type of negative impact and therefore it is recommended that a buffer zone of at least 20 meters around each site is to be provided for in order to minimize any impacts. The sites where the water canal was documented (sites MAL 2, 3, 5, 9 and 10) should also have a buffer zone around it to minimize any negative impact. At sites MAL 1 and 6 a buffer zone is also recommended to minimize impact.

6. Summary of findings and recommendations

Sites of social and heritage significance totalling ten in number were documented. This includes a roadside marker for a deceased motorist (site MAL 1), remains of demolished dwellings (site MAL 6) a water furrow for irrigation (sites MAL 2, 3, 5, 9 and 10) two formal graveyards (sites MAL 4 and 7) and a single identified burial area (MAL 8).

A total of forty three survey orientation locations were documented, sites SO 1-43 which includes a GPS location and photographs of the landscape at that particular location. These were recorded alongside the identified routes sections for the project (see Appendix C maps and Appendix D photos).

In terms of section 34 of the National Heritage Resources Act (NHRA, 25 of 1999), an historic water furrow was located but it is not older than 60 years (currently 53 years old). It is approaching 60 years and will then be within the ambit of the Act.

In terms of section 35 of the NHRA, no archaeological remains were located.

In terms of section 36 of the NHRA, three grave sites were located.

It is not within the expertise of this report or the surveyor to comment on possible palaeontological remains which may be located in the study area. The bulk of archaeological remains are normally located beneath the soil surface. It is therefore possible that some significant cultural material or remains were not located during this survey and will only be revealed when the soil is disturbed. Should excavation or large scale earth moving activities reveal any human skeletal remains, broken pieces of ceramic pottery, large quantities of sub-surface charcoal or any material that can be associated with previous occupation, a qualified archaeologist should be notified immediately. This will also temporarily halt such activities until an archaeologist has assessed the situation. It should be noted that if such a situation occurs it may have further financial implications.

6.1. Recommended management measures

Management objectives include not to impact on any sites of heritage significance. Monitoring programmes which should be followed when a “chance find” of a heritage object or human remains occur, include the following:

- The contractors and workers should be notified that archaeological sites might be exposed during the construction work.
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;

- All discoveries shall be reported immediately to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999).

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Appendix A

Terminology

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

“Archaeological” means –

- Material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artifacts, human and hominid remains and artificial features or 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 which is older than 100 years, including any area within 10m 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 maritime 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 artifacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and
- Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found;

“Conservation”, in relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance;

“Cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance;

“Development” means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including

–

- construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
- constructing or putting up for display signs or hoardings;

- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil;

“Expropriate” means the process as determined by the terms of and according to procedures described in the Expropriation Act, 1975 (Act No. 63 of 1975);

“Foreign cultural property”, in relation to a reciprocating state, means any object that is specifically designated by that state as being of importance for archaeology, history, literature, art or science;

“Grave” means a place of internment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place;

“Heritage resource” means any place or object of cultural significance;

“Heritage register” means a list of heritage resources in a province;

“Heritage resources authority” means the South African Heritage Resources Agency, established in terms of section 11, or, insofar as this Act (25 of 1999) is applicable in or in respect of a province, a provincial heritage resources authority (PHRA);

“Heritage site” means a place declared to be a national heritage site by SAHRA or a place declared to be a provincial heritage site by a provincial heritage resources authority;

“Improvement” in relation to heritage resources, includes the repair, restoration and rehabilitation of a place protected in terms of this Act (25 of 1999);

“Land” includes land covered by water and the air space above the land;

“Living heritage” means the intangible aspects of inherited culture, and may include –

- cultural tradition;
- oral history;
- performance;
- ritual;
- popular memory;
- skills and techniques;
- indigenous knowledge systems; and
- the holistic approach to nature, society and social relationships;

“Management” in relation to heritage resources, includes the conservation, presentation and improvement of a place protected in terms of the Act;

“Object” means any moveable property of cultural significance which may be protected in terms of any provisions of the Act, including –

- any archaeological artifact;
- palaeontological and rare geological specimens;
- meteorites;
- other objects referred to in section 3 of the Act;

“Owner” includes the owner’s authorized agent and any person with a real interest in the property and –

- in the case of a place owned by the State or State-aided institutions, the Minister or any other person or body of persons responsible for the care, management or control of that place;
- in the case of tribal trust land, the recognized traditional authority;

“Place” includes –

- 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;

“Site” means any area of land, including land covered by water, and including any structures or objects thereon;

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

Appendix B

List of sites and survey orientation locations

A total of ten sites were recorded and a total of 43 survey orientation sites were recorded. The sites were named MAL 1-10 and the survey orientation points were named SO1-43.

Table A. Site Locations.

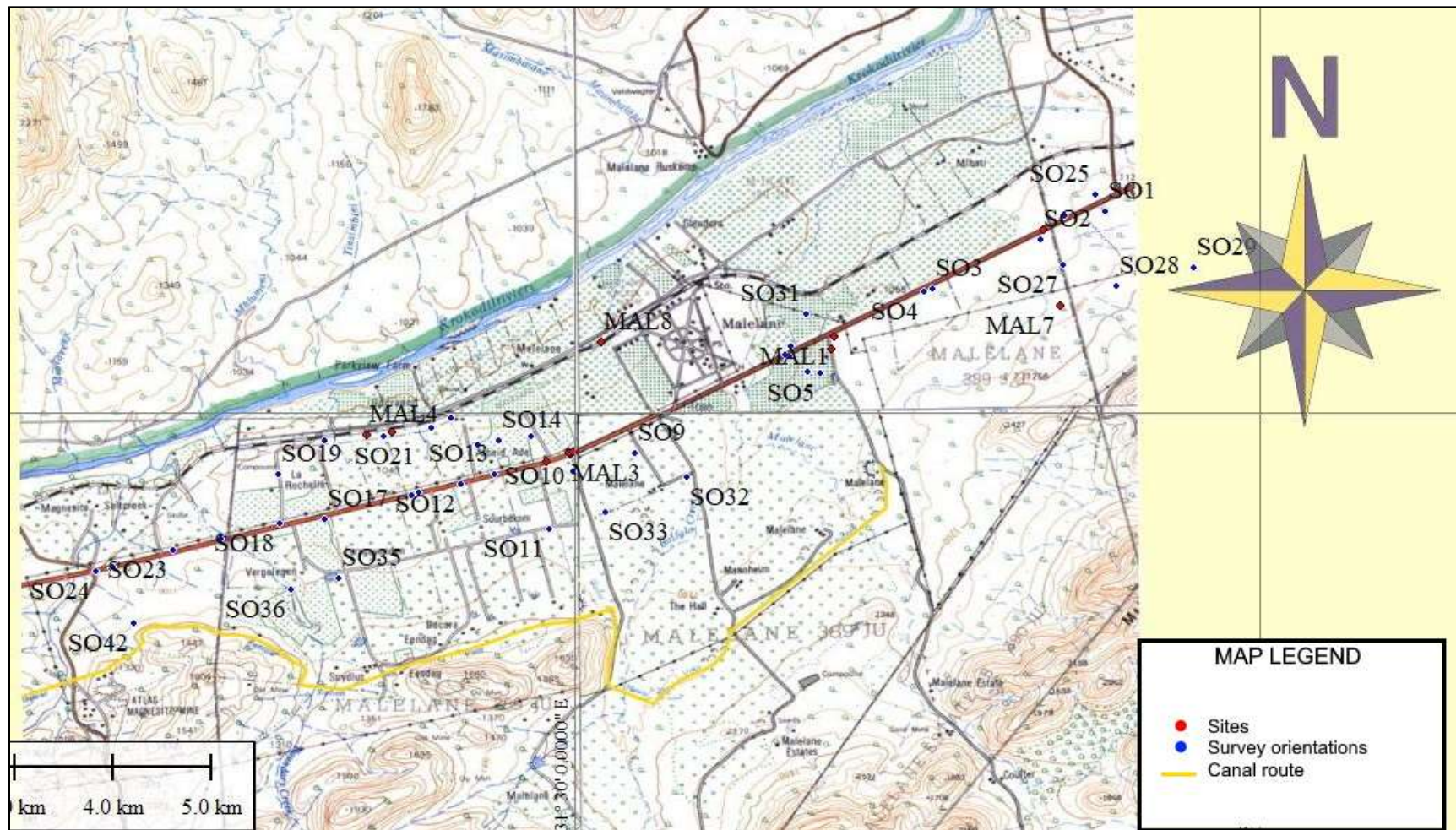
Site Name	Date of compilation	GPS Coordinates		Photo figure No.
MAL 1	16/09/2020	S25°29'34,84"	E031°31'25,22"	1
MAL 2	16/09/2020	S25°29'39,30"	E031°31'24,13"	2
MAL 3	16/09/2020	S25°30'13,51"	E031°29'58,08"	3
MAL 4	16/09/2020	S25°30'07,48"	E031°28'51,48"	4, 5
MAL 5	16/09/2020	S25°30'06,31"	E031°28'59,71"	6
MAL 6	29/09/2020	S25°28'59,85"	E031°32'33,90"	7
MAL 7	29/09/2020	S25°29'24,80"	E031°32'39,30"	8
MAL 8	29/09/2020	S25°29'36,90"	E031°30'08,45"	9
MAL 9	29/09/2020	S25°30'15,98"	E031°29'50,67"	10
MAL 10	29/09/2020	S25°30'12,96"	E031°29'59,22"	11

Table B. Survey Orientation Locations.

Site Name	Date of compilation	GPS Coordinates		Photo figure No.
SO 1	16/09/2020	S25°28'53,88"	E031°32'54,40"	See section 5.1
SO 2	16/09/2020	S25°29'03,13"	E031°32'32,98"	See section 5.1
SO 3	16/09/2020	S25°29'19,47"	E031°31'57,59"	See section 5.1
SO 4	16/09/2020	S25°29'20,33"	E031°31'54,62"	See section 5.1
SO 5	16/09/2020	S25°29'47,16"	E031°31'20,46"	See section 5.1
SO 6	16/09/2020	S25°29'46,79"	E031°31'16,41"	See section 5.1
SO 7	16/09/2020	S25°29'41,48"	E031°31'10,25"	See section 5.1
SO 8	16/09/2020	S25°29'40,86"	E031°31'08,94"	See section 5.1
SO 9	16/09/2020	S25°30'13,50"	E031°30'19,68"	See section 5.1
SO 10	16/09/2020	S25°30'14,27"	E031°29'58,33"	See section 5.1
SO 11	16/09/2020	S25°30'38,45"	E031°29'51,26"	See section 5.1
SO 12	16/09/2020	S25°30'23,62"	E031°29'22,38"	See section 5.1
SO 13	16/09/2020	S25°30'20,18"	E031°29'33,30"	See section 5.1
SO 14	16/09/2020	S25°30'09,15"	E031°29'34,88"	See section 5.1
SO 15	16/09/2020	S25°30'26,11"	E031°29'08,60"	See section 5.1
SO 16	16/09/2020	S25°30'27,32"	E031°29'06,07"	See section 5.1
SO 17	16/09/2020	S25°30'35,01"	E031°28'37,72"	See section 5.1
SO 18	16/09/2020	S25°30'36,58"	E031°28'22,77"	See section 5.1
SO 19	16/09/2020	S25°30'20,10"	E031°28'22,27"	See section 5.1
SO 20	16/09/2020	S25°30'09,32"	E031°28'37,55"	See section 5.1
SO 21	16/09/2020	S25°30'07,63"	E031°28'57,24"	See section 5.1
SO 22	16/09/2020	S25°30'41,73"	E031°28'03,53"	See section 5.1
SO 23	16/09/2020	S25°30'45,38"	E031°27'47,63"	See section 5.1
SO 24	16/09/2020	S25°30'52,29"	E031°27'22,44"	See section 5.1
SO 25	29/09/2020	S25°28'48,27"	E031°32'51,18"	See section 5.1
SO 26	29/09/2020	S25°28'55,36"	E031°32'40,97"	See section 5.1
SO 27	29/09/2020	S25°29'11,46"	E031°32'40,21"	See section 5.1
SO 28	29/09/2020	S25°29'18,55"	E031°32'57,78"	See section 5.1
SO 29	29/09/2020	S25°29'12,53"	E031°33'23,14"	See section 5.1

SO 30	29/09/2020	S25°29'38,46"	E031°31'10,74"	See section 5.1
SO 31	29/09/2020	S25°29'27,46"	E031°31'15,86"	See section 5.1
SO 32	29/09/2020	S25°30'21,11"	E031°30'36,89"	See section 5.1
SO 33	29/09/2020	S25°30'32,78"	E031°30'10,12"	See section 5.1
SO 34	29/09/2020	S25°30'19,22"	E031°29'59,30"	See section 5.1
SO 35	29/09/2020	S25°30'54,64"	E031°28'42,38"	See section 5.1
SO 36	29/09/2020	S25°30'58,15"	E031°28'26,46"	See section 5.1
SO 37	29/09/2020	S25°30'04,91"	E031°29'12,55"	See section 5.1
SO 38	29/09/2020	S25°30'01,94"	E031°29'18,96"	See section 5.1
SO 39	29/09/2020	S25°30'10,55"	E031°29'27,83"	See section 5.1
SO 40	29/09/2020	S25°30'07,77"	E031°29'45,47"	See section 5.1
SO 41	29/09/2020	S25°30'51,10"	E031°27'27,63"	See section 5.1
SO 42	29/09/2020	S25°31'09,27"	E031°27'34,94"	See section 5.1
SO 43	29/09/2020	S25°30'50,93"	E031°27'27,88"	See section 5.1

Appendix C



Topographical Map 1:50 000 Merged 2531 BC (1984); 2531 CB (1984) and 2431 DA (1984).



Aerial view: Google Earth 2020. Sites MAL 1-10



Aerial view: Google Earth 2020. Survey orientation sites SO 1-43.



Aerial view: Google Earth 2020. Sites, survey orientations and survey tracks.

Appendix D

Site Photos



Fig. 1. Site MAL 1. Photo taken in a southern direction. A roadside marker probably indicating a road accident.



Fig. 2. Site MAL 2. Photo taken in a south-eastern direction. A section of the irrigation canal.



Fig. 3. Site MAL 3. A section of the irrigation canal. Photo taken in a south western direction.



Fig. 4. Site MAL 4. Photo taken in a north-eastern direction. There are at least six graves located here. Only one has a headstone.



Fig. 5. Site MAL 4. Photo taken in a south western direction. There are at least six graves located here.



Fig. 6. Site MAL 5. Photo taken in an eastern direction. The white arrow shows the remains of the irrigation canal.



Fig. 7. Site MAL 6. Photo taken in a southern direction. Some of the rocks of a wall which collapsed.



Fig. 8. Site MAL 7. Photo taken in a southern direction. The formal Malalane graveyard.



Fig. 9. Site MAL 8. Photo taken in a southern direction beneath a few large fig trees. No grave dressings could be located here but the informant Mr Botes, indicated that people were buried in this area.



Fig. 10. Site MAL 9. Photo taken in a north eastern direction. The irrigation canal and a pump house is visible.



Fig. 11. Site MAL 10. Photo taken in a western direction. The arrow indicates the location of the water canal a few meters north of the N4 road.