

*SPECIALIST REPORT*

**PHASE 1 ARCHAEOLOGICAL / HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED  
CONSTRUCTION OF A 0.75ML/D WATER TREATMENT PLANT AND BULK LINE ON  
GOVERNMENT LAND (DARDLEA), AT MAKOKO VILLAGE, KABOKWENI, MPUMALANGA  
PROVINCE**

**REPORT PREPARED FOR  
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**NOVEMBER 2017**

**ADANSONIA HERITAGE CONSULTANTS  
ASSOCIATION OF SOUTHERN AFRICAN PROFESSIONAL ARCHAEOLOGISTS**

**REGISTERED WITH SAHRA**

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## **EXECUTIVE SUMMARY**

A Phase 1 Heritage Impact Assessment (HIA) regarding archaeological and other cultural heritage resources was conducted on the footprint for the proposed construction of a Water Treatment Plant and bulk line at Makoko village, Kabokweni on *Government Land (Department of Agriculture, Rural Development, Land and Environmental Affairs, DARDLEA)*.

The scope of the work involves the construction of a 0.75Ml/d Water Treatment Plant as well as a 3.8km pipeline, linking the raw water pumps and water treatment plant. The study area is situated on topographical map 1:50 000, 2531AA KIEPERSOL, which is in the Mpumalanga Province. This area falls under the jurisdiction of the Ehlanzeni District Municipality, and City of Mbombela Local Municipality (the applicant), who work in co-operation with MPG Environmental Consultant (Pty) Ltd.

The National Heritage Resources Act, no 25 (1999)(NHRA), protects all heritage resources, which are classified as national estate. The NHRA stipulates that any person who intends to undertake a development, is subjected to the provisions of the Act.

The proposed reticulation site is located approximately 12km from the R538 regional road, south of the Makoko village in Kabokweni. The route for the bulk line will follow the direction of the Ga-Tshwene stream, from a small dam to the tarred road and uphill towards two existing reservoirs. The line will use an existing culvert under the tarred road to cross to the opposite side. The line will be constructed on vacant land which consists partly of woodland and partly of fallow cultivated sections and a neglected orchard. It will be situated above the 1:50m flood line mark. The study area is currently mainly used by the local community for livestock grazing. The area is currently zoned as agricultural and will not be rezoned. Visibility and accessibility in general was excellent.

No graves, archaeological or historical material, structures or features were observed during the site survey. Quarries and small excavated areas were also studied for any signs of an archaeological nature, but none were found.

It is recommended that the applicant be made aware that distinct archaeological material or human remains may only be revealed during the construction phase. It is recommended that earthmoving activities be monitored by a qualified archaeologist for any possible archaeological sub-surface finds after which an assessment will be made. Based on the survey and the findings in this report, Adansonia Heritage Consultants state that there are no compelling reasons which may prevent the proposed 0.75Ml/d Water Treatment Plant as well as the 3.8km pipeline, to continue.

**Disclaimer:** *Although all possible care is taken to identify all sites of cultural significance during the investigation, it is possible that hidden or sub-surface sites could be overlooked during the study. Christine Rowe trading as Adansonia Heritage Consultants will not be held liable for such oversights or for costs incurred by the client as a result.*

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- 1) The results of the project;*
- 2) The technology described in any report;*
- 3) Recommendations delivered to the Client.*

NOVEMBER 2017

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C. Rowe

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PROVINCE**

**A. BACKGROUND INFORMATION TO THE PROJECT**

The City of Mbombela Municipality, in co-operation with MPG Environmental Consultant (Pty) Ltd, is applying for the construction of a 0.75Ml/d Water Treatment Plant as well as a 3.8km pipeline to serve the Makoko community in Kabokweni, Mpumalanga. (Map 2: Layout Plan).

Adansonia Heritage Consultants were appointed by MPG Environmental Consultant (Pty) Ltd, to conduct a Phase 1 heritage impact assessment (HIA) on archaeological (AIA) and other heritage resources on the study area. A literature study, relevant to the study area as well as a foot survey was done, to determine that no archaeological or heritage resources will be impacted upon. (See Map 3: Topographical Map: 2531AA KIEPERSOL).

The aims of this report are to source all relevant information on archaeological and heritage resources in the study area, and to advise the client on sensitive heritage areas as well as where it is viable for the development to take place in terms of the specifications as set out in the National Heritage Resources Act no., 25 of 1999 (NHRA). Recommendations for maximum conservation measures for any heritage resources will also be made. The study area is indicated in Maps 1 - 7, & Appendix 1 & 2.

- This study forms part of an EIA, Consultant: MPG Environmental Consultant (Pty) Ltd, P.O. Box 293, Ngodwana, 1209. Tel: 079 651 2670 / Fax: 086 572 4949 / e-mail: [mpendulogama@gmail.com](mailto:mpendulogama@gmail.com); A draft EIA will be available in December 2017.
- Type of development: Construction of a 0.75Ml/d Water Treatment Plant and a 3.8km bulk line near Makoko Village in Kabokweni on *Government Land (DARDLEA)*, Mpumalanga Province.
- The study area consists of natural indigenous woodland and fallow cultivated sections along the Ga-Tshwene stream, crossing a tarred road towards an existing water treatment plant. The route for the bulk line is mostly flat, crossing two drainage lines, and going uphill towards two existing reservoirs. The area is currently zoned as agricultural and no rezoning will take place.
- Location of Province, Magisterial district / Local Authority and Property (farms): The area

falls within the Mpumalanga Province under the jurisdiction of the Ehlanzeni District Municipality and City of Mbombela Local Municipality.

- Land owner: DARDLEA (*Department of Agriculture, Rural Development, Land and Environmental Affairs*).

**Terms of reference:** As specified by section 38 (3) of the NHRA, the following information is provided in this report.

- a) The identification and mapping of heritage resources where applicable;
- b) Assessment of the significance of the heritage resources;
- c) Alternatives given to affected heritage resources by the development;
- d) Plans for measures of mitigation.

**Legal requirements:**

The legal context of the report is grounded in the National Heritage Resources Act no. 25, 1999, as well as the National Environmental Management Act (Act No. 107 of 1998) (NEMA as amended).

- **Section 38 of the NHRA**

This report constitutes a heritage impact assessment investigation linked to the environmental impact assessment required for the development. The proposed development is a listed activity in terms of Section 38 (1) of the NHRA. Section 38 (2) of the NHRA requires the submission of a HIA report for authorisation purposes to the responsible heritage resources agency, (SAHRA).

Heritage conservation and management in South Africa is governed by the NHRA and falls under the overall jurisdiction of the South African Heritage Resources Agency (SAHRA) and its provincial offices and counterparts.

Section 38 of the NHRA requires a Heritage Impact Assessment (HIA) to be conducted by an independent heritage management consultant, for the following development categories:

- The construction of a road, wall, powerline, **pipeline**, canal or similar form of linear development or barrier exceeding 300m in length;
- Any development or other activity which will change the character of a site:
  - exceeding 5000m<sup>2</sup> in extent;
  - the rezoning of a site exceeding 10 000m<sup>2</sup> in extent;

In addition, the new EIA regulation promulgated in terms of NEMA, determines that any environmental report will include cultural (heritage) issues.

The end purpose of this report is to alert the Client, MPG Environmental Consultant (Pty) Ltd as well as the applicant, and interested and affected parties about existing heritage resources that may be affected by the proposed development, and to recommend mitigation measures aimed at reducing the risks of any adverse impacts on these heritage resources. Such measures could include the recording of any heritage buildings or structures older than 60 years prior to demolition, in terms of section 34 of the NHRA and also other sections of this act dealing with archaeological sites, buildings and graves.

The applicant, City of Mbombela Local Municipality, in co-operation with MPG Environmental Consultant (Pty) Ltd, is requesting the construction of the Water Treatment Plant and pipeline to serve the community of Makoko.

Section 2 (xvi) states that a “heritage resource” means any place or object of cultural significance, and in section 2 (vi) that “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. Apart from a heritage report assisting a client to make informed development decisions, it also serves to provide the relevant heritage resources authority with the necessary data to perform their statutory duties under the NHRA. After evaluating the heritage scoping report, the heritage resources authority will decide on the status of the resource, whether the development may proceed as proposed or whether mitigation is acceptable, and whether the heritage resource require formal protection such as a Grade I, II or III, with relevant parties having to comply with all aspects pertaining to such a grading.

- **Section 35 of the NHRA**

Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object. This section may apply to any significant archaeological sites that may be discovered. In the case of such chance finds, the heritage practitioner will assist in investigating the extent and significance of the finds and consult with an archaeologist about further action. This may entail removal of material after documenting the find or mapping of larger sections before destruction. No archaeological material or objects were observed during the survey.

### **Section 36 of the NHRA**

Section 36 of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority. It is possible that chance burials might be discovered during development of the road infrastructure or agricultural activities. This section does not apply since no graves were identified.

- **Section 34 of the NHRA**

Section 34 of the NHRA stipulates that no person may alter, damage, destroy, relocate etc, any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority. This section does not apply since no structure older than 60 years were identified during the survey.

- **Section 37 of the NHRA**

This section deals with public monuments and memorials but does not apply in this report.

- **NEMA**

The regulations in terms of Chapter 5 of the National Environmental Management Act, (107/1998), provides for an assessment of development impacts on the cultural (heritage) and social environment and for specialist studies in this regard.

## **B BACKGROUND TO ARCHAEOLOGY AND HISTORY OF THE STUDY AREA**

- **Literature review, museum databases & previous relevant impact assessments**

The study area on *the Government Land (falling under DARDLEA)*, is located approximately 12km east of the R538 regional road (to White River) turning towards Makoko village. The proposed reticulation site is located approximately 12km from the R538 regional road, south of the village, in Kabokweni.

The wider area is quite rich in archaeological history and the first evidence of ancient mining occurred between 46 000 and 28 500 years ago during the Middle Stone Age. Hematite or red ochre was mined at Dumaneni (near Malelane, approximately 45km south-east of the study area) and is regarded as one of the oldest mines in the world. Iron ore was also mined in the



area, and a furnace as well as iron slag was documented.<sup>1</sup>

Bushman (or San) presence is evident in the area as research by rock art enthusiasts revealed 109 sites in the Kruger National Park,<sup>2</sup> and over 100 rock art sites at Bongani Mountain Lodge and its immediate surrounds<sup>3</sup> (north of the study area), as well as many sites in the Nelspruit, Rocky's Drift and White River. Thirty- one rock art sites were recorded by the author on the Mpumalanga Drakensberg Escarpment. Rock art sites were also recorded in Swaziland.<sup>4 5</sup> The Bushman painters most probably obtained the ochre which was used as a pigment in the paintings, from the Dumaneni ochre mine.<sup>6 7</sup>

History in the wider vicinity is closely connected to the study area and is briefly outlined below. The name Komati appears in historical records for the first time in 1589, in the form *Macomates*. It was recorded by a traveler on board the Portuguese ship Sao Thome, which sailed from Cochin, South India and ran aground on the shores of the *Land of the Makomati*, near Lake Sibayi, in what became known as KwaZulu Natal. The Land of Makomati comprised the entire hinterland as far north as the Limpopo River, as far south as St Lucia, and as far west as the Drakensberg escarpment, therefore the study area is included. It was the trading zone of the Komati gold and ivory traders who had established themselves in Delagoa Bay (which was known up to the 17<sup>th</sup> century as Makomati), long before the arrival of the first Portuguese in 1498.<sup>8</sup>

Primary and secondary sources were consulted to place the surrounding area in an archaeological context. Ethnographical and linguistic studies by early researchers such as Ziervogel and Van Warmelo shed light on the cultural groups living in the area since ca 1600. Historic and academic sources by Meyer, Voight, Bergh, De Jongh, Evers, Myburgh, Thackeray and Van der Ryst were consulted, as well as historic sources (Makhura and Webb).

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<sup>1</sup> Bornman, H., *The Pioneers of the Lowveld*, p. 1.

<sup>2</sup> English, M. Die Rotskuns van die Boesmans in die NKW, in *De Vos Pienaar, U., Neem uit die Verlede*, p. 18-24.

<sup>3</sup> Hampson, et al., The rock art of Bongani Mountain Lodge, *SA Archaeological Bulletin* 57: p. 15.

<sup>4</sup> Rowe, C. 2009. Heritage Management of Archaeological, Historical and Industrial resources on the Blyde River Canyon Nature Reserve, MA dissertation. Pretoria: UP.

<sup>5</sup> Masson, J. 2008. Views from a Swaziland Cave. *The Digging Stick*, Vol. 25 no 1: 1-3.

<sup>6</sup> Bornman, H. *The Pioneers of the Lowveld*, p. 1.

<sup>7</sup> Masson, J. 2008. Views from a Swaziland Cave. *The Digging Stick*, Vol. 25 no 1: 1-3.

<sup>8</sup> Bornman, H., *The Pioneers of the Lowveld*, p. 9.

Primary sources were consulted from the Pilgrim's Rest Museum Archives for a background on the pre-history and history of the study area. Several circular stone-walled complexes and terraces as well as graves have been recorded in the vicinities of Hazyview<sup>9</sup>, Bushbuckridge, Graskop and Sabie. Clay potsherds and upper as well as lower grinders, are scattered at most of the sites.<sup>10</sup> Many of these occur in caves as a result of the Swazi attacks during the 1900's on smaller groups. The topographical map did not show any historical features of interest. The 1926 topographical map of *Komatipoort* revealed no historic black settlements in the immediate area (see Map 4).<sup>11</sup> The study area is situated on a gentle slope towards a low hill. There are small rocky outcrops on the property. No structures or features of significance were identified.

The author was also involved in desktop studies and surveys in the area, such as:

- *Study for the Proposed Eskom Powerlines, Hazyview – Dwarsloop* (2008);
- *Inspection of Umbhaba Stone-walled settlement, Hazyview*, (2001);
- *a Phase 1 Archaeological and Heritage Impact Assessment for 132Kv Powerlines from Kiepersol substation (Hazyview), to the Nwarele substation Dwarsloop* (2002);
- *a Phase 1 Archaeological and Heritage Impact Assessment for a proposed traffic training academy, Calcutta, Mkhuhlu, Bushbuckridge* (2013);
- Phase 1 Archaeological and Heritage Impact Assessment for the proposed *Nkambeni* cemetery in Numbi, Hazyview (2013);
- Phase 1 Archaeological and Heritage Impact Assessment for a *Development on the farm Agricultural Holding no 56 JU, White River* (2013) was done in the wider area;
- Phase 1 Archaeological and Heritage Impact Assessment for proposed *agricultural development on the farm SIERAAD, Komatipoort area*, (2013) revealed one possible Late Stone Age borer which was identified in a soil sample, one meter below the surface;
- Phase 1 AIA / HIA for *proposed debushing of natural land for agricultural use: Portion 10 of the farm Thankerton 175JU, Hectorspruit, Mpumalanga Province* (2013); revealed some Later Stone Age artifacts which were all out of context and a burial site;
- Phase 1 AIA / HIA for the *proposed residential township, Tekwane extension 2, portion 7 of the farm Tekwane 537 JU* (2015). No archaeological material of significance was identified.

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<sup>9</sup> PRMA: Information file 9/2.

<sup>10</sup> D. Ziervogel, *The Eastern Sotho, A Tribal, Historical and Linguistic Survey*, p. 3.

<sup>11</sup> Map: 1920 Topographical Map: Komati Poort no. 22.

- Report on Grave site found at *portion 7 of the farm Tekwane 537 JU, in way of amended Bulk Sewer Pipeline, Kanyamazane, Mpumalanga Province (2017)* – Large graveyard identified.
- Phase 1 AIA / HIA for a *proposed 2ha development of the Masogwaba Youth Development Centre, on the farm Broedershoek 129JU, Msogwaba (2017)*. Only two upper grinders were identified.

The SAHRA database for archaeological and historical impact assessments was consulted and revealed other recent Archaeological Impact assessment reports in the wider area:

- J. Van Schalkwyk: *Proposed new Lebombo Port of Entry and upgrade of Komatipoort railway station between Mpumalanga (SA) and Mozambique (2008)* – Some historic buildings were identified but no archaeological remains;
- A. Van Vollenhoven: *Report on a cultural Heritage Impact Assessment for the proposed Kangwane Antracite Mine, Komatipoort (2012)* – An archaeological site with Middle and Late Stone Age tools were identified as well as some Iron Age artifacts and decorated pottery. Mitigation measures were recommended by exclusion from the development or a Phase 2 study;
- JP Celliers: *Report on Phase 1 Archaeological Impact assessment on erven at Komatipoort 182 JU Extension 4, Komatipoort (2012)* – Revealed two pieces of undecorated sherds of pottery which was of low significance. It was recommended that any earthmoving activities be monitored by a qualified archaeologist.
- A. Van Vollenhoven: *Archaeological Impact Assessment for Border site at Komatipoort (2012)* – Revealed historic remains linked to the Steinaeker's Horse regiment during the South African War.
- A. Van Vollenhoven: *A Report on a basic assessment relating to cultural heritage resources for the proposed ESKOM Tekwane North line and substations, Mupumalanga Province (2013)* – revealed historic remains of low significance and a cemetery.

Very little contemporary research has been done on prehistoric African settlements in the study area. Later Stone Age sites in the Kruger National Park date to the last 2500 years and are associated with pottery and microlith stone tools.<sup>12</sup> The only professionally excavated Early Iron Age site near the area, besides those in the Kruger National Park, was the Plaston site near

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<sup>12</sup> J.S. Bergh (red)., *Geskiedenis Atlas van Suid Afrika: Die vier Noordelike Provinsies*, p. 95.

White River, dating ca 900 AD.<sup>13</sup> No other archaeological excavations have been conducted to date within the study area, which have been confirmed by academic institutions and specialists in the field.<sup>14 15</sup> A stone walled settlement with terracing was recorded by C. Van Wyk (Rowe) close to Hazyview,<sup>16</sup> as well as several which were documented in the southern parts of the Kruger National Park.<sup>17</sup> The southern Kruger Park and Nelspruit / Bongani Nature Reserve areas have an abundance of San rock art sites,<sup>18</sup> as mentioned above, but none were identified in the study area.

Several early ethnographical and linguistic studies by early researchers such as D. Ziervogel and N.J. Van Warmelo, revealed that the study area was mainly inhabited by the Swazi from before the 18<sup>th</sup> century, as well as small groups of Tsonga people (Nhlangu and Tšhangana).<sup>19 20</sup> (See Map 1: 1935: Map of Van Warmelo). When concentrating on ethnographical history, it is important to include a slightly wider geographical area for it to make sense. Van Warmelo based his 1935 survey of *Bantu Tribes of South Africa* on the number of taxpayers in an area. The survey does not include the extended households of each taxpayer, so it was impossible to reliably indicate how many people were living in one area.<sup>21</sup>

The whole district is divided in two, with the Drakensberg Escarpment in the west, and the Low Veld (in which the study area is situated) towards the east. Today, we found that the boundaries of groups are intersected and overlapping.<sup>22</sup> Languages such as Zulu, Xhosa, Swazi, Nhlangu, Nkuna, sePedi, hiPau and seRôka, are commonly spoken throughout this area.<sup>23</sup>

During the middle of the 18<sup>th</sup> century some Sotho and Swazi groups combined under a fighting chief Simkulu. The tribe so formed became known as the BakaNgomane. The principal

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<sup>13</sup>M.M. Van der Ryst., Die Ystertydperk, in J.S. Bergh (red.), *Geskiedenis Atlas van Suid Afrika: Die vier Noordelike Provinsies*. p. 97.

<sup>14</sup>Personal information: Dr. J. Pistorius, Pretoria, 2008-04-17.

<sup>15</sup>Personal information: Dr. MS. Schoeman, University of Pretoria, 2008-03-27.

<sup>16</sup>C. Van Wyk, *Inspection of Umbhaba Stone-walled settlement, Hazyview*, pp. 1-2.

<sup>17</sup>Eloff J.F., Verslag oor Argeologiese Navorsing in die Krugerwildtuin, June / July, 1982.

<sup>18</sup>Hampson, J., et al., The rock art of Bongani Mountain Lodge and its environs, *South African Archaeological Bulletin* 57: pp. 17-28.

<sup>19</sup>N.J. Van Warmelo, *A Preliminary Survey of the Bantu Tribes of South Africa*. pp. 90-92 & 111.

<sup>20</sup>H. S. Webb, The Native Inhabitants of the Southern Lowveld, in *Lowveld Regional Development Association, The South-Eastern Transvaal Lowveld*. p.16.

<sup>21</sup>N.J. van Warmelo, *A Preliminary Survey of the Bantu Tribes of South Africa*, p.9.

<sup>22</sup>N.J. van Warmelo, *A Preliminary Survey of the Bantu Tribes of South Africa*, p. 51.

<sup>23</sup>M. De Jongh (ed)., *Swatini*, p. 21.

settlement of Simkulu was in the vicinity of the confluence of the Crocodile and Komati Rivers. It is believed that the BakaNgomane chiefs were buried there.<sup>24</sup>

The Swazi under Mswati II (1845), commenced on a career of large scale raids, on the prosperous tribal lands to the north of Swaziland. His regiments such as the *Nyatsi* and the *Malelane* brought terror to African homes as far afield as Mozambique.<sup>25</sup> During their northern expansion they forced the local inhabitants out of Swaziland, or absorbed them.<sup>26</sup> There is evidence of resistance, but the Eastern Sotho groups who lived in the northern parts of Swaziland, moved mainly northwards.<sup>27</sup> This appears to have taken place towards the end of the 18<sup>th</sup> century,<sup>28</sup> when these groups fled from Swaziland to areas such as Nelspruit, Bushbuckridge, Klaserie, Blyde River and Komatipoort.<sup>29</sup>

Mswati II built a line of military outposts from west to east of the upper Komati River and the Mlambongwane (Kaap River). At each outpost, he stationed regiments to watch and stop the BaPedi returning to their old haunts.<sup>30</sup>

Shaka in the course of his military actions, came into conflict with Zwide Mkhathswa (1819). Notwithstanding Zwide's numerical superiority, Shaka defeated him. The remnants of Zwide's tribe fled into the Eastern Transvaal where they settled. They ultimately found a new kingdom in Gaza land, which extended from just north of the current Maputo, up the east coast as far as the Zambezi river.<sup>31</sup>

Soshangane was a very powerful chief of the Gaza people, even though he was under the rule of Zwide. Soshangane decided to leave and was given full passage through Swaziland. He passed on his way through the Komati gorge, today known as Komatipoort, taking with him a great booty of cattle and women. Meanwhile more Shangane arrived and by 1896 some 2000 refugees settled between Bushbuckridge and Acornhoek where they are still living today. With the establishment of the Sabie Game Reserve (later known as the Kruger National Park), the

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<sup>24</sup> Bornman H., *The Pioneers of the Lowveld* pp. 10-11.

<sup>25</sup> Bornman H., *The Pioneers of the Lowveld* p 11.

<sup>26</sup> A.C. Myburgh, *The Tribes of Barberton District*, p. 10.

<sup>27</sup> N.J. Van Warmelo, *A Preliminary Survey of the Bantu Tribes of South Africa*. p. 111.

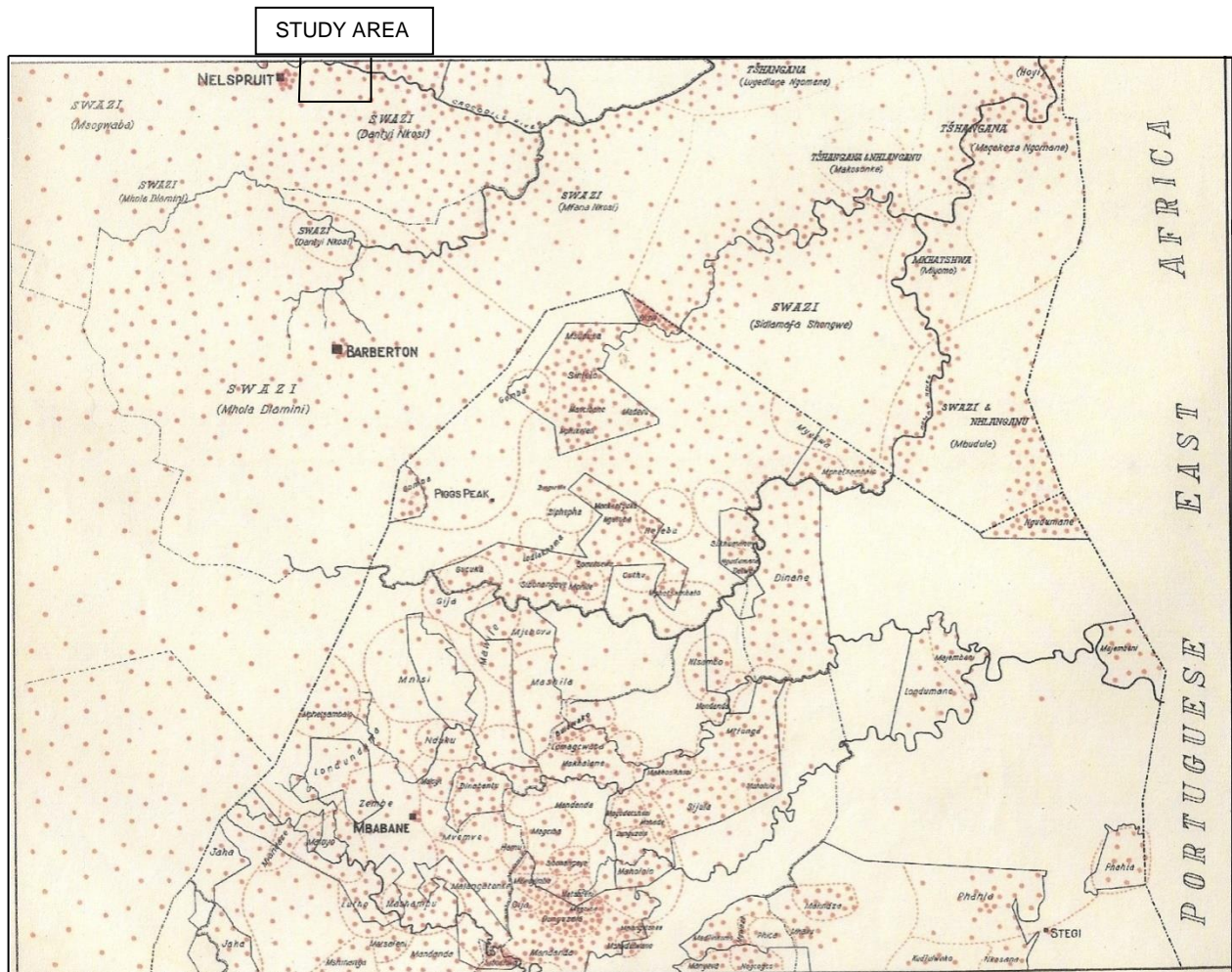
<sup>28</sup> H. S. Webb, *The Native Inhabitants of the Southern Lowveld, in Lowveld Regional Development Association, The South-Eastern Transvaal Lowveld*. p. 14

<sup>29</sup> *Ibid.*, p. 16.

<sup>30</sup> Bornman H., *The Pioneers of the Lowveld* p. 12.

<sup>31</sup> Bornman, H., *The Pioneers of the Lowveld*, p.17.

BakaNgomane, their Shangaan protégés and Swazis who lived within its borders, were evicted in 1902, and went westward into Klaserie and Bushbuckridge areas, or south of the Crocodile River and established themselves in the Tenbosch and Coal Mine (Strijdom Block) areas, west and south of Komatipoort. The Swazi of Khandzalive moved to Mjejane or Emjejane, the current name for Hectorspruit,<sup>32</sup> close to the study area (see also: Map 1: 1935 Map of Van Warmelo).



**MAP 1:** Van Warmelo: 1935: The study area is indicated.

## Swazi

The Swazi people descend from the southern Bantu (Nguni) who migrated from central Africa in the 15<sup>th</sup> and 16<sup>th</sup> centuries.<sup>33</sup> The differences between the Swazi and the Natal Nguni were probably never great, their culture as far as is known from the comparatively little research being carried out, does not show striking differences. Their language is a 'Tekeza' variation of

<sup>32</sup> Bornman, H., *The Pioneers of the Lowveld*, p.19.

<sup>33</sup> <http://en.wikipedia.org/wiki/Swaziland> p.1.

Zulu, but through having escaped being drawn into the mainstream of the Zulus of the *Shaka* period, they became independent and their claim to be grouped apart as a culture is now well founded.<sup>34</sup>

### **Tsonga groups: The Nhlanganu and Tšhangana**

The Nhlanganu and Tšhangana (also generally known as the Shangaan-Tsonga)<sup>35</sup> form part of the larger Tsonga group, who occupied the whole of Mozambique (Portuguese East Africa), and it has been recorded that by 1554, they were already living around the Delagoa Bay area (Maputo).<sup>36</sup> They fled from the onslaughts of the Zulu (Nguni) nation from the Natal area, and great numbers of emigrants sought safety in the “Transvaal” as recently as the 19<sup>th</sup> century, especially in the greater Pilgrim's Rest district (including the study area that we are concerned with). The Tsonga also moved west from Mozambique into the “Transvaal”. They have never formed large powerful tribes but were mostly always subdivided into loosely-knit units, and absorbed under the protection of whichever chief would give them land.<sup>37</sup> They were originally of Nguni origin.<sup>38</sup> The term “Shangaan” is commonly employed to refer to all members of the Tsonga division.<sup>39</sup>

The **Nhlanganu** occupied the Low Veld area in their efforts to escape the Zulu raids during 1835-1840. They lived side by side with the Tšhangana, and the differences between the two are inconsiderable. They have mixed extensively with other tribes.<sup>40</sup>

The **Tšhangana** are also of Nguni origin who fled in the same way as the Nhlanganu, and settled in the “Transvaal” a little later than the former. Most of the Tsonga were subjects to *Soshangane*, who came from Zululand.<sup>41</sup> The downfall of *Ngungunyana* (son of *Soshangane*) saw his son seeking sanctuary in the “Transvaal”, and the latter became known as *Thulamahashi*,<sup>42</sup> the name that is still used for the area east of Bushbuckridge.

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<sup>34</sup> N.J. Van Warmelo, *A Preliminary Survey of the Bantu Tribes of South Africa*, p. 83.

<sup>35</sup> M. De Jongh (ed.), *Swatini*, p. 24.

<sup>36</sup> N.J. Van Warmelo, Grouping and Ethnic History, in *Schapera I., The Bantu-Speaking Tribes of South Africa. An Ethnographical survey*, p. 55.

<sup>37</sup> N.J. Van Warmelo, *A Preliminary Survey of the Bantu Tribes of South Africa*, pp. 90-91.

<sup>38</sup> N.J. Van Warmelo, Grouping and Ethnic History, in *Schapera I., The Bantu-Speaking Tribes of South Africa. An Ethnographical survey*, p. 55.

<sup>39</sup> N.J. Van Warmelo, *A Preliminary Survey of the Bantu Tribes of South Africa*, p. 92

<sup>40</sup> *Ibid.*, pp. 91-92.

<sup>41</sup> N.J. Van Warmelo, Grouping and Ethnic History, in *Schapera I., The Bantu-Speaking Tribes of South Africa. An Ethnographical survey*, p. 57.

<sup>42</sup> N.J. Van Warmelo, *A Preliminary Survey of the Bantu Tribes of South Africa*, p. 92.

The historical background of the study area confirmed that it was occupied since the 17<sup>th</sup> century by the Tsonga groups (Nhlanganu and Tšhangana). These groups have intermarried extensively or were absorbed by other groups in time.<sup>43</sup>

- **History of areas near White River & Nelspruit**

Kabokweni is a town in the Ehlanzeni District of Mpumalanga. It is approximately 8.24kmsq with a population of approximately 22 000 people. It is north of Kanyamazane and located approximately 30km from Nelspruit CBD, and 12 km from White River.<sup>44</sup>

### **C. DESCRIPTION OF THE AREA TO BE AFFECTED BY THE PROPOSED DEVELOPMENT**

The proposed project will involve the construction of a 0.75Ml/d Water Treatment Plant (WTP), as well as a 3.8km pipeline to serve the Makoko community in Kabokweni, Mpumalanga.

The applicant is the City of Mbombela Local Municipality who identified a need to provide additional water to the Makoko community in Kabokweni.<sup>45</sup>

The proposed area for the construction of the water reticulation site and pipeline (linking the raw water pumps and WTP), is located on vacant land which consists partly of woodland and partly of cultivated sections. The line will be situated above the 1:50m flood line mark of the Ga-Tshwene stream, and will start at a small dam in the west. The line will follow in an eastern direction, will cross two drainage lines, and the tarred road at an existing culvert. From there it will follow within the road reserve, uphill towards existing water reservoirs (see Map 2 & 6). An additional WTP will be established at the site.

The study area is currently used by the local community for mainly livestock grazing. The area is zoned as agricultural and will not be rezoned. Technically the ecozone representing this area is referred to as *Mixed bushwillow woodland* on granite. The natural vegetation is characterized by *mixed Lowveld Bushveld* with tall woodland trees such as marula (*Sclerocarya birrea caffra*), Lowveld chestnut (*Sterculia murex*), silver cluster-leaf (*Terminalia sericea*), various Acacia species and South African Wild Pear (*Dombeya rotundifolia*).<sup>46</sup>

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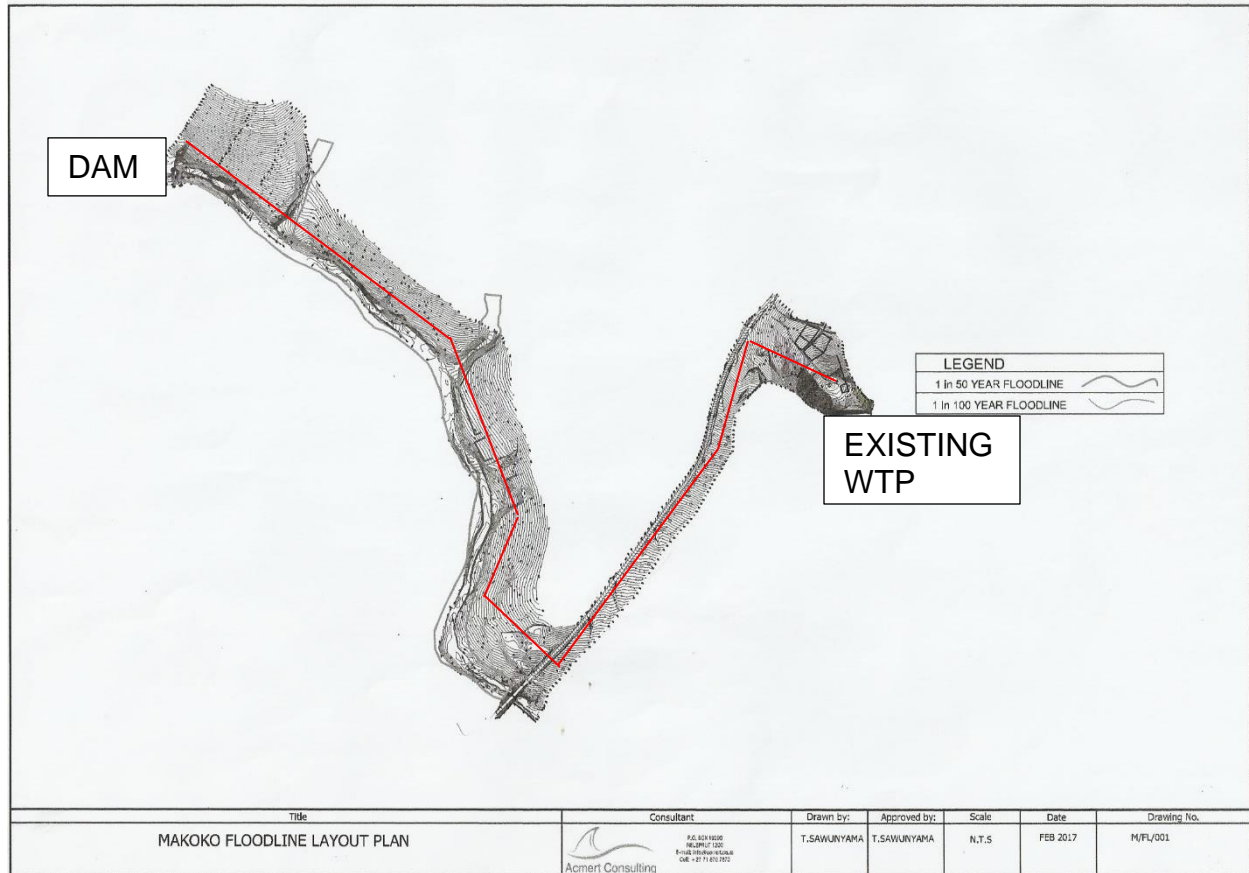
<sup>43</sup>M. De Jongh (ed)., *Swatini*, p. 40.

<sup>44</sup> <https://en.wikipedia.org/wiki/kabokweni> Access 2017-11-04.

<sup>45</sup> ACMERT TRADING ENTERPRISE PTY LTD, *Floodline Assessment Report for the Makoko Reticulation Project*, 17 January 2017.

<sup>46</sup> Van Wyk, B., & Van Wyk P., *Field Guide to Trees of Southern Africa*, 1997





**MAP 2:** Layout of the proposed pipeline (red line), from the Dam to the Reservoir site. (Map by ACMERT Consulting – red line by the author).

The typical granite and dolerite plains have sandy soils and clayey soils in the lower areas.<sup>47 48</sup>  
<sup>49 50</sup> The Kruger National Park is approximately 4 km directly east of the study area. The site is covered by highly compressible soils which overlay the granitic bedrock. It is dominated by sands that can be described as light brown, light orange brown and light reddish brown.<sup>51</sup>

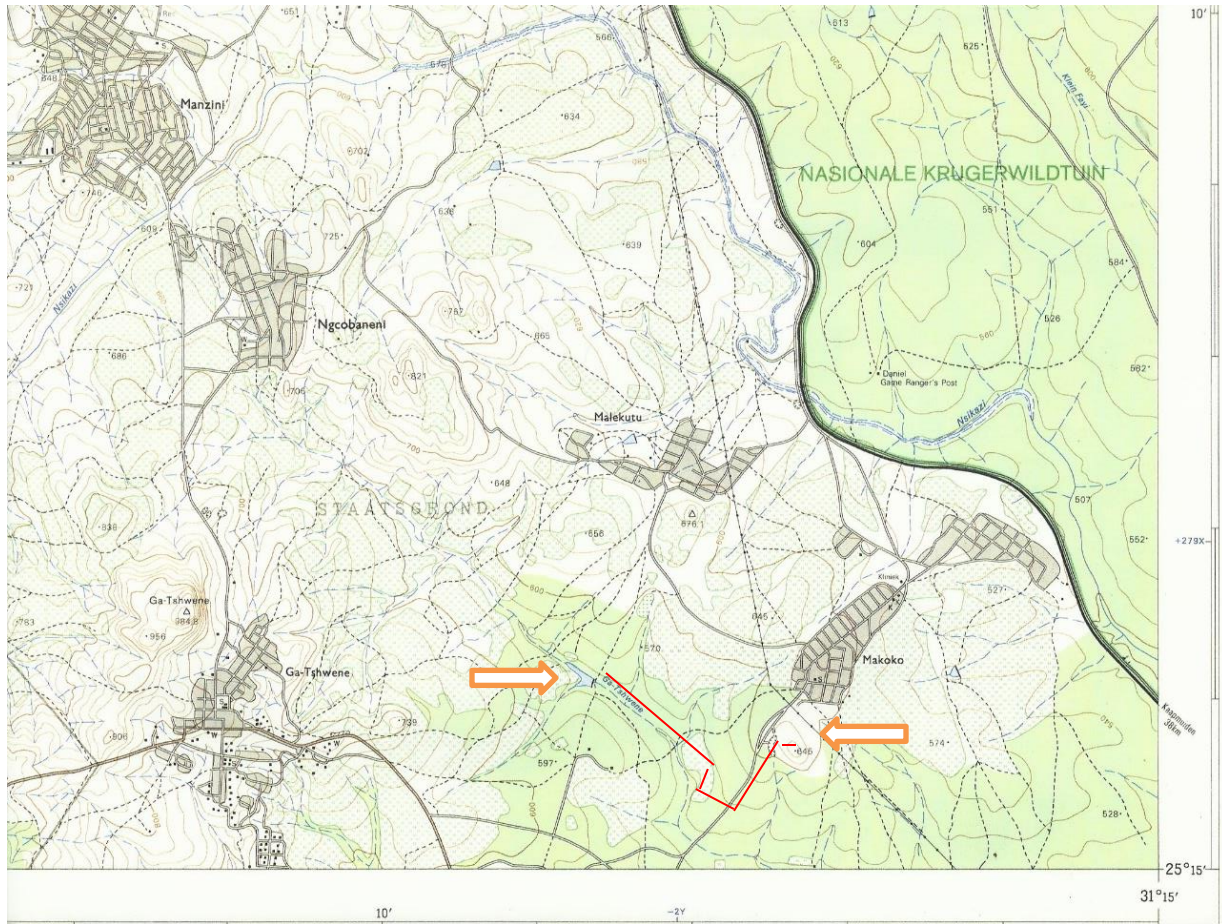
<sup>47</sup> SANPARKS, Visitors Guide to the Kruger National Park, p. 2.

<sup>48</sup> Van Wyk, B., & Van Wyk P., Field Guide to Trees of Southern Africa, 1997, p. 500.

<sup>49</sup> Deacon, A., e-mail access 26-01-14, after (Mucina & Rutherford 2007 & Alcocks 1953).

<sup>50</sup> ACMERT TRADING ENTERPRISE PTY LTD, *Floodline Assessment Report for the Makoko Reticulation Project*, 17 January 2017.

<sup>51</sup> ACMERT TRADING ENTERPRISE PTY LTD, *Floodline Assessment Report for the Makoko Reticulation Project*, 17 January 2017.



**MAP 3:** Topographical Map: 2531AA KIEPERSOL: The route of the pipeline is indicated in red and the arrows indicate the dam (left - start) and reservoir site (right).



MAP 4: 1920 Topographical map: Komatiport): The oval indicates the study area.

#### **D. LOCALITY**

The proposed reticulation site is located approximately 12km from the R538 regional road, south of the Makoko village in Kabokweni.<sup>52</sup> The village is located towards the far eastern section of Kabokweni, approximately 4km from the Kruger National Park (see Maps 5 & 3 – Topographical Map). The route for the bulk line will follow the direction of the Ga-Tshwene stream, from the dam to the tarred road and uphill towards two existing reservoirs. The line will use an existing culvert under the tarred road to cross to the opposite side. The area along the Ga-Tshwene stream (south-eastern direction), is flat (except for two drainage lines) and past the tarred road it turns uphill (north-eastern direction), towards the existing WTP, on a rocky outcrop. The study area is situated on *Government Land belonging to the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA)*.

The 1984 topographical map (2531AC WITRIVIER) was studied and revealed no archaeological or historic features in the area. A 1920 map (Komatipoort) was also studied but no historical or pre-historical settlements were indicated.

The site falls under the City of Mbombela Local Municipal jurisdiction (the applicant), which in turn falls within the Ehlanzeni District Municipality, in the Mpumalanga Province (Maps 3 & 5 & Appendix 2, Figs. 1 – 27 for the study area). The area is currently zoned as agricultural and will not be rezoned.

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<sup>52</sup> ACMERT TRADING ENTERPRISE PTY LTD, *Floodline Assessment Report for the Makoko Reticulation Project*, 17 January 2017.



**MAP 5:** The pipeline route and WTP (yellow line), in the context to the wider area.

#### **Description of methodology:**

The 1984 topographical map, (2531AA: Map 3), as well as a 1920 map (Map 4: KOMATIPOORT), and Google images of the site (Map 5), indicate the study area of the proposed development. These were intensively studied to assess the current and historically disturbed areas and infrastructure. One excavation at the existing WTP, and several quarries were studied for any signs of archaeological material, but none was found (Fig. 3 - 26). In order to reach a comprehensive conclusion regarding the cultural heritage resources in the study area, the following methods were used:

- The desktop study consisted mainly of archival sources studied on distribution patterns of early African groups who settled in the area since the 17<sup>th</sup> century, and which have been observed in past and present ethnographical research and studies.
- Literary sources, books and government publications, which were available on the subject, have been consulted, in order to establish relevant information.
- Specialists currently working in the field of anthropology and archaeology have also been consulted on the subject.

-Literary sources: A list of books and government publications about prehistory and history of the area were cited, and revealed some information;

-The archaeological database of SAHRA as well as the National Cultural History Museum was consulted. Heritage Impact Assessment reports of specialists who worked in the area were studied and are quoted in section B.

- The fieldwork and survey were conducted extensively by two people on foot. Existing tracks and paths were also used to access sections (see Appendix 1).
- The terrain was even and accessible and the grass was short as a result of extensive grazing. Most of the pipeline route was on fallow cultivated lands and a neglected mango orchard. Accessibility was good (see Figs. 1 - 27).
- The relevant data was located with a GPS instrument (Garmin Etrex) datum WGS 84, and plotted. Co-ordinates were within 4-6 meters of identified sites.
- Evaluation of the resources which might be impacted upon by the footprint, was done within the framework provided by the National Heritage Resources Act, no. 25 (1999);
- Personal communication with environmental practitioner Mpendulo Gama was held.<sup>53</sup>

GPS co-ordinates were used to locate the perimeters and any heritage features within the study area (Co-ordinates provided by MPG Environmental Consultant (Pty) Ltd):

<b>GPS CO-ORDINATES</b>		
<b>Location</b>	<b>South</b>	<b>East</b>
A = Start point (Dam)	S 25° 13' 55.30"	E 31° 11' 22.56"
B = Middle point	S 25° 14' 12.26"	E 31° 11' 49.13"
C = Road point	S 25° 14' 45.23"	E 31° 12' 07.42"
D = Reservoir	S 25° 14' 21.02"	E 31° 12' 39.52"

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<sup>53</sup> Personal information: Mpendulo Gama, Nelspruit, 2017-11-03.

**Co-ordinates of the pipeline route (See Map 6):**

Location	South	East	General terrain
1 WTP	25°14'21.06"S	31°12'38.91"E	Rocky outcrop, already disturbed
2	25°14'15.01"S	31°12'29.00"E	Road reserve (disturbed)
3	25°14'48.98"S	31°12'6.67"E	Road reserve & culvert (disturbed)
4	25°14'41.44"S	31°11'58.10"E	Woodland & quarry
5	25°14'33.69"S	31°12'0.74"E	Fallow cultivated lands
6	25°14'30.98"S	31°12'0.19"E	Fallow cultivated lands
7	25°14'24.47"S	31°11'55.59"E	Edge of orchard
8	25°14'19.51"S	31°11'55.62"E	Fallow cultivated land & drainage line
9	25°14'16.75"S	31°11'54.24"E	Fallow cultivated land, sickle bush & woodland
10	25°14'3.65"S	31°11'36.33"E	Edge of drainage line
11	25°14'2.21"S	31°11'33.48"E	Edge of drainage line fallow cultivated land
12	25°13'57.75"S	31°11'27.83"E	Woodland & fallow cultivated land
13 Dam wall	25°13'56.17"S	31°11'21.68"E	Woodland & Dam wall

**E. DESCRIPTION OF IDENTIFIED SITES**

The applicant, City of Mbombela Local Municipality in co-operation with MPG Environmental Consultants (Pty) Ltd, is requesting the construction of a 0.75Ml/d Water Treatment Plant as well as a 3.8km pipeline to serve the Makoko community in Kabokweni (Map 2).

The terrain was even and accessible and visibility was good throughout the survey (see Appendix 2: Fig. 1 – 27). The area is currently vacant consisting of small sections of natural indigenous woodland as well as disturbed fallow cultivated sections along the Ga-Tshwene stream. In some sections (especially the road reserve), the vegetation was dense with plenty of Sickle bush – *Dichrostachys cinerea*, which occurs in the bushveld and is often invasive and thicket forming particularly in disturbed or overgrazed areas.<sup>54</sup> The study area is currently mainly used by the local community for livestock grazing and therefore visibility and accessibility was good. Several paths and tracks were also followed during the survey. The study area was surveyed on foot for any graves or remains of an archaeological or historical nature.

<sup>54</sup> Van Wyk, B., & Van Wyk P., Field Guide to Trees of Southern Africa, 1997, p. 500.

All comments should be studied in conjunction with the maps, figures and appendices, which indicate the study area, and which correspond with the summary below. Photographs in Appendix 2 show the general view of the study area (Fig. 1 & 2). The 1920 topographical map (Map 4) does not indicate any historic or pre-historic settlements directly in or close to the study area, and the 1984 topographical map (Map 3), and historical Google images, indicate the cultivated and woodland sections along the stream as well as the neglected orchard.

**The various points in the pipeline route is discussed below (see Map 6):**

Please note that the pipeline will follow above the 1:50 000 flood line mark and that the soil structure of the entire area is of a light brown sandy nature.

**Point 1:** The pipeline will end at the site where the existing reservoirs are situated and where the new WTP will be established. These are situated on a small hill which has a large rocky outcrop. Sections in this area were already disturbed and excavated and were investigated for possible graves or archaeological / historical material, but none were found. Visibility was excellent (Fig. 3 & 4).

**Point 2: Point 1 to 2:** The pipeline will go downhill from the WTP next to a small access road towards the tarred road and through disturbed woodland vegetation (Figs. 5 – 10). Existing pipelines have disturbed sections in the direct vicinity of the new proposed route. Visibility in this section was good and no graves or archaeological / historical material were observed.

**Point 3: Point 2 to 3** is situated in the road reserve where extensive disturbance has already taken place (with the building of the tarred road). The vegetation in the road reserve varies from medium sized woodland trees as well as invasive sickle bush which is an indicator of previously disturbed areas. The pipeline will cross the tarred road at an existing culvert (**Point 3**) underneath the road (Figs. 11 & 12). Visibility in this section was good and no graves or archaeological / historical material were observed.

**Point 4: Point 3 to 4:** The vegetation in this section (west of the tarred road) is mainly woodland with sickle bush (an indicator of previous disturbances). A large neglected quarry is directly south of the proposed pipeline route. Visibility was good and no graves or archaeological / historical material were observed. (Figs. 13 – 15).



**Point 5: Point 4 to 5:** This section consists of fallow lands which have historically been disturbed (see foreground of the photographs). The hill, where the existing WTP is, is seen on the right (see figs. 16 & 17). Visibility was good and no graves or archaeological / historical material were observed.

**Point 6 - 8: Points 5 to 8:** This section consists of previously disturbed fallow lands (Fig. 18), including a neglected mango orchard where the pipeline route will go through (Fig. 19). It continues and will cross a drainage line (Fig. 20 & 21). Visibility was good and no graves or archaeological / historical material were observed.

**Point 9:** Point 9 is on the opposite side of the drainage line (discussed in the previous point). **Point 9 to 10** consists of previously disturbed fallow land, sickle bush (an indicator of previously disturbed areas), and woodland. See fig. 22, which is facing west. The fallow cultivated land (foreground) and woodland with plenty of sickle bush is visible. This area was largely disturbed, and continues to the edge of another drainage line (**Point 10**) (Fig. 23). Visibility was good and no graves or archaeological / historical material were observed.

**Point 11 to 12: Point 11** start at the edge of the drainage line (see **point 10**), and continues over previously disturbed fallow land which was used for agricultural purposes (Fig. 24). This section continues into woodland on the western side which also has sickle bush in between (Fig. 25). Visibility was good and no graves or archaeological / historical material were observed.

**Point 13: Point 13** is at the Dam wall which forms the starting point of the pipeline route. The Dam is in the Ga-Tshwene catchment (Fig. 26 & 27). Visibility was good and no graves or archaeological / historical material were observed.

No graves or archaeological sites of significance, stone walls, historic structures or features were identified during the entire survey.



**MAP 6:** The route of the proposed pipeline to the Water Treatment Plant (yellow).

**F. DISCUSSION ON THE FOOTPRINT OF THE PROPOSED DEVELOPMENT**

<i>ACT</i>	<i>COMPO- NENT</i>	<i>IMPLICATION</i>	<i>RELEVANCE</i>	<i>COMPLIANCE</i>
NHRA	S 34	Impact on buildings and structures older than 60 years	None present	None
NHRA	S35	Impacts on archaeological and palaeontological heritage resources	None present	None
NHRA	S36	Impact on graves	None present	None
NHRA	S37	Impact on public monuments	None present	None
NHRA	S38	Developments requiring an HIA	Development is a listed activity	HIA done

<b>ACT</b>	<b>COMPONENT</b>	<b>IMPLICATION</b>	<b>RELEVANCE</b>	<b>COMPLIANCE</b>
NEMA	EIA regulations	Activities requiring an EIA	Development is subject to an EIA	HIA is part of EIA

- **Summarised identification and cultural significance assessment of affected heritage resources: General issues of site and context:**

<b>Context</b>		
Urban environmental context	No	NA
Rural environmental context	No	NA
Natural environmental context	No	NA
<b>Formal protection (NHRA)</b>		
(S. 28) Is the property part of a protected area?	No	NA
(S. 31) Is the property part of a heritage area?	No	NA
<b>Other</b>		
Is the property near to or visible from any protected heritage sites	No	NA
Is the property part of a conservation area of special areas in terms of the Zoning scheme?	No	NA
Does the site form part of a historical settlement or townscape?	No	NA
Does the site form part of a rural cultural landscape?	No	NA

<b>Context</b>		
Does the site form part of a natural landscape of cultural significance?	No	NA
Is the site adjacent to a scenic route?	No	NA
Is the property within or adjacent to any other area which has special environmental or heritage protection?	Yes	East: 4km to the Kruger National Park
Does the general context or any adjoining properties have cultural significance?	No	NA

<b>Property features and characteristics</b>		
Have there been any previous development impacts on the property?	No	NA
Are there any significant landscape features on the property?	No	NA
Are there any sites or features of geological significance on the property?	No	NA
Does the property have any rocky outcrops on it?	Yes	Small rocky outcrop occurs only at the WTP
Does the property have any fresh water sources (springs, streams, rivers) on or alongside it?	Yes	The Ga-Tshwene stream and two drainage lines are in the study area

<b><i>Heritage resources on the property</i></b>		
<b><i>Formal protection (NHRA)</i></b>		
National heritage sites (S. 27)	No	NA
Provincial heritage sites (S. 27)	No	NA
Provincial protection (S. 29)	No	NA
Place listed in heritage register (S. 30)	No	NA
<b><i>General protection (NHRA)</i></b>		
Structures older than 60 years (S. 34)	No	NA
Archaeological site or material (S. 35)	No	NA
Palaeontological site or material (S. 35)	No	NA
Graves or burial grounds (S. 36)	No	NA
Public monuments or memorials (S. 37)	No	NA
<b><i>Other</i></b>		
Any heritage resource identified in a heritage survey (author / date / grading)	No	NA
Any other heritage resources (describe)	No	NA

<b>NHRA S (3)2 Heritage resource category</b>	<b>ELE- MENT S</b>	<b>INDICATORS OF HERITAGE SIGNIFICANCE</b>										<b>RISK</b>	
		Hist orica l	Rar e	Sci ent ific	Typi cal	Tech nolo gical	Aes theti c	Pers on / com muni ty	Land mark	Mate rial con ditio n	Sust aina bility		
Buildings / structures of cultural significan ce	No	No	No	No	No	No	No	No	No	No	No	No	-
Areas attached to oral traditions / intangible heritage	No	No	No	No	No	No	No	No	No	No	No	No	-
Historical settlement / townscap es	No	-	-	-	-	-	-	-	-	-	-	-	-
Landscap e of cultural significan ce	No	-	-	-	-	-	-	-	-	-	-	-	-
Geologica l site of scientific/ cultural importanc e	No	-	-	-	-	-	-	-	-	-	-	-	-

<b>NHRA</b>	<b>ELE-</b>	<b>INDICATORS OF HERITAGE SIGNIFICANCE</b>										<b>RISK</b>	
Archaeological / palaeontological sites	No	-	-	-	-	-	-	-	-	-	-	-	-
Grave / burial grounds	No	-	-	-	-	-	-	-	-	-	-	-	-
Areas of significance related to labour history	No	-	-	-	-	-	-	-	-	-	-	-	-
Movable objects	No	-	-	-	-	-	-	-	-	-	-	-	-

- **Summarised recommended impact management interventions**

<b>NHRA S (3)2 Heritage resource</b>	<b>SITE</b>	<b>IMPACT SIGNIFICANCE</b>		<b>Impact management</b>	<b>Motivation</b>
		<b>Cultural significance</b>	<b>Impact significance</b>		
Buildings / structures of cultural significance	No	No	None	-	-
Areas attached to oral traditions / intangible heritage	No	None	None	-	-
Historical settlement/ townscape	No	None	None	-	-

<b>NHRA S (3)2</b>	<b>SITE</b>	<b>IMPACT SIGNIFICANCE</b>		<b>Impact managemen t</b>	<b>Motivation</b>
		<b>Cultural sianificance</b>			
Landscape of cultural significance	No	None	None	-	-
Geological site of scientific/ cultural importance	No	None	None	-	-
Archaeological / palaeontological sites	No	None	None	-	-
Grave / burial grounds	No	No	None	-	-
Areas of significance related to labour history	No	None	None	-	-
Movable objects	No	None	None	-	-

<b>ACT</b>	<b>COMPO- NENT</b>	<b>IMPLICATION</b>	<b>RELEVANCE</b>	<b>COMPLIANCE</b>
NHRA	S 34	Impact on buildings and structures older than 60 years	None present	None



<b>ACT</b>	<b>COMPONENT</b>	<b>IMPLICATION</b>	<b>RELEVANCE</b>	<b>COMPLIANCE</b>
NHRA	S35	Impacts on archaeological and palaeontological heritage resources	None present	None
NHRA	S36	Impact on graves	None present	None
NHRA	S37	Impact on public monuments	None present	None
NHRA	S38	Developments requiring an HIA	Development is a listed activity	Full HIA
NEMA	EIA regulations	Activities requiring an EIA	Development is subject to an EIA	HIA is part of EIA

## **G. STATEMENT OF SIGNIFICANCE & EVALUATION OF HERITAGE RESOURCES**

Section 38 of the NHRA, rates all heritage resources into National, Provincial or Local significance, and proposals in terms of the above is made for all identified heritage features.

### **• Evaluation methods**

Site significance is important to establish the measure of mitigation and / or management of the resources. Sites are evaluated as *HIGH (National importance)*, *MEDIUM (Provincial importance)* or *LOW, (local importance)*, as specified in the NHRA. It is explained as follows:

### **• National Heritage Resources Act**

The National Heritage Resources Act no. 25, 1999 (NHRA) aims to promote good management of the national estate, and to enable and encourage communities to conserve their legacy so that it may be bequeathed to future generations. Heritage is unique and it cannot be renewed, and contributes to redressing past inequities.<sup>55</sup> It promotes previously neglected research areas.

<sup>55</sup>National Heritage Resources Act, no. 25 of 1999. p. 2.

All archaeological and other cultural heritage resources are evaluated according to the NHRA, section 3(3). A place or object is considered to be part of the national estate if it has cultural significance or other special value in terms of:

- (a) its importance in the community, or pattern of South Africa's history;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- (h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.<sup>56</sup>

No graves, archaeological, historical material or structures were observed in the study area which could have been impacted upon by the proposed pipeline development.

## **H. RECOMMENDATIONS & CONCLUSION**

Archaeological material or graves are not always visible during a field survey and therefore some significant material may only be revealed during construction activities of the proposed development.

It is recommended that the applicant should be made aware that distinct archaeological material or human remains may only be revealed during the construction phase. Based on the survey and the findings in this report, Adansonia Heritage Consultants state that there are no compelling reasons which may prevent the proposed construction of the 0.75Ml/d Water Treatment Plant as well as a 3.8km pipeline along the Ga-Tswlene stream near Makoko village, Kabokweni to continue. It is recommended that any earthmoving activities be monitored by a qualified archaeologist and that an assessment and recommendation be done should any archaeological material be found.

**Adansonia Heritage Consultants cannot be held responsible for any archaeological material or graves which were not located during the survey.**

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<sup>56</sup>National Heritage Resources Act, no. 25 of 1999. pp. 12-14

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# APPENDIX 1

## Track and Paths used to access the study area

