

**Prepared for:
ZITHOLELE CONSULTING (PTY) LTD
ESKOM**

**A PHASE I HERITAGE IMPACT ASSESSMENT (HIA)
STUDY FOR THE PROPOSED UPGRADING OF THE
INGULA BRIDGE CROSSING THE BRAAMHOEKSPRUIT
NEAR VAN REENEN IN THE FREE STATE PROVINCE OF
SOUTH AFRICA**

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Executive Summary

A Phase I Heritage Impact Assessment (HIA) study as required in terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999) was done for the proposed upgrading of the Ingula Bridge crossing the Braamhoekspruit near Van Reenen in the Free State Province of South Africa. The aims with the Phase I HIA study were the following:

- To establish whether any of the types and ranges of heritage resources ('national estate') as outlined in Section 3 of the National Heritage Resources Act (Act 25 of 1999) do occur in the proposed Ingula Project Area.
- To determine the significance of these heritage resources and whether they will be affected by the proposed new development and, if so; to propose mitigation measures for those heritage resources that may be affected by the development project.

The Phase I HIA study for the proposed Ingula Project Area revealed none of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999).

There is consequently no reason from a heritage point of view why the proposed upgrading of the Ingula Bridge should not continue.

It is possible that this Phase I HIA study may have missed heritage resources in the Ingula Project Area as heritage remains may occur in thick clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during this development project the South African Heritage Resources Authority (SAHRA) should be notified immediately, all construction activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

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1 INTRODUCTION

Eskom is in the process of constructing the Ingula Pumped-Storage Scheme (PSS) outside Van Reenen in the Free State with the aim of generating additional electricity supply to the national grid. The Ingula PSS comprises an upper and lower reservoir, underground powerhouse complex, waterway tunnels linking the reservoirs with the powerhouse complex, access roads and transmission lines.. The lower reservoir is located on the Braamhoekspruit, a tributary of the Klip River. Approximately two kilometres downstream of the lower reservoir, a gravel road (D474) crosses the Braamhoekspruit *via* the low-laying Ingula Bridge. The Ingula Bridge gets flooded during heavy rains because of its low-level technical design and specification. In order to mitigate this extended period of over-flowing, Eskom is planning to upgrade the Ingula Bridge to a larger bridge with adequate opening to accommodate large flows without over-flowing of the gravel road.

This document therefore contains the report on the results of a Phase I Heritage Impact Assessment (HIA) study which was done for the upgrading of the Ingula Bridge.

Focused archaeological research has been conducted in the Free State Province for more than four decades. This research consists of surveys and of excavations of Stone Age and Iron Age sites as well as of the recording of rock art and historical sites in this area. The Free State Province has a rich heritage comprised of remains dating from the pre-historical and from the historical (or colonial) periods of South Africa. Pre-historical and historical remains in the Free State Province of South Africa form a record of the heritage of most groups living in South Africa today.

Various types and ranges of heritage resources that qualify as part of South Africa's 'national estate' (as outlined in the National Heritage Resources Act [No 25 of 1999]) occur in the Free State Province (see Box 1, next page).

Box 1: Types and ranges of heritage resources (the national estate) as outlined in Section 3 of the National Heritage Resources Act, 1999 (No 25 of 1999).

The National Heritage Resources Act (Act No 25 of 1999, Art 3) outlines the following types and ranges of heritage resources that qualify as part of the National Estate, namely:

- (a) places, buildings structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites;
- (g) 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
 - (vi) other human remains which are not covered by in terms of the Human Tissues Act, 1983 (Act No 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including -
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological 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, photographs, positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

The National Heritage Resources Act (Act No 25 of 1999, Art 3) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value ...'. These criteria are the following:

- (a) its importance in the community, or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; (h)
- (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;
- (i) sites of significance relating to the history of slavery in South Africa

2 AIMS WITH THIS REPORT

Eskom intends to upgrade the Ingula Bridge running across the Braamhoekspruit south of the Ingula Pumped-Storage Scheme near Van Reenen in the Free State Province of South Africa. This development may affect some of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999). Consequently, Zitholele Consulting (Pty) Ltd, the environmental company responsible for compiling the environmental impact assessment report for the development, commissioned the author to undertake a Phase I Heritage Impact Assessment (HIA) study for the proposed new development. The aims with the Phase I HIA were the following:

- To establish whether any of the types and ranges of heritage resources ('national estate') as outlined in Section 3 of the National Heritage Resources Act (Act 25 of 1999) do occur in the proposed Ingula Project Area.
- To determine the significance of these heritage resources and whether they will be affected by the proposed new development and, if so; to propose mitigation measures for those heritage resources that may be affected by the development project.

3 METHODOLOGY

This Phase I HIA study was conducted by means of the following:

- Surveying the proposed Ingula Project Area on foot.
- Briefly surveying literature relating to the pre-historical and historical context of the Ingula Project Area.
- Consulting maps of the proposed Ingula Project Area.
- Consulting archaeological (heritage) data bases.
- Synthesising all information obtained from the data bases, fieldwork, maps and literature survey.

3.1 Fieldwork

The proposed Ingula Project Area was surveyed on foot.

3.2 Databases, literature survey and maps

Databases kept and maintained at institutions such as the Provincial Heritage Resources Agency (PHRA) and the Archaeological Data Recording Centre at the National Museum in Bloemfontein were consulted to determine whether any heritage resources of significance has been identified during earlier heritage surveys in or near the Ingula Project Area.

Literature relating to the pre-historical and the historical unfolding of the region where the Ingula Project Area is located was reviewed (see Part 4.2, 'Contextualising the Ingula Project Area' and Part 6 'Select Bibliography').

It is important to contextualise the pre-historical and historical background of the Ingula Project Area in order to comprehend the identity and meaning of heritage sites in and near the project area.

In addition, the Ingula Project Area was studied by means of maps on which it appears, such as the 1:50 000 topographical map (Besters 2829BC).

3.3 Assumptions and limitations

It is possible that this Phase I HIA study may have missed heritage resources in the Ingula Project Area as heritage sites may occur in clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during exploration or other development activities the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

3.4 Some remarks on terminology

Terms that may be used in this report are briefly outlined in Box 2.

Box 2. Terminologies that may be used in this report

The Heritage Impact Assessment (HIA) referred to in the title of this report includes a survey of heritage resources as outlined in the National Heritage Resources Act, 1999 (Act No 25 of 1999) (See Box 1).

Heritage resources (cultural resources) include all human-made phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

The term 'pre-historical' refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the Ingula Project Area, to the first appearance or use of 'modern' Western writing brought to the Odendaalsrus area by the first Colonists who settled here during the nineteenth century.

The term 'relatively recent past' refers to the 20th century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may, in the near future, qualify as heritage resources.

It is not always possible, based on observations alone, to distinguish clearly between archaeological remains and historical remains, or between historical remains and remains from the relatively recent past. Although certain criteria may help to make this distinction possible, these criteria are not always present, or, when they are present, they are not always clear enough to interpret with great accuracy. Criteria such as square floor plans (a historical feature) may serve as a guideline. However, circular and square floors may occur together on the same site.

The term 'sensitive remains' is sometimes used to distinguish graves and cemeteries as well as ideologically significant features such as holy mountains, initiation sites or other sacred places. Graves in particular are not necessarily heritage resources if they date from the recent past and do not have head stones that are older than sixty years. The distinction between 'formal' and 'informal' graves in most instances also refers to graveyards that were used by colonists and by indigenous people. This distinction may be important as different cultural groups may uphold different traditions and values with regard to their ancestors. These values have to be recognised and honoured whenever graveyards are exhumed and relocated.

The term 'Stone Age' refers to the prehistoric past, although Late Stone Age peoples lived in South Africa well into the historical period. The Stone Age is divided into an Earlier Stone Age (3 million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years to 40 000 years ago) and the Late Stone Age (40 000 years to 200 years ago).

The term 'Iron Age' refers to the last two millennia and 'Early Iron Age' to the first thousand years AD. 'Late Iron Age' refers to the period between the 16th century and the 19th century and can therefore include the historical period.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the pre-historical, historical or the relatively recent past.

The term 'Ingula Project Area' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types of heritage resources in any given area.

Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include the documenting of rock art, engraving or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavations of archaeological sites; the exhumation of bodies and the relocation of graveyards, etc. Phase II work may require the input of specialists and requires the co-operation and approval of SAHRA.

4 THE INGULA PROJECT AREA

4.1 Location

The Ingula Bridge falls within the jurisdiction of the Ladysmith/Emnambithi Local Municipality. The bridge is located on Portion 3 and 4 of Portion 3 of the Farm Trekboer 1002GS and is situated approximately two kilometres to the south of the Ingula Pumped-Storage Scheme near Van Reenen in the Free State Province of South Africa. The site is located within a provincial road reserve and the adjacent land is rural agricultural.

The site falls within the Upper Tugela catchment (Thukela Water Management Area, Tertiary Drainage Region V12). The Tugela River catchment experiences a wide variety of weather conditions ranging from generally wet and cold in the Drakensberg Mountains, to dry and hot in the Tugela Valley from Colenso down towards the coast, and hot and humid and reasonably well watered at the coast.

The region receives most of its rainfall in summer between September and April. Snow falls are common in winter along the Drakensberg Mountain peaks, which melt fairly quickly. The average rainfall ranges from about 1 500 mm per annum in the mountains to about 650 mm per annum in the central parts of the catchment. Annual runoff varies from 600 mm in the Drakensberg to as little as 50 mm in the dry bushveld areas with an estimated natural Mean Annual Runoff (MAR) of 3799 million m³ per annum at the river mouth (Besters 2829BC) (Figures 1 & 2).

4.2 Contextualising the Ingula Project Area

The following is a brief outline of the pre-historical and historical background of the Ingula Project Area with the aim to contextualise any possible heritage resources that may be found in the project area:

The earliest ancestors of modern humans emerged some two to three million years ago. The remains of Australopithecine and Homo habilis have been found in dolomite caves and underground dwellings in places such as Sterkfontein and Swartkrans near Krugersdorp. Homo habilis, one of the Early Stone Age hominids, is associated with Oldowan artefacts, which include crude implements manufactured from large pebbles.

The Acheulian industrial complex replaced the Oldowan industrial complex during the Early Stone Age. This phase of human existence was widely distributed across South Africa and is associated with Homo Erectus, who manufactured hand axes and cleavers from as early as one and a half million years ago. Oldowan and Acheulian artefacts were also found four to five decades ago in some of the older gravels (ancient river beds and terraces) of the Vaal River and the Klip River in Vereeniging. The earliest ancestors of modern man may therefore have roamed the Vaal valley at the same time that their contemporaries occupied some of the dolomite caves near Krugersdorp.

Middle Stone Age sites dating from as early as two hundred thousand years ago have been found all over South Africa. Middle Stone Age hunter-gatherer bands also lived and hunted in the Orange and Vaal River valleys. These people, who probably looked like modern humans, occupied campsites near water but also used caves as dwellings. They manufactured a wide range of stone tools, including blades and points that may have had long wooden sticks as hafts and were used as spears.

The Late Stone Age commenced twenty thousand years ago or somewhat earlier. The various types of Stone Age industries scattered across the country are associated with the historical San and Khoi-Khoi people. The San were renowned as formidable hunter-gatherers, while the Khoi-Khoi herded cattle and small stock during the last two thousand years. Late Stone Age people manufactured tools that were small but highly effective, such as arrow heads and knives.

The Late Iron Age people were also known for their rock art skills.

Early Iron Age farming communities practised a mixed economy, consisting of plant cultivation and stock herding, in the interior of South Africa during the first half of the first millennium A.D. These Bantu-Negroid people, who interbred with the local San and Khoi-Khoi, were ironworkers of some repute and they established the first permanent villages south of the Limpopo River. These communities occupied the savannah of the Limpopo Province as well as the Eastern Lowveld and coastal regions of South Africa. No traces of their existence have as yet been found on the Highveld or in the Free State.

During the Late Iron Age, farming was practised in the northern, central and eastern parts of the country. These farming communities built numerous stone walled settlements throughout the southern Highveld of the Free State, on the Witwatersrand and numerous other places in South Africa from the 17th century onwards. These sites are associated with the predecessors of the Sotho-Tswana. In the Free State these sites are linked with the so-called N-, V-, R- and Z-Type of settlements which are respectively associated with Fokeng, Kwena, Kgatla and Rolong clans.

5 THE PHASE I HERITAGE IMPACT ASSESSMENT

5.1 Types and ranges of heritage resources

The Phase I HIA study for the proposed Ingula Project Area revealed none of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the project area.

The Phase I HIA study is now briefly discussed and illuminated with photographs.



Figure 1- The Ingula Project Area involves the low-level Ingula Bridge that crosses the Braamhoekspruit, a tributary of the Klipspruit, on the farm Trekboer 1002GS near Van Reenen in the Free State Province of South Africa (above).

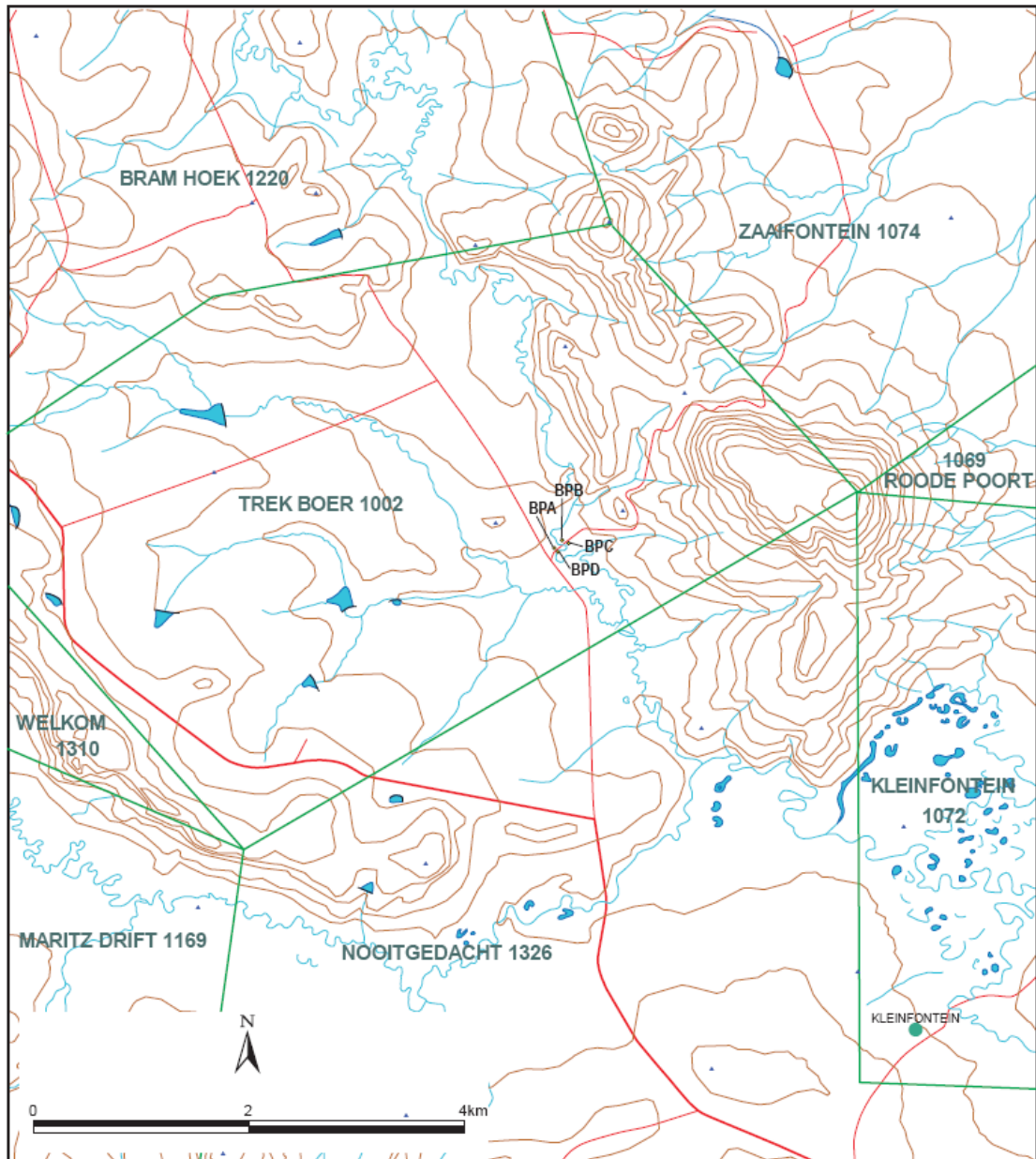


Figure 2- The Ingula Bridge Project Area along the Braamhoekspruit, downstream of the Ingula Pumped Storage Scheme outside Van Reenen in the Free State Province of South Africa (above). No heritage resources of significance were observed in the project area.



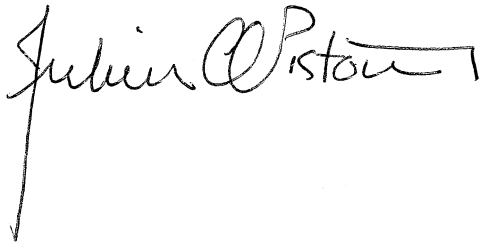
Figures 3 & 4- Up-stream and down-stream of the Braamhoekspruit where it is crossed by the Ingula Bridge (above and below). No heritage resources of significance were observed along the banks of the Braamhoekspruit in the Ingula Project Area.



6 CONCLUSIONS AND RECOMMENDATIONS

The Phase I HIA study for the proposed Ingula Project Area revealed none of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999).

There is consequently no reason from a heritage point of view why the proposed upgrading of the Ingula Bridge should not continue.

A handwritten signature in black ink, reading "Julius CC Pistorius". The signature is written in a cursive style with a long vertical line extending downwards from the 'P'.

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