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**A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR THE
PROPOSED LAKE UMUZI SOUTH BANK EXTENSION IN SECUNDA IN
THE MPUMALANGA PROVINCE**

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May 2015

EXECUTIVE SUMMARY

This study contains the report for a Phase I HIA study for the proposed Lake Umuzi South Bank Extension in Secunda in the Mpumalanga Province and was done in accordance with Section 38 of the National Heritage Resources Act (No 25 of 1999).

The aims with the Phase I HIA study were the following:

- To determine if any of the types and ranges of heritage resources (the 'national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the Project Area and, if so, to establish the significance of these heritage resources.
- To establish the level of significance of any possible impact on these heritage resources.
- To propose appropriate mitigation measures for those types and ranges of heritage resources that may be affected by the proposed Lake Umuzi South Bank Extension Project.

The Phase I HIA study for the proposed Lake Umuzi South Bank Extension Project did not reveal any of the types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act (No 25 of 1999). Infrastructure that may be affected by the Lake Umuzi South Bank Extension Project dates from the recent past given the fact that the development of Secunda commenced during the late 1970's. These remains have no heritage significance.

There is consequently no reason from a heritage point of view why the proposed Lake Umuzi South Bank Extension should not proceed.

General (disclaimer)

Although due consideration was given to the observing and documenting of all heritage resources in the Project Area, some resources may not have been detected due to various reasons (occurring beneath the surface, unmarked, inconspicuous or eroded nature, covered by vegetation, human failure to recognise, etc.).

If any heritage resources of significance are exposed during the development of the Lake Umuzi South Bank Extension Project 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 notified 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

1.1 Project Background

This Phase I Heritage Impact Assessment (HIA) study is one of a series of specialist study reports which are compiled for the proposed Lake Umuzi South Bank Extension Project which is part of the Lake Umuzi Waterfront Development in Secunda in the Mpumalanga Province of South Africa.

Previous heritage surveys that were conducted for developers in the Secunda area indicated that the most common types and ranges of heritage resources which exist in this part of the province consist of historical remains comprising farmstead complexes with outbuildings and graveyards. Stone walled sites which date from the Late Iron Age and the Historical Period are more restricted to the eastern parts of the province where these remains are associated with mountainous terrain or undulating areas with dolerite dykes and outcrops. However, various types and ranges of heritage resources that qualify as part of South Africa's 'national estate' as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur across the Mpumalanga 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;
- (a) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (b) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (c) 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

1.2 Definitions

Terms that may be used in this report are briefly outlined below:

- Conservation: The act of maintaining all or part of a resource (whether renewable or non-renewable) in its present condition in order to provide for its continued or future use. Conservation includes sustainable use, protection, maintenance, rehabilitation, restoration and enhancement of the natural and cultural environment.
- Conservation (*in-situ*): The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.
- Cultural (heritage) resources: A broad, generic term covering any physical, natural and spiritual properties and features adapted, used and created by humans in the past and present. Cultural resources are the result of continuing human cultural activity and embody a range of community values and meanings. These resources are non-renewable and finite. Cultural resources include traditional systems of cultural practice, belief or social interaction. They can be, but are not necessarily identified with defined locations.
- Cultural (heritage) resource management: A process that consists of a range of interventions and provides a framework for informed and value-based decision-making. It integrates professional, technical and administrative functions and interventions that impact on cultural resources. Activities include planning, policy development, monitoring and assessment, auditing, implementation, maintenance, communication, and many others. All these activities are (or will be) based on sound research.
- Heritage resources: The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. Heritage (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.

- 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 300 years ago).
- 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.
- Historical period: Refers to the first appearance or use of 'modern' Western writing in a particular area or region of the world.
- 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.
- 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.
- Maintenance: Keeping something in good health or repair.
- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.
- Protected area: A geographically defined area designated and managed to achieve specific conservation objectives. Protected areas are dedicated primarily to the protection and enjoyment of natural or cultural heritage, to the maintenance of biodiversity, and to the maintenance of life-support systems.
- Reconstruction: Re-erecting a structure on its original site using original components.
- Replication: The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, object, or a part thereof, as it appeared at a specific period.
- Restoration: Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components.
- Sustainability: The ability of an activity to continue indefinitely, at current and projected levels, without depleting social, financial, physical and other resources required to produce the expected benefits.

- Translocation: Dismantling a structure and re-erecting it on a new site using original components.
- Project Area: refers to the area (footprint) 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 and ranges of heritage resources in any given Project 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 human remains and the relocation of graveyards, etc. Phase II work involve permitting processes, require the input of different specialists and the co-operation and approval of SAHRA.

2 DETAILS OF THE SPECIALIST

Profession: Archaeologist, Museologist (Museum Scientists), Lecturer, Heritage Guide Trainer and Heritage Consultant

Qualifications:

BA (Archaeology, Anthropology and Psychology) (UP, 1976)

BA (Hons) Archaeology (distinction) (UP, 1979)

MA Archaeology (distinction) (UP, 1985)

D Phil Archaeology (UP, 1989)

Post Graduate Diploma in Museology (Museum Sciences) (UP, 1981)

Work experience:

Museum curator and archaeologist for the Rustenburg and Phalaborwa Town Councils (1980-1984)

Head of the Department of Archaeology, National Cultural History Museum in Pretoria (1988-1989)

Lecturer and Senior lecturer Department of Anthropology and Archaeology, University of Pretoria (1990-2003)

Independent Archaeologist and Heritage Consultant (2003-)

Accreditation: Member of the Association for Southern African Professional Archaeologists. (ASAPA)

Summary: Julius Pistorius is a qualified archaeologist and heritage specialist with extensive experience as a university lecturer, museum scientist, researcher and heritage consultant. His research focussed on the Late Iron Age Tswana and Lowveld-Sotho (particularly the Bamalatji of Phalaborwa). He has published a book on early Tswana settlement in the North-West Province and has completed an unpublished manuscript on the rise of Bamalatji metal workings spheres in Phalaborwa during the last 1 200 years. He has excavated more than twenty LIA settlements in North-West and twelve IA settlements in the Lowveld and has mapped hundreds of stone walled sites in the North-West. He has written a guide for Eskom's field personnel on heritage management. He has published twenty scientific papers in academic journals and several popular articles on archaeology and heritage matters. He collaborated with environmental companies in compiling State of the Environmental Reports for Ekurhuleni, Hartebeespoort and heritage management plans for the Magaliesberg and Waterberg. Since acting as an independent consultant he has done approximately 800 large to small heritage impact assessment reports. He has a longstanding working relationship with Eskom, Rio Tinto (PMC), Rio Tinto (EXP), Impala Platinum, Angloplats (Rustenburg), Lonmin, Sasol, PMC, Foskor, Kudu and Kelgran Granite, Bafokeng Royal Resources, Pilanesberg Platinum Mine (PPM) etc. as well as with several environmental companies.

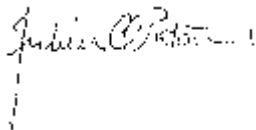
3 DECLARATION OF INDEPENDENCE

I, Julius CC Pistorius, declare that:

I act as the independent environmental practitioner in this application
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
I declare that there are no circumstances that may compromise my objectivity in performing such work;
I have expertise in conducting environmental impact assessments, including knowledge of the National Heritage Resources Act (No 25 of 1999) and any guidelines that have relevance to the proposed activity;
I will comply with the Act, regulations and all other applicable legislation;
I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application;
I have no, and will not engage in, conflicting interests in the undertaking of the activity;
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
I will keep a register of all interested and affected parties that participated in a public participation process; and
I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
all the particulars furnished by me in this form are true and correct;
will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations;
and
I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010.



Signature of the environmental practitioner:
Private Consultant

Name of company:
10 May 2015

Date:

Signature of the Commissioner of Oaths:

Date:

Designation:

4 SCOPE OF WORK

Sonland Ontwikkeling Mpumalanga (Pty) Ltd developed the Lake Umuzi Waterfront in Secunda. A second project entails the extension of the Waterfront Development Project and is called the Lake Umuzi South Bank Extension Project. This project entails a residential, mixed used, recreational and commercial development to the south of the Waterfront Development Project on the farm Rosslee 820 IS within the Govan Mbeki Local Municipality in Secunda in the Mpumalanga Province.

The aims with the Phase I HIA study were the following:

- To determine if any of the types and ranges of heritage resources (the 'national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the Project Area and, if so, to establish the significance of these heritage resources.
- To establish the level of significance of any possible impact on these heritage resources.
- To propose appropriate mitigation measures for those types and ranges of heritage resources that may be affected by the proposed Lake Umuzi South Bank Extension Project.

5 LEGAL FRAMEWORK

South Africa's heritage resources ('national estate') are protected by international, national and regional legislation which provides regulations, policies and guidelines for the protection, management, promotion and utilization of heritage resources. South Africa's 'national estate' includes a wide range of various types of heritage resources as outlined in Section 3 of the National Heritage Resources Act (NHRA, Act No 25 of 1999) (see Box 1).

According to the NHRA (Act No 25 of 1999) heritage resources are categorised using a three-tier system, namely Grade I (national), Grade II (provincial) and Grade III (local) heritage resources.

At the provincial level, heritage legislation is implemented by Provincial Heritage Resources Agencies (PHRAs) which apply the National Heritage Resources Act (Act 25 of 1999) together with provincial government guidelines and strategic frameworks. Metropolitan or Municipal (local) policy regarding the protection of cultural heritage resources is also linked to national acts and is implemented by the South African Heritage Resources Agency (SAHRA) and the Provincial Heritage Resources Agencies.

At a national level heritage resources are dealt with by the National Heritage Council Act (Act No 11 of 1999) and the National Heritage Resources Act (Act No 25 of 1999).

5.1 Legislation relevant to heritage resources

The identification, evaluation and assessment of heritage resources in South Africa are regulated by the following legislation:

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

5.2 The National Heritage Resources Act (NHRA)

According to the NHRA (Act No 25 of 1999) the 'national estate' comprises the following (see Box 1):

- a. Archaeological artefacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Graveyards, burial grounds and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

Elaborating on the above the 'national estate' also includes (Box 1):

1. Places, buildings, structures and equipment of cultural significance
2. Places to which oral traditions are attached or which are associated with living heritage
3. Historical settlements and townscapes
4. Landscapes and features of cultural significance
5. Geological sites of scientific or cultural importance
6. Archaeological and paleontological sites of importance
7. Sites of significance relating to the history of slavery
8. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military and ethnographic objects, books etc.)

5.3 Heritage Impact Assessment studies

According to Section 38 of the National Heritage Resources Act (Act No 25 of 1999) a Heritage Impact Assessment (HIA) process must be followed under the following circumstances:

- The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length

- The construction of a bridge or similar structure exceeding 50m in length
- Any development or activity that will change the character of a site and which exceeds 5 000m² or which involve three or more existing erven or subdivisions thereof
- Re-zoning of a site exceeding 10 000 m²
- Any other category provided for in the regulations of SAHRA or a provincial heritage authority

5.4 Regulations with regard to heritage resources

The regulations outlined below are applicable to the types and ranges of heritage resources which are the most common in the region where the heritage study was conducted, namely:

5.4.1 Buildings and structures

According to Section 34(1) of the NHRA (Act No 25 of 1999) no person may alter (demolish) any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or any other facility made by people and which is fixed to land and which includes fixtures, fittings and equipment associated with such structures.

Alter means any action which affects the structure, appearance or physical properties of a place or object, whether by way of structural or any other works such as painting, plastering, decorating, etc..

5.4.2 Graves and burial grounds

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders

- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the NHRA (Act No 25 of 1999) no person, without a permit issued by the relevant heritage resources authority, may:

- a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b) destroy, damage, alter, exhume 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; or
- c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Unidentified graves are handled as if they are older than 60 years until proven otherwise.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the Ordinance on Excavations (Ordinance no. 12 of 1980) (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place. Human remains can only be handled by a registered undertaker or an institution declared under the Human Tissues Act (Act 65 of 1983 as amended).

5.4.3 Archaeology, palaeontology and meteorites

Section 35(4) of the NHRA (Act No 25 of 1999) deals with archaeology, palaeontology and meteorites and states that no person without a permit issued by the responsible heritage resources authority (national or provincial) may:

- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or paleontological material or object, or any meteorite; or bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological material or objects, or use such equipment for the recovery of meteorites.
- alter or demolish any structure or part of a structure which is older than 60 years.

Heritage resources may only be disturbed or moved by an archaeologist after being issued with a permit received from the South African Heritage Resources Agency (SAHRA). In order to demolish heritage resources the developer has to acquire a destruction permit by from SAHRA.

6 METHODOLOGY

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

6.1 Fieldwork

The footprint of the proposed Lake Umuzi South Bank Extension Project Area was surveyed by means of using a vehicle whilst pedestrian surveys were conducted from a main track log which was recorded with a GPS instrument (Figure 1).



Figure 1- The main track according to which the survey was conducted was recorded with a GPS instrument which was mounted in a vehicle. Pedestrian surveys were conducted from the main track (above).

The Project Area is totally transformed as a result of earlier development which included the construction of two dams, the utilization of the terrain during an earlier period as the Secunda Show grounds and the more recent development of the Lake Umuzi Waterfront Development directly to the north of the current Project Area. Infrastructures that do occur are either demolished or date from the recent past and have no heritage significance.

The project area at large was subjected to earlier heritage surveys which were conducted for different developers (see 'Part 11, Bibliography relating to earlier heritage studies').

- Pistorius, J.C.C. 2008. *A Phase I Heritage Impact Assessment (HIA) study for the proposed new Harmony South underground mine near Leandra on the Eastern Highveld in the Mpumalanga Province of South Africa*. Unpublished report prepared for Turgis Consulting and Harmony.
- Pistorius, J.C.C. 2008. *A Phase I Heritage Impact Assessment (HIA) study for Sasol's South Block on the Eastern Highveld in the Mpumalanga Province of South Africa*. Unpublished report for Clean Stream Environmental Services.
- Pistorius, J.C.C. 2008. *A Phase I Heritage Impact Assessment (HIA) study for Sasol's North Block on the Eastern Highveld in the Mpumalanga Province of South Africa*. Unpublished report for Clean Stream Environmental Services.
- Pistorius, J.C.C. 2008. *A Phase I Heritage Impact Assessment (HIA) study for Sasol's proposed new shaft complex on Strybult 542 and for the North Block on the Eastern Highveld in the Mpumalanga Province of South Africa*. Unpublished report for Clean Stream Environmental Services.
- Pistorius, J.C.C. 2008. *A Phase I Heritage Impact Assessment (HIA) study for Sasol's proposed new gas and liquid pipelines (along a corridor) from Sasol Synfuels in Secunda (Mpumalanga) to Sasol Infrachem and Natref in Sasolburg (Free State) on the Highveld in the Republic of South Africa*. Unpublished report for Nature and Business Alliance Africa (Pty) Ltd.
- Pistorius, J.C.C. 2008. *A Phase I Heritage Impact Assessment (HIA) study for Sasol's proposed new conveyor belt running from the Strybult Shaft Complex to the Sasol Secunda Plant on the Eastern Highveld in the Mpumalanga Province of South Africa*. Unpublished report for Clean Stream Environmental Services.
- Pistorius, J.C.C. 2010. *A Phase I Heritage Impact Assessment (HIA) study for Sasol's Mining's Brandspruit, Middelbult, Twistdraai en Bosjespruit mining areas on the Eastern Highveld in the Mpumalanga Province of South Africa*. Unpublished report for Sasol Mining.
- Pistorius, J.C.C. 2013. *An Archaeological (heritage) survey for Taung Gold International's proposed Evander Gold Project involving the construction of a new tailings storage facility (TSF) between Evander and Secunda on the Eastern Highveld in the Mpumalanga Province*. Unpublished report for SLR Consulting.

- Pistorius, J.C.C. 2014. *A Phase I Heritage Impact Assessment (HIA) study for Taung Gold (Secunda) (proprietary) Limited (Taung Gold's) proposed construction of dewatering infrastructure and a decant water pipeline near Secunda on the Eastern Highveld in the Mpumalanga Province. Unpublished report for SLR Consulting.*
- Pistorius, J.C.C. 2014. *A Phase I Heritage Impact Assessment (HIA) study for the EMP Amendment for Evander Shaft 6 and a proposed new tailings dam and associated tailings delivery and return water pipeline near Secunda on the Eastern Highveld in the Mpumalanga Province. Unpublished report for SLR Consulting.*

Photographs and descriptions illuminate the nature and characteristic features of the Project Area (see Part 6.1 'Fieldwork survey').

6.2 Databases, literature survey and maps

Literature relating to the pre-historical and the historical unfolding of the Eastern Highveld was reviewed. This review focused primarily on the pre-history as well as the Historical Period on the Eastern Highveld. It also provided a broad outline of the coal mining history of the region as well as its indigenous architecture. The contextual background of the Eastern Highveld contributes to a better understanding of the identity and meaning of heritage sites which occur in and near the Project Area.

The desktop study also involved consulting heritage data banks maintained at the Mpumalanga Provincial Heritage Resources Agency (Barberton), the Archaeological Data Recording Centre at the National Flagship Institute (Pretoria) and the national heritage resources register (SAHRIS) maintained at SAHRA in Cape Town.

6.3 Assumptions and limitations

Although due consideration was given to the observing and documenting of all heritage resources in the Project Area, some resources may not have been detected due to various reasons (occurring beneath the surface, unmarked, inconspicuous or eroded nature, covered by vegetation, human failure to recognise, etc.).

If any heritage resources of significance is exposed during the proposed development 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 authorization (permits) from SAHRA to conduct the mitigation measures.

7 THE BASELINE DESCRIPTION

7.1 Location of the Project Area

The proposed Lake Umuzi South Bank Extension Project falls within a Project Area which is wedged between Walter Sisulu Drive (west), PDP Kruger Drive (east) and the established Waterfront Development and an extension of land to the south of two artificial dams on the farm Rosslee 8201S in Secunda within the Govan Mbeki Local Municipality and the Gert Sibande District Municipality in the Mpumalanga Province.

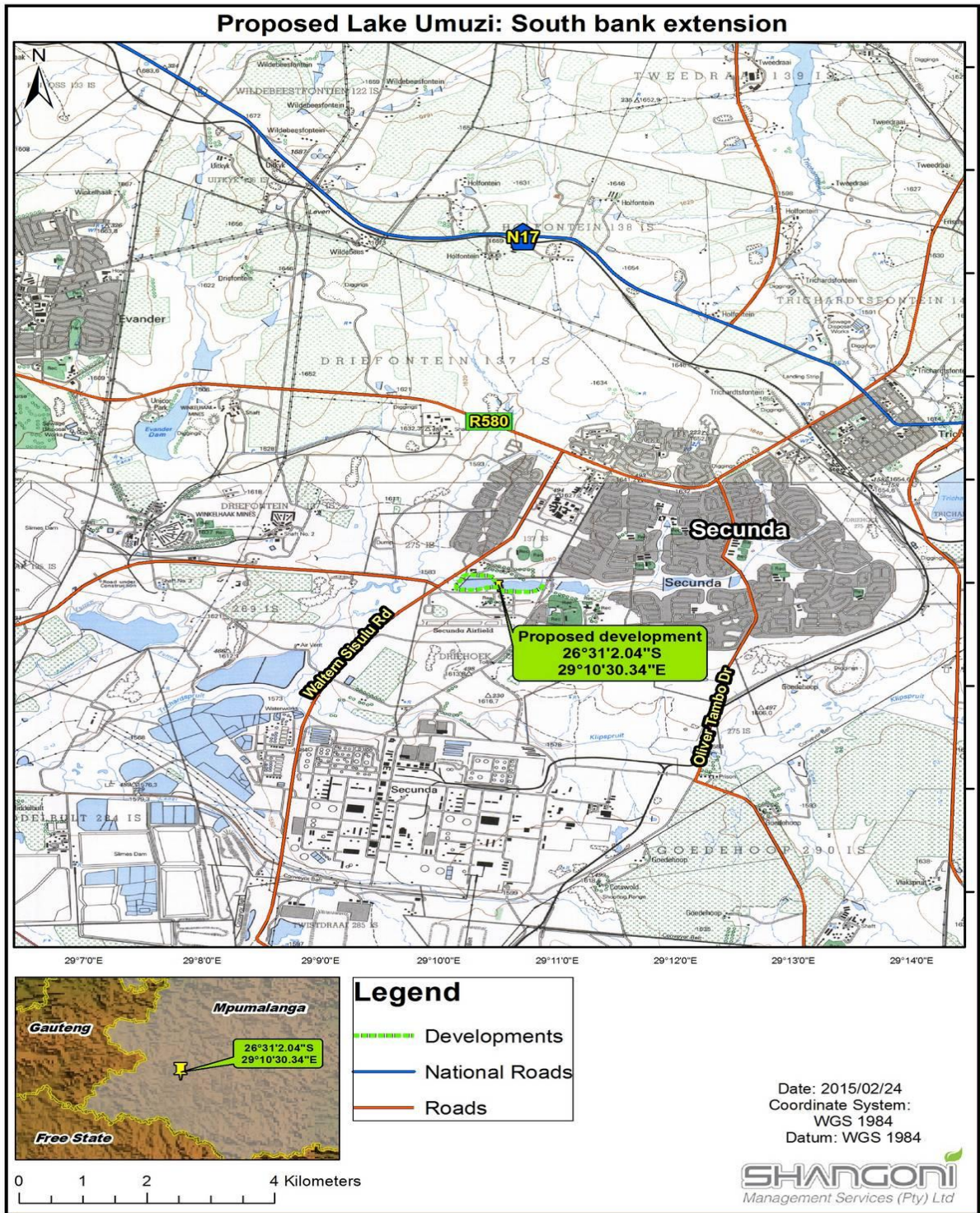


Figure 2– The Lake Umuzi South Bank Extension Project in Secunda in the Mpumalanga Province (above).

The Lake Umuzi Waterfront Development occurs to the north and south of two artificial dams which were constructed by Sasol two to three decades ago. At the time infrastructure such as camping spots with kitchens and washing and ablution facilities were developed in close proximity of the dams. A few residential houses used to exist

further to the south of the proposed development. The majority of these structures have been demolished. Remaining infrastructure such as offices, sheds and storage facilities used to be part of Secunda's Show Grounds and date from the recent past (2628DB Willemsdal 1:50 000 topographical map; 2628 East Rand 1:250 000) (Figure 2).

7.2 The nature of the Project Area

The larger area is characterised by a combination of flat and undulating grass veld and is characterised by a combination of mining related activities and residential areas. Trees that do occur are exotics such as Blue Gum lots and poplar-groves, the latter primarily near streams or along the banks of water bodies. Most of these trees are anthropogenic as they have been introduced in the area by means of human activities in the past.

Relatively undisturbed grass veld occurs in patches across the wider Project Area whilst some avenues with trees have survived the onslaught of development and change to the environment during the past few decades. However, by and large the Project Area has been scarred by developmental activities which commenced in the late 1970's when Sasol and Secunda were established. The Project Area was formerly used as Secunda's Show Grounds and temporary as well as permanent infrastructure, some still remaining, were erected and dismantled over the years. The construction of the two artificial dams and the utilization of the premises for recreational activities further contributed to the transformation and decline of the natural environment.

The Project Area falls within the town of Secunda whilst Sasol's massive plants where liquid fuels are manufactured from coal as well as several of Sasol's underground coal mines, collectively known as Secunda Colliers, which is the world's largest underground mining complex as well as a new open-cast mine at Syferfontein are located to the south and in close proximity of the Project Area.

This part of the Mpumalanga Province is also known for its production of agricultural crops such as maize wheat, sorghum, dairy, potatoes and other vegetables. Cattle and sheep ranching also make a significant contribution to the local economy. Coal, gold and silica mines also occur in the area.

The nature and characteristic features of the Project Area is further discussed and illuminated with photographs (see Part 6.1 'The field survey').

7.3 Development components for the Lake Umuzi South Bank Extension Project

The Lake Umuzi South Bank Extension Project will be carried out in different development phases and will include the following:

- Phase 1A will consist of the caravan park,
- Phase 1B will consist of the timber tented structures around the western dam,
- Phase 2 will consist of two and three bedroom units, a pedestrian bridge which stretches from the south to the north bank, sunken lounges, a restaurant and commercial areas around the eastern dam.
- Phase 3 will consist of the construction of three bedroom apartments.
- Phase 4 (long term) will comprise the development of commercial offices or retail buildings and an outdoor adventure park with timber course structures and team building facilities.

The developmental project is hereafter referred to as the Lake Umuzi South Bank Extension Project and the footprint of the development is referred to as the Project Area.

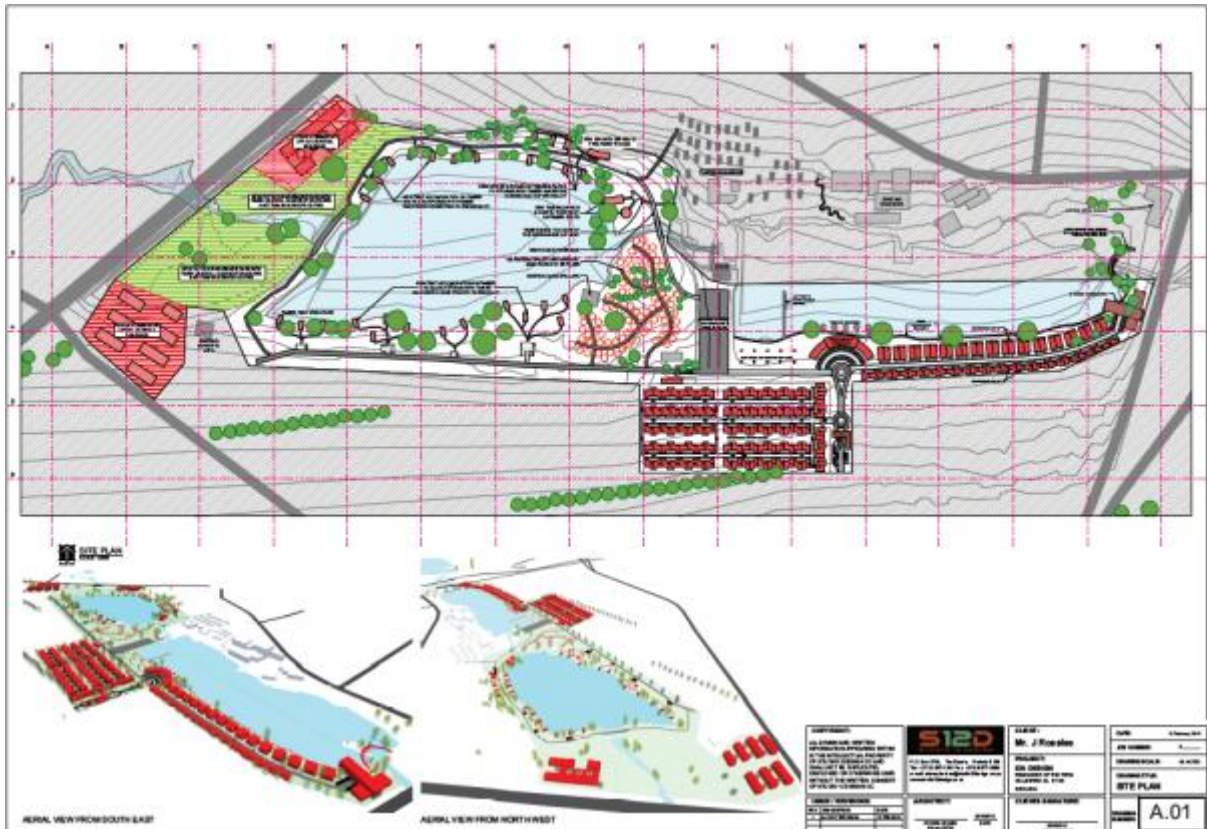


Figure 3- Conceptual plan layout for the Lake Umuzi South Bank Extension which is part of the Lake Umuzi Waterfront Development Project in Secunda in the Mpumalanga Province (above).

A number of heritage studies have been done for Evander Gold, Taung Gold and for Sasol in close proximity of the proposed project which outlines the nature and heritage character of the area. These studies provide predictive evidence regarding the types and ranges of heritage resources to be expected in any new area to be surveyed, namely: (see Part 11, 'Bibliography relating to earlier heritage studies').

Heritage resources which are quite common in the larger Project Area include:

- Historical remains associated with farmstead complexes consisting of houses, associated outbuildings, cattle enclosures and graveyards.
- Abandoned graveyards left by farm workers who moved from farms to urban areas.

7.4 Contextualising the Project Area

A brief overview of pre-historical and historical information below contextualises the Eastern Highveld and the Project Area in particular. This information is necessary to understand the meaning and significance of heritage resources which may exist in the Project Area.

7.4.1 Stone Age and rock art sites

Stone Age sites are marked by stone artefacts that are found scattered on the surface of the earth or as parts of deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (ESA) (covers the period from 2.5 million years ago to 250 000 years ago), the Middle Stone Age (MSA) (refers to the period from 250 000 years ago to 22 000 years ago) and the Late Stone Age (LSA) (the period from 22 000 years ago to 200 years ago).

Dongas and eroded areas at Maleoskop near Groblersdal is one of only a few places in Mpumalanga where ESA Olduwan and Acheulian artefacts have been recorded.

Evidence for the MSA has been excavated at the Bushman Rock Shelter near Ohrigstad. This cave was repeatedly visited over a prolonged period. The oldest layers date back to 40 000 years BP and the youngest to 27 000BP (Esterhuysen & Smith, 2007).

LSA occupation of the Mpumalanga Province also has been researched at Bushman Rock Shelter where it dates back 12 000BP to 9 000BP and at Höningnestkrans near Badfontein where a LSA site dates back to 4 870BP to 200BP (Esterhuysen & Smith, 2007).

The LSA is also associated with rock paintings and engravings which were done by San hunter-gatherers and Khoi Khoi herders. Rock paintings were also done by Early Iron Age (EIA) farmers (Maggs, 1983 and 2008). Approximately 400 rock art sites are distributed throughout Mpumalanga, notably in the northern and eastern regions at places such as Emalahleni (Witbank) (4), Lydenburg (2), White River and the southern

Kruger National Park (76), Nelspruit and the Nsikazi District (250). The Ermelo area holds eight rock paintings (Smith & Zubieta, 2007).

The rock art of the Mpumalanga Province can be divided into San rock art which is the most wide spread, herder or Khoekhoe paintings (thin scattering from the Limpopo Valley) through the Lydenburg district into the Nelspruit area) and localised late white farmer paintings. Farmer paintings can be divided into Sotho-Tswana finger paintings and Nguni engravings (Only 20 engravings occur at Boomplaats, north-west of Lydenburg). Farmer paintings are more localised than San or herder paintings and were mainly used by the painters for instructional purposes (Smith & Zubieta, 2007).

During the LSA and Historical Period, San people called the Batwa lived in sandstone caves and rock shelters near Lake Chrissie in the Ermelo area. The Batwa are descendants of the San, the majority of which intermarried with Bantu-Negroid people such as the Nhlapo from Swazi-descend and Sotho-Tswana clans such as the Pai and Pulana. Significant intermarriages and cultural exchanges occurred between these groups. The Batwa were hunter-gatherers who lived from food which they collected from the veldt as well as from the pans and swamps in the area. During times of unrest, such as the *difaqane* in the early nineteenth century, the San would converge on Lake Chrissie for food and sanctuary. The caves, lakes, water pans and swamps provided relative security and camouflage. Here, some of the San lived on the surfaces of the water bodies by establishing platforms with reeds. With the arrival of the first colonists in the nineteenth century many of the local Batwa family groups were employed as farm labourers (Schapera, 1927; Potgieter, 1955; Schoonraad & Schoonraad, 1975).

7.4.2 Iron Age remains

The Iron Age is associated with the first agro-pastoralists or farming communities who lived in semi-permanent villages and who practised metal working during the last two millennia. The Iron Age is usually divided into the Early Iron Age (EIA) (covers the 1st millennium AD) and the Later Iron Age (LIA) (covers the first 880 years of the 2nd millennium AD).

Evidence for the first farming communities in the Mpumalanga Province is derived from a few EIA potsherds which occur in association with the LSA occupation of the Höningnest Shelter near Badfontein. The co-existence of EIA potsherds and LSA stone tools suggest some form of 'symbiotic relationship' between the Stone Age hunter-gatherers who lived in the cave and EIA farmers in the area (also note Batwa and Swazi/Sotho Tswana relationship) (Esterhuysen & Smith, 2007).

The Welgelegen Shelter on the banks of the Vaal River near Ermelo also reflects some relationship between EIA farmers who lived in this shelter and hunter-gatherers who manufactured stone tools and who occupied a less favourable overhang nearby during AD1200 (Schoonraad & Beaumont, 1971).

EIA sites were also investigated at Sterkspruit near Lydenburg (AD720) and in Nelspruit where the provincial governmental offices were constructed. The most infamous EIA site in South Africa is the Lydenburg head site which provided two occupation dates, namely during AD600 and from AD900 to AD1100. At this site the Lydenburg terracotta heads were brought to light. Doornkop, located south of Lydenburg, dates from AD740 and AD810 (Evers, 1981; Whitelaw, 1996).

The Late Iron Age is well represented in Mpumalanga and stretches from AD1500 well into the nineteenth century and the Historical Period. Several spheres of influence, mostly associated with stone walled sites, can be distinguished in the region. Some of the historically well-known spheres of influence include the following:

- Early arrivals in the Mpumalanga Province such as Bakone clans who lived between Lydenburg, Badfontein and Machadodorp and Eastern Sotho clans such as the Pai, Pulana and Kutswe who established themselves in the eastern parts of the province (Collett, 1979 and 1983;. Delius, 2007; Makhura, 2007; Delius & Schoeman, 2008).
- Swazi expansion into the Highveld and Lowveld of the Mpumalanga Province occurred during the reign of Sobhuza (AD1815 to 1836/39) and Mswati (AD1845 to 1868) while Shangaan clans entered the province across the Lembombo Mountains in the east during the second half of the nineteenth century (Delius, 2007; Makhura, 2007.).

- The Bakgatla (Pedi) chiefdom in the Steelpoort Valley rose to prominence under Thulare during the early 1800's and was later ruled by Sekwati and Sekhukune from the village of Tsjate in the Leolo Mountains. The Pedi maintained an extended sphere of influence across the Limpopo and Mpumalanga Provinces during the nineteenth century (Mönnig, 1978; Delius, 1984).
- The Ndzundza-Ndebele established settlements at the foot of the Bothasberge (KwaMaza and Esikhunjini) in the 1700's and lived at Erholweni from AD1839 to AD1883 where the Ndzundza-Ndebele's sphere of influence known as KoNomthjarhelo stretched across the Steenkampsberge.
- The Bakopa lived at Maleoskop (1840 to 1864) where they were massacred by the Swazi while the Bantwane live in the greater Groblersdal and Marble Hall areas.
- Corbelled stone huts which are associated with ancestors of the Sotho on Tafelkop near Davel which date from the AD1700's into the nineteenth century (Hoernle 1930).
- Stone walled settlements spread out along the eastern edge of the Groot Dwarsriver Valley served as the early abode for smaller clans such as the Choma and Phetla communities which date from the nineteenth century.

7.4.3 The Historical Period

Historical towns closest to the Project Area include Leandra, Kinross, Evander and Secunda.

The town of Leandra's name is derived from two townships, Leslie and Eendrag, which are incorporated in this mining village.

Kinross, about 20 km east of Leandra, is the railhead for the township of Leandra and four gold mines in the region, namely Winkelhaak, Leslie, Bracken and Kinross who all opened in the 1950's.

The village was proclaimed in the 1915 and named for Kinross in Scotland by the engineers who constructed the railway line between Springs and Breyton. Kinross is near the watershed that separates the rivers flowing towards the Indian Ocean in the east and the rivers flowing towards the Atlantic Ocean in the west.

Secunda developed around Sasol 1 and Sasol 2 in the 1970's. Sasol was born during the oil crisis of 1973 when OPEC virtually quadrupled the price of crude oil overnight. Construction started in 1976 and the first oil was delivered on 1 March 1980. Following the overthrow of the Shah of Iran in 1979, South Africa's major source of crude oil at the time, the government announced the construction of a second plant at Secunda to double output. Sasol 3 delivered its first oil from coal in May 1982. The total costs of the two plants came to R 5,8 billion, mostly financed by levies on motorists.

Sasol 2 and 3 use about 35 million tons of coal a year to produce mostly liquid fuels. The coal is produced by four mines collectively known as Secunda Colliers which is the world's largest underground mining complex and by a new open-cast mine at Syferfontein.

Evander, south of Kinross, was established in 1955 by the Union Corporation as a residential township for the employees of the Winkelhaak, Leslie and Bracken mines. The name Evander is a composite of Evelyn and Anderson, the names of the widow of the managing director of the company when prospecting began in the area.

Several large coal mines which feed the Sasol plants at Secunda and Eskom's giant power stations on the Eastern Highveld are located near the project area. The Sasol Project Area is one of the most productive agricultural areas in the country. The principal crops which are produced in the region include maize, wheat, sorghum, dairy, potatoes and other vegetables (Erasmus 1995).

7.4.4 A coal mining heritage

Coal mining on the Eastern Highveld is now older than one century and has become the most important coal mining region in South Africa. Whilst millions of tons of high-grade coal are annually exported overseas more than 80% of the country's electricity is

generated on low-grade coal in Eskom's power stations such as Duvha, Matla and Arnot situated near coalmines on the Eastern Highveld.

The earliest use of coal (charcoal) in South Africa was during the Iron Age (300-1880AD) when metal workers used charcoal, iron and copper ores and fluxes (quartzite stone and bone) to smelt iron and copper in clay furnaces.

Colonists are said to have discovered coal in the French Hoek Valley near Stellenbosch in the Cape Province in 1699. The first reported discovery of coal in the interior of South Africa was in the mid-1830 when coal was mined in KwaZulu/Natal.

The first exploitation for coal was probably in KwaZulu/Natal as documentary evidence refers to a wagon load of coal brought to Pietermaritzburg to be sold in 1842. In 1860 the coal trade started in Dundee when a certain Pieter Smith charged ten shillings for a load of coal dug by the buyer from a coal outcrop in a stream. In 1864 a coal mine was opened in Molteno. The explorer, Thomas Baines mentioned that farmers worked coal deposits in the neighbourhood of Bethal (Transvaal) in 1868. Until the discovery of diamonds in 1867 and gold on the Witwatersrand in 1886, coal mining only satisfied a very small domestic demand.

With the discovery of gold in the Southern Transvaal and the development of the gold mining industry around Johannesburg came the exploitation of the Boksburg-Springs coal fields, which is now largely worked out. By 1899, at least four collieries were operating in the Middelburg-Witbank district, also supplying the gold mining industry. At this time coal mining also started in Vereeniging. The Natal Collieries importance was boosted by the need to find an alternative for imported Welsh anthracite used by the Natal Government Railways.

By 1920 the output of all operating colliers in South Africa attained an annual figure of 9,5 million tonnes. Total in-situ reserves were estimated to be 23 billion tonnes in Witbank-Springs, Natal and Vereeniging. The total in situ reserves today are calculated to be 121 billion tonnes. The largest consumers of coal are Sasol, Mittal and Eskom.

7.4.5 A vernacular stone architectural heritage

A unique stone architectural heritage was established in the Eastern Highveld from the second half of the 19th century well into the early 20th century. During this time period stone was used to build farmsteads and dwellings, both in urban and in rural areas. Although a contemporary stone architecture also existed in the Karoo and in the Eastern Free State Province of South Africa a wider variety of stone types were used in the Eastern Highveld. These included sandstone, ferricrete ('ouklip'), dolerite ('blouklip'), granite, shale and slate.

The origins of a vernacular stone architecture in the Eastern Highveld may be ascribed to various reasons of which the ecological characteristics of the region may be the most important. Whilst this region is generally devoid of any natural trees which could be used as timber in the construction of farmsteads, outbuildings, cattle enclosures and other structures, the scarcity of fire wood also prevented the manufacture of baked clay bricks. Consequently stone served as the most important building material in the Eastern Highveld (Naude, 1993 and 2000). One of these historical structures was excavated and described after a heritage mitigation project was conducted for a coal mine (Pistorius, 2005).

LIA Sotho, Pedi, Ndebele and Swazi communities contributed to the Eastern Highveld's stone walled architecture. The tradition set by these groups influenced settlers from Natal and the Cape Colony to utilize the same resources to construct dwellings and shelters. Farmers from Scottish, Irish, Dutch, German and Scandinavian descend settled and farmed in the Eastern Highveld. They brought the knowledge of stone masonry from Europe. This compensated for the lack of fire wood on the eastern Highveld which was necessary to bake clay bricks.

8 THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY

8.1 The field survey

The heritage survey is outlined by means of photographs and descriptions which illuminate the nature and characteristic features of the Project Area.



Figures 4 & 5- The construction of two artificial dams where the Lake Umuzi Waterfront Development has commenced north of the dam and the Lake Umuzi South Bank Extension will occur along the southern side of the dams have scared large surfaces of land around these two features (above and below).





Figures 6 & 7- Developmental activities to the south of the artificial dams where the proposed Lake Umuzi South Bank Extension will be established have totally transformed the project area and have obliterated any natural vegetation which may have existed. The original landscape features and characteristics of the area are being replaced by an artificially created environment (above and below).





Figures 8 & 9- Infrastructure where the Lake Umuzi South Bank Extension will occur include a new small complex of flats (above) and camping facilities which were utilized along the banks of the dams consisting of kitchens, washing bays and ablution and braai facilities (below). This infrastructure dates from the recent past and has no heritage significance (below).





Figures 10 & 11- Infrastructure comprising sheds, store rooms and offices which were part of the former Secunda Show Grounds and which date from the recent past may be incorporated in the Lake Umuzi South Bank Extension Project (above and below). This infrastructure has no heritage significance.





Figures 12 & 13- Remains of demolished structures such as former residences which date from the recent past occur in the western part of the project area. These remains have no heritage significance (above and below).





Figures 14 & 15- Two former residences in the Project Area date from the recent past and have no heritage significance. These residences may be incorporated in the Lake Umuzi South Bank Extension project (above and below).



8.2 Types and ranges of heritage resources

The Phase I HIA study for the proposed Lake Umuzi South Bank Extension Project did not revealed any of the types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act (No 25 of 1999). Infrastructure that may be affected by the Lake Umuzi South Bank Extension Project dates from the recent past given the fact that the development of Secunda commenced during the late 1970's. These remains have no heritage significance.

There is consequently no reason from a heritage point of view why the proposed Lake Umuzi South Bank Extension should not proceed.

8.3 Impact Assessment

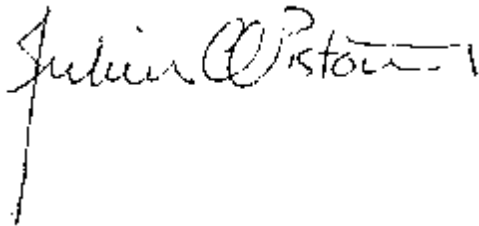
An impact assessment was conducted refer to the table below.

Environmental impact, extent, duration, significance and degree to which impact has caused irreplaceable loss	Risk rating (before mitigation)			Environmental objective	Degree to which impact can be reversed and the supporting mitigatory action plan	Timeframe	Responsibility	Risk rating (after mitigation)		
	Probability	Magnitude	Severity					Probability	Magnitude	Severity
ENVIRONMENTAL COMPONENT: Archaeology and heritage										
ACTIVITY: Construction and operational activities could disrupt any Archaeology and heritage artifacts										
PROJECT PHASE APPLICABILITY: Construction phase										
<p><u>Impact description:</u> The Phase I HIA study for the proposed Lake Umuzi South Bank Extension Project did not reveal any of the types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act (No 25 of 1999). Infrastructure that may be affected by the Lake Umuzi South Bank Extension Project dates from the recent past given the fact that the development of Secunda commenced during the late 1970's. These remains have no heritage significance.</p> <p><u>Extent of impact:</u> Not applicable</p> <p><u>Duration of impact:</u> Not applicable</p>	1	1	L	Identify, conserve and manage heritage resources (that exist).	<p><u>Degree to which impact can be reversed:</u> None.</p> <p><u>Proposed mitigation:</u> None.</p>	Commence during construction phase	ECO/ Environmental manager	1	1	L

9 CONCLUSION AND RECOMMENDATIONS

The Phase I HIA study for the proposed Lake Umuzi South Bank Extension Project did not reveal any of the types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act (No 25 of 1999). Infrastructure that may be affected by the Lake Umuzi South Bank Extension Project dates from the recent past given the fact that the development of Secunda commenced during the late 1970's. These remains have no heritage significance.

There is consequently no reason from a heritage point of view why the proposed Lake Umuzi South Bank Extension Project should not proceed.

A handwritten signature in black ink, appearing to read 'Julius CC Pistorius'. The signature is written in a cursive style with a long vertical line extending downwards from the end of the name.

DR JULIUS CC PISTORIUS

Archaeologist & Heritage Consultant

Member ASAPA

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