

HERITAGE IMPACT ASSESSMENT OF  
KING WILLIAM'S TOWN BULK REGIONAL SEWAGE SCHEME:  
PHASES 2 - 7,  
EASTERN CAPE PROVINCE, SOUTH AFRICA

Prepared for

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## **Management summary**

eThembeni Cultural Heritage was appointed by TERRECO to undertake a heritage impact assessment of a sewage scheme in the Eastern Cape Province, in terms of the National Heritage Resources Act No 25 of 1999. Two eThembeni staff members inspected the area on 10, 11 and 12 August 2010, and completed a controlled-exclusive surface survey and a database and literature search.

### **Observations**

We observed no heritage resources within the proposed development area.

### **Recommended mitigation measures**

None.

### **Recommended monitoring**

None.

### **Conclusion**

We recommend that the development proceed with no further heritage mitigation and have submitted this report to the South African Heritage Resources Agency in fulfilment of the requirements of the National Heritage Resources Act.

If permission is granted for the development to proceed, the client is reminded that the Act requires that a developer cease all work immediately and notify SAHRA should any heritage resources, as defined in the Act, be discovered during the course of development activities.

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## 1. Introduction

eThembeni Cultural Heritage was appointed by TERRECO to undertake a heritage impact assessment of a sewage scheme in the Eastern Cape Province, in terms of the National Heritage Resources Act No 25 of 1999 (refer to Appendix A).

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

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

This report represents compliance with a full Heritage Impact Assessment for the proposed development, excluding a palaeontological assessment, which we do not deem necessary given the nature of the project and its location.

## 2. Terms of reference

A Heritage Impact Assessment must address the following key aspects:

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

### 3. Project description

Buffalo City Municipality is developing proposals to upgrade the bulk regional sewage system in the King William's Town area to cater for both current and future sanitation demands to 2030. Collectively, the KWT Bulk Regional Sewage Scheme upgrade provides for the transfer of sewerage flows from existing treatment works within the focus area which are operating over capacity to a central works; for unlocking development in areas which are restricted by a lack of sewage treatment; and, providing bulk sewerage infrastructure for the reticulation of towns within the focus area. The Zwelitsha wastewater treatment works (WWTW) will be upgraded over time to function as the central treatment works for the region.

The Scheme is to be implemented in a sequential phased approach, as funding becomes available, with each of the phases representing a standalone component of the total upgrading scheme. In short, the phases will broadly comprise the following:

**Phase 1** Connecting the Schornville WWTW in KWT to the Zwelitsha WWTW via a bulk gravity sewer main.

**Phase 2** Upgrading the treatment capacity of the Zwelitsha WWTW from 9.1 megalitres (Mℓ) per day to 17.5 Mℓ per day (Stage 1 upgrade).

**Phase 3** Connecting Breidbach WWTW to the Zwelitsha WWTW via a bulk sewer main.

**Phase 4** Connecting Bhisho WWTW to the Zwelitsha WWTW via the Breidbach connection and decommissioning the Bhisho WWTW.

**Phase 5** Upgrading the treatment capacity of the Zwelitsha WWTW from 17.5 to 35 Mℓ per day (Stage 2 upgrade).

**Phase 6** Decommissioning the Breidbach and Schornville WWTWs. Connecting Phakamisa to Zwelitsha WWTW via the Zwelitsha pipe bridge.

**Phase 7** Providing bulk infrastructure to enable the reticulation of KwaTshatshu, Ndevana and part of Phakamisa.

Phases 2-7 of the Scheme are the focus of this Environmental Impact Assessment.

### 4. Project location

The WWTW that will be affected by the Scheme are located as follows:

- Zwelitsha WWTW S32° 55' 56.0", E27° 26' 28.3". Situated on the left bank of the Buffalo River upstream of its confluence with the Yellowwoods River.
- Schornville WWTW S32° 53' 59.5", E27° 24' 14.2". Situated on the left bank of the Buffalo River upstream of Zwelitsha WWTW and the confluence between the Buffalo River and Ngqokweni River.
- Breidbach WWTW S32° 54' 00.9", E27° 26' 21.1". Situated on the left bank of the Yellowwoods River.
- Bhisho WWTW S32° 50' 49.4", E27° 27' 36.2". Situated on the right bank of the Yellowwoods River.

These WWTW currently comprise a selection of wastewater treatment processes including the use of oxidation ponds at Breidbach and Bhisho, activated sludge with biofiltration at Schornville and biofiltration at Zwelitsha.

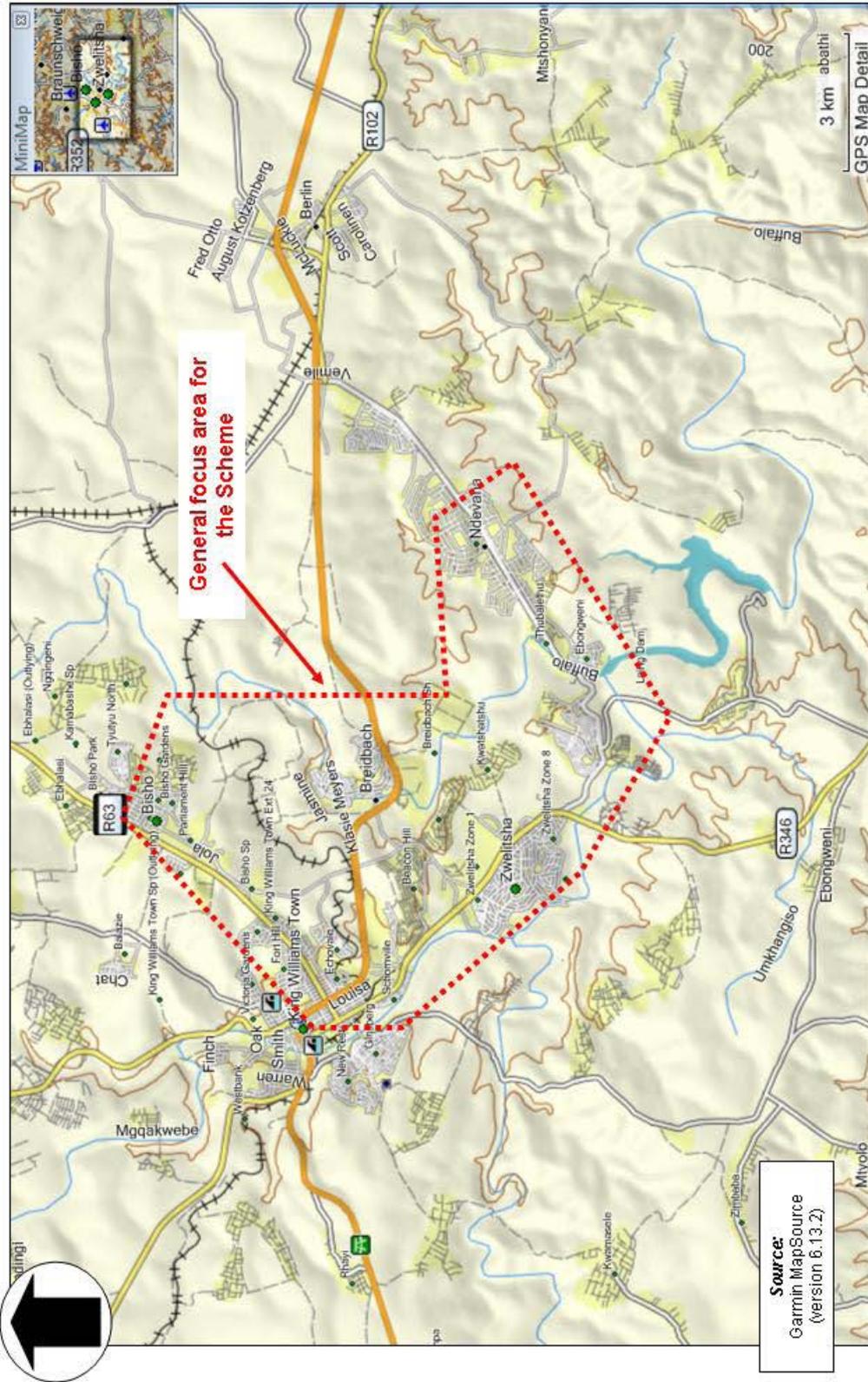
The proposed pipelines effectively radiate from Zwelitsha WWTW located on the southeastern edge of Zwelitsha towards Bhisho and Breidbach to the north and north east respectively, Sweetwaters and Kwatshatshu to the north east and Phakamisa and Ndevana to the east (refer to Figure 1). Approximate locations for the start and end of each proposed pipeline are listed below:

<b>Start</b>	<b>End</b>
Breidbach WWTW S32° 54' 00.87", E27° 26' 21.08"	S32° 54' 47.85", E27° 24' 41.49"
Bhisho WWTW S32° 50' 52.18", E27° 27' 31.45"	S32° 54' 03.50", E27° 26' 00.34"
KwaTshatshu North S32° 54' 19.89", E27° 26' 51.68"	S32° 55' 51.93", E27° 28' 18.60"
KwaTshatshu South S32° 54' 29.68", E27° 25' 58.47"	S32° 55' 39.84", E27° 27' 06.74"
Phakamisa S32° 55' 57.07", E27° 27' 57.89"	S32° 55' 56.33", E27° 26' 28.17"
Ndevana North S32° 55' 21.67", E27° 28' 51.43"	S32° 55' 51.56", E27° 28' 17.99"
Ndevana South S32° 55' 21.67", E27° 28' 51.43"	S32° 55' 50.06", E27° 28' 23.51"

The proposed pipeline routes run through and adjacent to a variety of land uses comprising a mixture of the following, based on site observations, a review of Google images and 1:50 000 map sheet 3227CD):

- Vacant undeveloped and/or agricultural land most likely used for subsistence and/or grazing.
- Formal and informal settlements.
- Yellowwoods River and various unnamed largely non-perennial drainage lines.
- Railway line.
- Surfaced and un-surfaced roads, including the N2 and R346, and/or their servitudes.
- Power lines.
- Dam and reservoirs – including one used in connection with Da Gama textiles.
- Cemetery.
- Borrow pits.

Surrounding land uses at the WWTW comprise predominantly residential properties at varying densities with some resemblance of a buffer zone being maintained between the WWTW and these properties. Vacant or undeveloped land and/or subsistence farming is also present. Both Bhisho and the Breidbach WWTW lie adjacent to the Yellowwoods River with the Schornville and Zwelitsha WWTW lying adjacent to the Buffalo River.



**Scale:**  
Refer to Image

**Date:**  
May 2009

**Description:**  
**FIGURE 2.1**  
General Location Plan...

**Project:**  
King William's Town Bulk Regional  
Sewage Scheme: Phases 2 - 7  
(Buffalo City Municipality)

Figure 1. The location of the proposed King William's Town bulk regional sewage scheme: phases 2 to 7, in the Eastern Cape Province.

## 5. Observations

No development activities associated with the proposed project had begun at the time of our visit, in accordance with heritage legislation. The following table summarises the heritage resources assessed, and our observations.

Heritage resource type	Observation
Living heritage	None were identified within the proposed development areas.
Ecofacts	None were identified within the proposed development areas.
Places, buildings, structures and equipment	None were identified within the proposed development areas.
Places to which oral traditions are attached or which are associated with living heritage	None were identified within the proposed development areas.
Historical settlements and townscapes	The proposed development will occur within the historical townscape of King William's Town. However, the nature of the development is in keeping with existing infrastructure associated with an established and expanding town.
Landscapes and natural features	None were identified within the proposed development areas.
Geological sites of scientific or cultural importance	None were identified within the proposed development areas.
Archaeological sites	None were identified within the proposed development areas.
Graves and burial grounds	None were identified within the proposed development areas.
Movable objects excluding any object made by a living person	None were identified within the proposed development areas.
Battlefields	None were identified within the proposed development areas.
Traditional building techniques	None were identified within the proposed development areas.

Table 1. Heritage resources and observations: King William's Town regional sewage scheme.

## 6. Recommended mitigation measures

None.

## 7. Recommended monitoring

None.

## **8. Summary of findings in terms of the National Heritage Resources Act 1999 Section 38(3)**

- The identification and mapping of all heritage resources in the area affected  
None.
- An assessment of the significance of such resources in terms of the heritage assessment criteria set out in regulations  
Not applicable.
- An assessment of the impact of development on such heritage resources  
Not applicable.
- An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development  
Not applicable.
- The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources  
The client has undertaken such consultation in terms of statutory requirements and retains the relevant documentation.
- If heritage resources will be adversely affected by the proposed development, the consideration of alternatives  
Not applicable.
- Plans for mitigation of any adverse effects during and after completion of the proposed development  
Not applicable.

## **9. Conclusion**

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

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

Relevant staff members may be contacted at the SAHRA Cape Town head office (Mariagrazia Galimberti telephone 021 462 4502; MGALIMBERTI@sahra.org.za).

## APPENDIX A

### STATUTORY REQUIREMENTS

Section 38(1) of the National Heritage Resources Act No 25 of 1999 requires a heritage impact assessment in case of:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- the construction of a bridge or similar structure exceeding 50 m in length;
- any development or other activity which will change the character of a site—
  - (i) exceeding 5 000 m<sup>2</sup> in extent; or
  - (ii) involving three or more existing erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- the re-zoning of a site exceeding 10 000 m<sup>2</sup> in extent; or
- any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.

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

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

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

- its importance in the community, or pattern of South Africa's history;
- its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
- its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.

A 'place' is defined as:

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

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

'Archaeological' means –

- material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 ( Act N o. 1 5 o f 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

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

'Grave' means a place of interment and includes the contents, headstone or other marker of and any other structures on or associated with such place. Amafa aKwaZulu-Natali and / or the South African Heritage Resources Agency will only issue a permit for the alteration of a grave if they are satisfied that every reasonable effort has been made to contact and obtain permission from the families concerned. eThembeni adheres to the following procedures:

- Notification of the impending removals (using appropriate language media and notices at the grave site);
- Consultation with individuals or communities related or known to the deceased;
- Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable;
- Procurement of a permit from Amafa aKwaZulu-Natali and / or the South African Heritage Resources Agency;
- Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery);
- Observation of rituals or ceremonies required by the families.

**APPENDIX B****METHODOLOGY**

Two eThembeni staff members inspected the area on 10, 11 and 12 August 2010. We completed a controlled-exclusive surface survey, where 'sufficient information exists on an area to make solid and defensible assumptions and judgements about where [heritage resource] sites may and may not be' and 'an inspection of the surface of the ground, wherever this surface is visible, is made, with no substantial attempt to clear brush, turf, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures that are observed by accident' (King 1989<sup>1</sup>).

We consulted various provincial databases, including historical, archaeological and geological sources and sourced a concise account of South Africa's pre and postcolonial history (available on request). We assessed the value and significance of heritage resources, as defined in the National Heritage Resources Act 1999 and the criteria contained in this Appendix.

Geographic coordinates were obtained with handheld Garmin 60 and nuvi 500 global positioning units. Photographs were taken with a Nikon Coolpix camera and a representative selection is included in Appendix C. A statement of independence and a summary of our ability to undertake this heritage impact assessment are included in Appendix D.

The assumptions and limitations of this heritage impact assessment are as follows:

- We have assumed that the description of the proposed project, provided by the client, is accurate.
- We have assumed that the public consultation process undertaken as part of the Environmental Impact Assessment is sufficient and adequate and does not require repetition as part of the heritage impact assessment.
- Soil surface visibility was moderate. Heritage resources might be present below the surface or in areas of dense vegetation and we remind the client that the Act requires that a developer cease all work immediately and notify Amafa should any heritage resources, as defined in the Act, be discovered during the course of development activities.
- No subsurface investigation (including excavations or sampling) were undertaken, since a permit from Amafa aKwaZulu-Natali is required to disturb a heritage resource.
- We are not able to provide a specialist palaeontological assessment, but do not deem such an assessment necessary due to the nature of both the project and the environment.
- A key concept in the management of heritage resources is that of non-renewability: damage to or destruction of most resources, including that caused by bona fide research endeavours, cannot be reversed or undone. Accordingly, management recommendations for heritage resources in the context of development are as conservative as possible.
- Human sciences are necessarily both subjective and objective in nature. We strive to manage heritage resources to the highest standards in accordance with national and

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<sup>1</sup> King, T. F. 1989. The archaeological survey: methods and uses. Quoted in Canter, L. W. 1996. Environmental impact assessment. Second Edition. New York: McGraw-Hill, Inc.

international best practice, but recognise that our opinions might differ from those of other heritage practitioners.

- We take no responsibility for the misuse of the information contained in this report.

### **Criteria for assessing the significance and value of heritage resource sites**

The following guidelines for determining site significance were developed by the South African Heritage Resources Agency in 2003. We use them in conjunction with tables of our own formulation (see that for the Southern African Iron Age, below) when considering intrinsic site significance and significance relative to development activities, as well as when recommending mitigatory action.

#### Type of Resource

- Place
- Structure
- Archaeological Site
- Palaeontological Site
- Geological Feature
- Grave

#### Type of Significance

##### 1. Historical Value

It is important in the community, or pattern of history

- Importance in the evolution of cultural landscapes and settlement patterns
- Importance in exhibiting density, richness or diversity of cultural features illustrating the human occupation and evolution of the nation, Province, region or locality.
- Importance for association with events, developments or cultural phases that have had a significant role in the human occupation and evolution of the nation, Province, region or community.
- Importance as an example for technical, creative, design or artistic excellence, innovation or achievement in a particular period
- It has strong or special association with the life or work of a person, group or organisation of importance in history
- Importance for close associations with individuals, groups or organisations whose life, works or activities have been significant within the history of the nation, Province, region or community.
- It has significance relating to the history of slavery
- Importance for a direct link to the history of slavery in South Africa.

##### 2. Aesthetic Value

It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group

- Importance to a community for aesthetic characteristics held in high esteem or otherwise valued by the community.
- Importance for its creative, design or artistic excellence, innovation or achievement.
- Importance for its contribution to the aesthetic values of the setting demonstrated by a landmark quality or having impact on important vistas or otherwise contributing to the

identified aesthetic qualities of the cultural environs or the natural landscape within which it is located.

- In the case of an historic precinct, importance for the aesthetic character created by the individual components which collectively form a significant streetscape, townscape or cultural environment.

### 3. Scientific Value

It has potential to yield information that will contribute to an understanding of natural or cultural heritage

- Importance for information contributing to a wider understanding of natural or cultural history by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.
- Importance for information contributing to a wider understanding of the origin of the universe or of the development of the earth.
- Importance for information contributing to a wider understanding of the origin of life; the development of plant or animal species, or the biological or cultural development of hominid or human species.
- Importance for its potential to yield information contributing to a wider understanding of the history of human occupation of the nation, Province, region or locality.
- It is important in demonstrating a high degree of creative or technical achievement at a particular period.
- Importance for its technical innovation or achievement.

### 4. Social Value

It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

- Importance as a place highly valued by a community or cultural group for reasons of social, cultural, religious, spiritual, symbolic, aesthetic or educational associations.
- Importance in contributing to a community's sense of place.

### Degrees of Significance

#### Rarity

It possesses uncommon, rare or endangered aspects of natural or cultural heritage

- Importance for rare, endangered or uncommon structures, landscapes or phenomena.

#### Representivity

It is important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects

- Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class.
- Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, Province, region or locality.

#### Sphere of Significance: High, Medium, Low

- International; National; Provincial; Regional; Local

### Southern African Iron Age

	Significance		
	low	medium	high
Unique or type site			Yes
Formal protection			Yes
Spatial patterning	?Yes	?Yes	?Yes
Degree of disturbance	75 – 100%	25 – 74%	0 – 24%
Organic remains (list types)	0 – 5 / m <sup>2</sup>	6 – 10 / m <sup>2</sup>	11 + / m <sup>2</sup>
Inorganic remains (list types)	0 – 5 / m <sup>2</sup>	6 – 10 / m <sup>2</sup>	11 + / m <sup>2</sup>
Ancestral graves			Present
Horizontal extent of site	< 100m <sup>2</sup>	101 – 1000m <sup>2</sup>	1000 + m <sup>2</sup>
Depth of deposit	< 20cm	21 – 50cm	51 + cm
Spiritual association			Yes
Oral history association			Yes
➤ Research potential			High
➤ Educational potential			High

### The management of cultural landscapes

The Cultural Landscape Foundation<sup>2</sup> defines cultural landscapes as follows:

A cultural landscape is a geographic area that includes resources and natural resources associated with a historic event, activity, or person. Sometimes cultural landscapes are the result of one person or group of people acting upon the land. Other times they are the result of an idea one person or a group had and then created at that time. Cultural landscapes can range from thousands of acres of rural lands to a small homestead with a front yard of less than one acre. They include grand estates, farmland, public gardens and parks, college campuses, cemeteries, scenic highways and even industrial sites.

Four general types of Cultural Landscapes, not mutually exclusive, are:

- Historic Sites
- Historic Designed Landscapes
- Historic Vernacular Landscapes
- Ethnographic Landscapes

Cultural Landscapes can:

- Be man-made expressions of visual and spatial relationships.
- Serve as texts and narratives of cultures.
- Be valuable expressions of regional identity.
- Be works of art that are part of our national heritage.
- Exist in relationship to their ecological contexts.

<sup>2</sup> Though professional techniques for identifying, documenting, and managing cultural landscapes have evolved rapidly in the past 30 years, the results of the professionals' work often fails to reach the general public. Consequently, many of the places in which we live, work, and play often change considerably—sometimes over years and sometimes overnight! The Cultural Landscape Foundation is the only not-for-profit foundation in America dedicated to increasing the public's awareness of the importance and irreplaceable legacy of cultural landscapes. Through education, technical assistance, and outreach, the Cultural Landscape Foundation aims to broaden the support and understanding for cultural landscapes nationwide in hopes of saving our priceless heritage for future generations. The CLF achieves this mission by: (1) heightening the awareness of those who impact cultural landscapes; (2) assisting those groups and organizations who are working to increase the appreciation and recognition of cultural landscapes; and, (3) developing educational tools for young people to better connect them to their cultural landscape environs.

What are cultural landscapes? by Alice E. Ingerson, Institute for Cultural Landscape Studies<sup>3</sup>

Virtually all landscapes have cultural associations, because virtually all landscapes have been affected in some way by human action or perception. Therefore, the Institute for Cultural Landscape Studies does not use the phrase "cultural landscape" to mean a special type of landscape. Instead, we use "cultural landscape" to mean a way of seeing landscapes that emphasizes the interaction between human beings and nature over time. ICLS also works with many other organizations, some of which have contrasting or even conflicting definitions of "cultural landscape":

individual, special, aesthetic, collective, representative, useful, cultural, related to the arts (consciously designed objects), ideas of enduring value related to the everyday beliefs and practices of a group of people, the work of landscape architects or garden designers, scenery portrayed in a painting or photograph, or that is seen as worth painting or photographing, the land that can be seen from a single vantage point (usually larger than a "site", smaller than a "region"), "nearly everything we see when we go outdoors" — Peirce Lewis 1979

The National Park Service and the National Register of Historic Places, as well as organizations that look to these agencies for management models and standards, use the operational definition of "cultural landscape" from the 1996 Secretary of the Interior's . . . Guidelines for the Treatment of Cultural Landscapes:

a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

Historic landscapes, unlike works of art, have to function as contemporary environments — we have literally to enter and become involved with them. — Catherine Howett 1987

Much public discussion about cultural landscapes is about preserving special or historic places. Yet the definition of "special" varies over time, among different cultures, and in different places. A landscape valued by one group may be simply invisible, or even offensive, to another. Next to an official historic district may be a neighborhood that is not eligible for any special treatment but has deep meaning and associations for the people who live there. Mobile homes may be critical to a farm economy, though they jar the sensibilities of visitors expecting to see only white clapboard houses and wooded hillsides from a "scenic overlook" in a state forest. The historic district and the ordinary neighbourhood, working farms and protected forests, are all cultural landscapes. Even when landscape preservation standards are broadened to include a wide range of landscape types, strict preservation is not always an appropriate stance. Designers and communities may also choose to transform existing landscapes or create new ones. Managing cultural landscapes thus involves planning for positive change as well as preventing negative change.

<sup>3</sup> From the website of the Institute for Cultural Landscape Studies of the Arnold Arboretum (<http://www.icls.harvard.edu>), © The President and Fellows of Harvard College. The Institute for Cultural Landscape Studies was formed in 1997 to support the emerging community of professionals and volunteers who manage and interpret landscapes with a significant history of human use, particularly in the northeastern United States. These practitioners work with a wide variety of places, from historic gardens and public parks to urban streetscapes, broad agricultural or industrial regions, and conservation or ecological reserves. These landscapes are neither static nor self-contained. Managing them requires active experimentation and continuous learning, to understand how past events and decisions produced today's landscapes, and how today's decisions and events are already producing tomorrow's landscapes. The Institute for Cultural Landscape Studies worked with nonprofit organizations, public agencies, and colleges and universities to capture place-based knowledge about cultural landscapes, and to respond to emerging issues.

**APPENDIX C**

**PHOTOGRAPHS**



**Plate 1.** Bhisho waste water treatment works.



**Plate 2.** Breidbach waste water treatment works.



**Plate 3.** Schornville waste water treatment works.



**Plate 4.** Zwelitsha waste water treatment works.

## APPENDIX D

### SPECIALIST COMPETENCY AND DECLARATION OF INDEPENDENCE

#### Specialist competency

Len van Schalkwyk is accredited by the Cultural Resources Management section of the Association of South African Professional Archaeologists to undertake heritage impact assessments in South Africa.

Mr van Schalkwyk has a master's degree in archaeology (specialising in the history of early farmers in southern Africa) from the University of Cape Town and 20 years' experience in heritage management. He has worked on projects as diverse as the establishment of the Ondini Cultural Museum in Umlazi, the cultural management of Chobe National Park in Botswana and various archaeological excavations and oral history recording projects. He was part of the writing team that produced the KwaZulu-Natal Heritage Act 1997. He has worked with many rural communities to establish integrated heritage and land use plans and speaks good Zulu.

Mr van Schalkwyk left his position as assistant director of Amafama KwaZulu-Natali, the provincial cultural heritage authority, to start eThembeni. During the past ten years he has directed more than 800 heritage impact assessments throughout South Africa, as well as in Mozambique.

Beth Wahl has a BA Honours African Studies (first class), with archaeology and sociology majors, and has completed various Masters courses in Heritage and Tourism at the University of KwaZulu-Natal. She is a member of the Association of Southern African Professional Archaeologists (ASAPA).

Ms Wahl has undertaken more than 800 heritage impact assessments and monitoring projects throughout South Africa. She was an excavator and logistical coordinator for Glasgow University Archaeological Research Division's heritage programme at Isandlwana Battlefield; has undertaken numerous rock painting surveys in the uKhahlamba / Drakensberg mountains, northern KwaZulu-Natal, the Cederberg and the Koue Bokkeveld in the Cape Province; and was the principal excavator of Scorpion Shelter in the Cape Province, and Lenjane and Crystal Shelters in KwaZulu-Natal.

Ms Wahl has undertaken surveys and monitoring of archaeological sites, excavation of a human skeleton and subsequent community liaison, and written a heritage management plan for Catalina Bay in the iSimangaliso Wetland Park World Heritage Site. She compiled the first cultural landscape management plan for the Mweni Valley, northern uKhahlamba / Drakensberg, and undertook an assessment of and made recommendations for cultural heritage databases and organisational capacity in parts of Lesotho and South Africa for the Global Environment Facility of the World Bank for the Maloti Drakensberg Transfrontier Conservation and Development Area. She developed the first cultural heritage management plan for the uKhahlamba Drakensberg Park World Heritage Site, following UNESCO recommendations for rock art management in southern Africa.

**Declaration of independence**

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