

**BHEKUZULU, EPANGWENI: POTABLE WATER
RETICULATION TO WARDS 1-5 AND PORTION OF
WARD 6, INKOSI LANGALIBALELE MUNICIPALITY,
KWAZULU-NATAL**

Phase 1 Heritage Impact Assessment

June 2019

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EXECUTIVE SUMMARY

The applicant, uThukela District Municipality, proposes to upgrade and extend water reticulation to the settlements of Bhekuzulu - Epangweni (Wards 1 to 5 and a portion of Ward 6) in order to supply water to the supply zones of reservoirs A1 and A2.

The project consists of the laying of approximately 26.2 kilometres of pipeline covering some 2000 hectares therefore it triggers sections 41 (1)(a) and section 41 (1)(c)(i) of the KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No 5 of 2018) which lists developments or activities that may require an HIA. Section 41 (1)(a) refers to: “the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length” whilst section 41 (1)(c)(i) refers to “any development or other activity which will change the character of a site - exceeding 5000m² in extent”.

The settlements in which the project is to take place are located in the Inkosi Langalibalele Municipality. The settlements are situated approximately 25km north-west of the town of Estcourt along the P10-1 road.

A site inspection was undertaken on 14 and 15 May 2019 and again on 10 June 2019. Much of the project area is disturbed by residential settlement. Many areas had a very thick grass cover due to the good summer rains making visibility difficult especially of low-lying and unmarked graves, archaeological sites, etc. Many of the access roads, some of which are very narrow, were in poor condition due to the heavy rains making access to some areas difficult.

Due to the rural nature of the project area, it was anticipated and confirmed by the site inspection that many graves are located both inside properties / homesteads and outside properties. The largest number of graves identified during the site inspection were found within the boundaries of homesteads where it is understood that they will not be affected by the proposed reticulation project. In addition, the remains of kraals and stone walling were found during the survey of the project area.

The South African fossil sensitivity map indicates that the project area falls into an area of very high fossil sensitivity interspersed with areas of moderate sensitivity and less areas of insignificant sensitivity. An area of high fossil sensitivity requires a field assessment whilst areas of moderate sensitivity require, at a minimum, a desktop palaeontological assessment.

A desktop palaeontological study, that was undertaken for a related project in 2016, namely the proposed Bhekuzulu, Epangweni and Ennersdale water supply scheme located to the east of this

project, indicated that the development site was also located in a very high sensitive palaeontological zone and all exposures or excavations might contain highly important fossil remains of Permian and Triassic age to Quaternary age, both on the middle slopes, foot slopes and along small water courses and it was probable that Adelaide Subgroup rocks, that has significant fossils, would be exposed through erosion over the entire area of the development. The study concluded that it was highly likely that exposures of fossiliferous rocks would be affected by the development and fossils might be exposed and destroyed during construction of the pipelines.

Although this project under discussion is located west of the area that was investigated in 2016, it is likely that similar geology will be found hence it is recommended that a desktop palaeontological study is undertaken for this project to determine the way forward in terms of the impact of the project on fossils.

The relocation of graves is not recommended as graves are highly significant and there are many traditional, cultural and personal sensitivities and norms concerning the removal of graves. However, because of the extent of the project and the number of grave sites found in the project area, the relocation of some graves may be unavoidable. This needs to be done with a high degree of consultation and sensitivity and must meet the guidelines and criteria for consultation as set out in the relevant regulations.

It is recommended that the pipelines are constructed within the road reserve where possible to avoid impacting on graves. It is recommended that residents be engaged with once construction commences regarding the location of graves that may be impacted by the project. If, during construction, graves are uncovered then work within 5 m of the find must stop immediately and the contractor and project manager informed as well as the provincial heritage resources authority, the Amafa and Research Institute. Application must be made to the Institute for the rescue and relocation of such grave/s. It is also recommended that, where possible, a buffer of at least 2m must be maintained between graves and the working area of the pipelines to avoid accidental damage to the graves. This also applies to the old kraals.

The proposed Bhekuzulu reticulation project may proceed as long as the recommendations and mitigation measures proposed in this report are implemented as well as those made in the recommended desktop palaeontological study.

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APPENDIX 1

List of heritage resources

I, **Jean Lois Beater**, act as an independent specialist for this project and I do not have any vested interest either business, financial, personal or other, in the proposed activity other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014.

AUTHOR DETAILS

Name	Qualification	Professional Registration
Jean Beater (JLB Consulting)	MA (Heritage Studies) MSc (Environmental Management)	Member of Association of South African Professional Archaeologists (No. 349) Member of IAIAasa (No. 1538)

1. INTRODUCTION

The applicant, uThukela District Municipality, proposes to upgrade and extend water reticulation to the settlements of Bhekuzulu - Epangweni (Wards 1 to 5 and a portion of Ward 6) in order to supply water to the supply zones of reservoirs A1 and A2. The settlements are situated in the Inkosi Langalibalele Municipality in KwaZulu Natal.

The project consists of the laying of approximately 26.2 kilometres of <360mm PVC pipe (diameters will range from 355 – 50mm) with a peak flow through the system of below 100l/s (Hornby Smyly Glavovic 2019:2). The construction specifications for the pipelines will be as follows: the pipelines will be constructed with 800mm cover on average (except through watercourses / dongas / rivers / valley crossings) so the trench depth will vary between 1.4m and 0.95m and the width of the trenches will also vary (based on the pipeline diameter and the number of pipes that run parallel in the trench) from 0.5m to approx. 1.4m. On average, the pipeline construction widths will be in the region of 5 to 8m as the majority of excavation is done by machine and will also depend on access and ground conditions (Maud, 2019).

This report serves as a Phase 1 Heritage Impact Assessment (HIA) for the proposed Bhekuzulu - Epangweni potable water reticulation project.

2. LEGISLATIVE BACKGROUND

The project consists of the laying of approximately 26.2 kilometres of pipeline covering some 2000 hectares hence it triggers sections 41 (1)(a) and section 41 (1)(c)(i) of the KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No 5 of 2018) which lists developments or activities that may require an HIA. Section 41 (1)(a) refers to: *“the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length”* whilst section 41 (1)(c)(i) refers to *“any development or other activity which will change the character of a site - exceeding 5000m² in extent”*.

The project may also impact on protected graves, structures, archaeological and palaeontological resources that are protected in terms of sections 37, 38, 39, and 40 of the KwaZulu-Natal Amafa and Research Institute Act, 2018.

In terms of Section 3 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), heritage resources are listed as:

- (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 paleontological 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 in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa; and
- (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, photographic 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 Phase I HIA was undertaken to assess whether any heritage resources will be impacted by the Bhekuzulu – Epangweni potable water reticulation project.

3. LOCATION

Inkosi Langalibalele Municipality is situated within the Uthukela District Municipality and the settlements of Bhekuzulu, Epangweni and Maqabaqabeni, in which the project will take place, are situated approximately 25km north-west of the town of Estcourt along the P10-1 road.

The affected properties are:

Farm Assegai Hoek No 1410

Farm Drakensberg Location 2 No 9605

Farm Maritz Dam No 1256

Farm Moodie No 2153

Portion 1 of Farm Portington No 12395

Portion 3 of Farm Portington No 12395

Portion 4 of Farm Portington No 12395

Portion 2 of Farm Solferino No 2127

Portion 3 of Farm Solferino No 2127 (Hornby Smyly Glavovic 2019:2)

Figures 1 and 2 below provide images of the location of project as well as the layout of the reservoir A1 and reservoir A2 supply zones.

4. TERMS OF REFERENCE

Undertake a Phase 1 Heritage Impact Assessment in order to determine the possible existence of heritage resources, as listed above, that could be impacted by the proposed potable water reticulation development. Provide mitigation measures to limit or avoid the impact of the proposed reticulation project on heritage resources (if any).

Submit the HIA report to the provincial heritage resources authority, namely the KwaZulu-Natal Amafa and Research Institute (hereafter referred to as the Institute), for their consideration and comment.

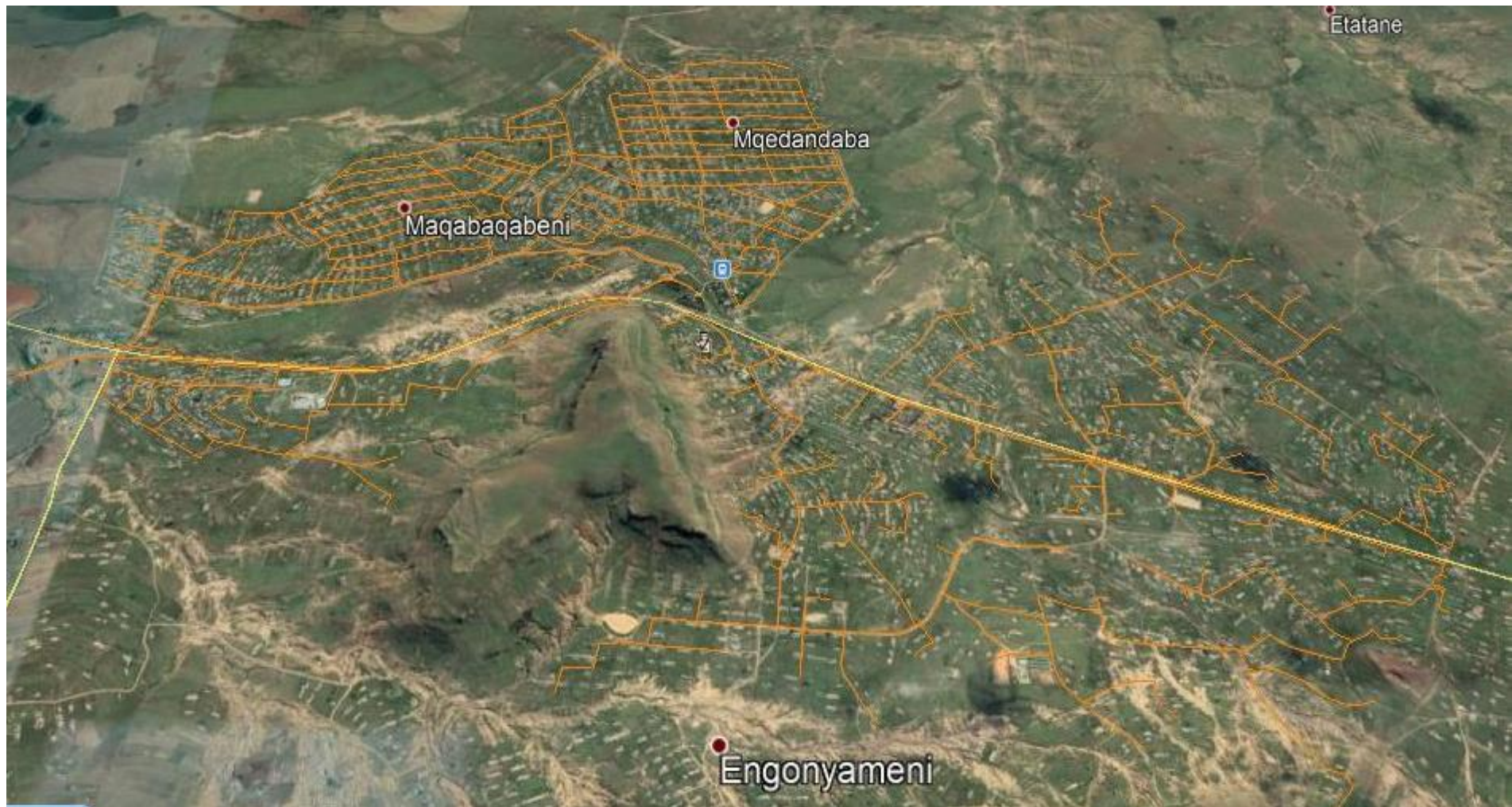


Figure 1: Aerial view of reticulation layout depicted in orange

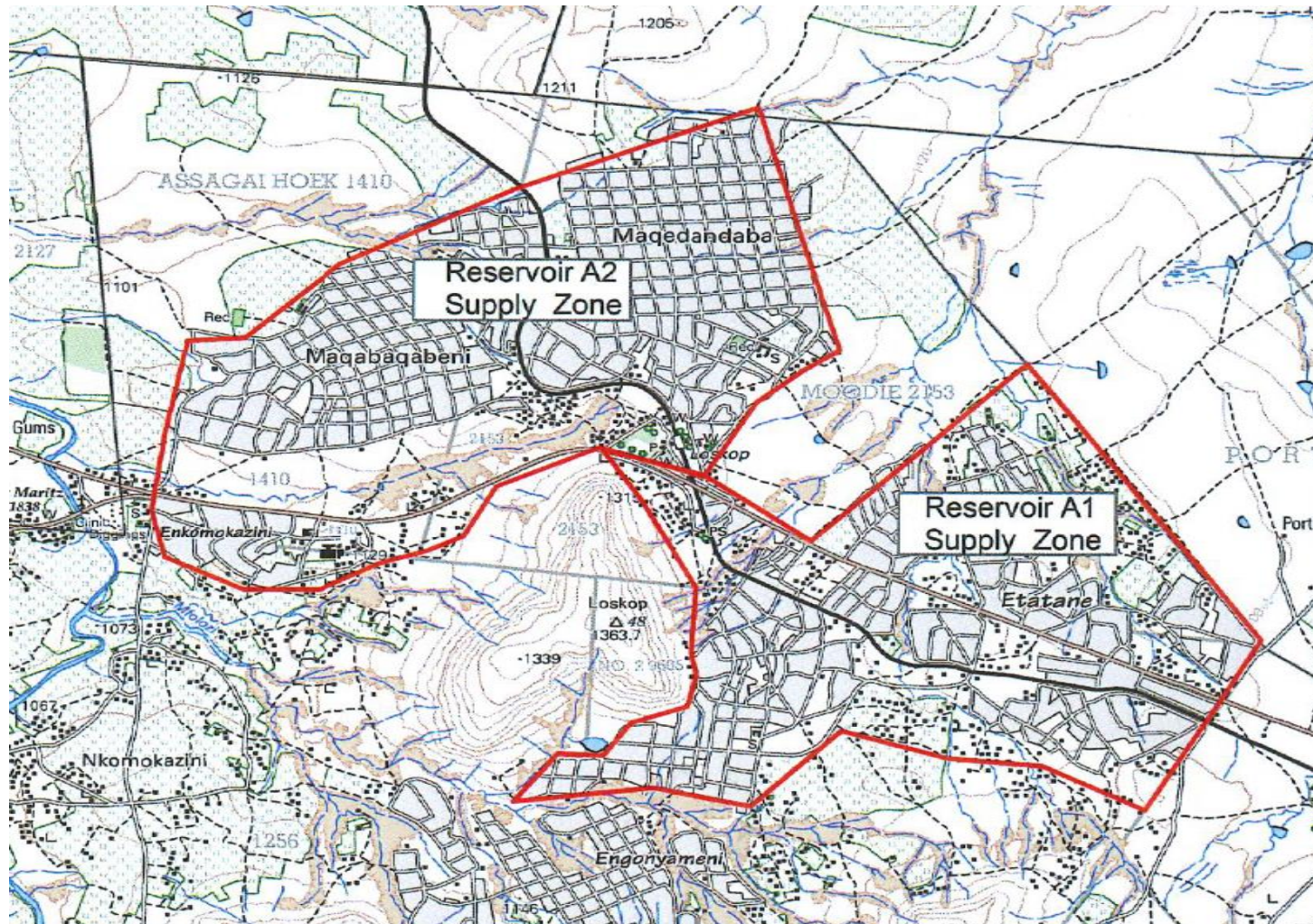


Figure 2: Locality map of reservoir A1 and A2 supply zones

5. METHODOLOGY AND CONSTRAINTS

A survey of literature, including other heritage impact assessment (HIA) reports completed for the surrounding area, was undertaken in order to ascertain the history of the area and what type of heritage resources have or may be found in the area of development.

A site inspection was undertaken on 14 and 15 May 2019 and again on 10 June 2019. A meeting with Councillor Mdakane and his Ward Committee from Ward 4 took place on the morning of 14 May 2019 to introduce the Environmental Assessment Practitioner (EAP) and the heritage team to the Councillor and his Committee.

During the inspection of the north-western section of the reservoir A1 supply zone, the heritage team met the local Induna of that area who indicated that he was not happy that the team had not been introduced to him and the community and that the Ward Councillor from Ward 4 was not their Ward Councillor. He requested that the heritage team leave the area until a meeting had been organised where the project could be discussed with the community and the heritage team introduced. The heritage team left the area as requested.

On 6 June 2019, a meeting was held with the relevant Ward Councillor (Councillor Mbongwa) where the project was explained to those present and the heritage team introduced. At the meeting, it was requested that a community meeting be held on Saturday, 8 June 2019 where the project would be explained and the community alerted to the fact that the heritage team would be inspecting the area during the following week. On 10 June 2019, the heritage team undertook an inspection of the outstanding area accompanied by two members of the Project Steering Committee (PSC), namely, Mr. Philani Mshengu and Ms Nokwengeza Mbedla.

Much of the project area is disturbed by residential settlement. Many areas had a very thick grass cover due to the good summer rains making visibility difficult especially of low-lying and unmarked graves, archaeological sites, etc. Many of the access roads, some of which are very narrow, were in poor condition due to the heavy rains making access to some areas difficult.

6. HISTORICAL BACKGROUND OF THE STUDY AREA

Sites belonging to the Early Stone Age period in the Drakensberg are mostly characterised by a few surface scatters and individual stone tools usually in the close vicinity of water. Middle Stone Age sites in the Drakensberg region occur as surface scatters as well as deep cave deposits. The stone tool assemblages belonging to the immediate ancestors of the San or Bushmen have been termed Later Stone Age (LSA). Literally hundreds of LSA sites are located in the Drakensberg region. Evidence from Good Hope shelter 1 near the bottom of Sani Pass suggests that the earliest archaeological evidence for San people in the KwaZulu-Natal portion of the Drakensberg dates back to approximately 8 000 years ago (Active Heritage 2015:6-8).

Archaeological evidence shows that Bantu-speaking agriculturists first settled in southern Africa around AD 300. The earliest agricultural sites in KwaZulu-Natal date to between AD 400 and 550. All are situated close to sources of iron ore, and within 15 km of the coast. From 650 onwards, climatic conditions improved, and agriculturists expanded into the valleys of KwaZulu-Natal, where they settled close to rivers in savanna or bushveld environments. Metal production was a key activity since it provided the tools of cultivation and hunting.

In general, sites dating to between 1050 and 1250 are smaller than most earlier agriculturist settlements. This new pattern of settlement was in some way influenced by a changing climate, for there is evidence of increasing aridity from about AD 900. A new pattern of economic inter-dependence evolved that continued into the colonial period nearly 500 years later.

In more 'recent' times, the expansion of the Zulu kingdom under King Shaka around 1818 had a major impact on Iron Age settlement in the region. Various chieftains were attacked, and people fled across the Maloti-Drakensberg region in search of safer settlements elsewhere. In addition, the Voortrekkers arrived in Natal over the Drakensberg and Nkosi Langalibalele and his followers fled the colonial government after they demanded that his followers register their firearms. He retreated up the Bushman River valley before being captured in Lesotho. He was banished to Robben Island making him the first South African to be imprisoned there. His grave is situated at Giants Castle within the WHS (Derwent 2006:88).

A section of the pipeline in reservoir A2 supply zone is situated relatively close to the memorial commemorating the sod laager of Gert Maritz, one of the Voortrekker leaders. He established the laager in 1838 on the banks of the Little Tugela River / Injesutu River.

In 2000, the World Heritage Committee inscribed the uKhahlamba Drakensberg Park World Heritage Site (WHS) as a haven for many threatened and endemic species and for its wealth of rock paintings made by the San people over a period of 4000 years. Located in the Drakensberg Mountains in an area covering 242,813 hectares, the Park is the largest protected area along the Great Escarpment of Southern Africa (State of Conservation Report 2016:11). The proposed Bhekuzulu project area is situated very close to the designated buffer zone of the WHS (see **Figure 3** below).

The buffer is, according to the Concept Development Plan (Ezemvelo KwaZulu-Natal Wildlife 2011:103), a demarcated area in proximity to a WHS of high biodiversity, cultural heritage, water and landscape importance where ownership is vested with private bodies or indirectly local user communities and where land management rights vest in public rather than exclusively conservation specific agencies and where land management is approached as a partnership between conservation authority and those with user rights. This is outside of a protected area ... and is an area in which the protected area managers work collaboratively with neighbours and municipalities to try to ensure land uses that are compatible with the protected area.

It is the understanding of the specialist that the EAP will submit the Basic Assessment documentation for the project, including this report, to the relevant conservation authorities for their comment.

uKhahlamba Drakensberg Park World Heritage Site Zonation

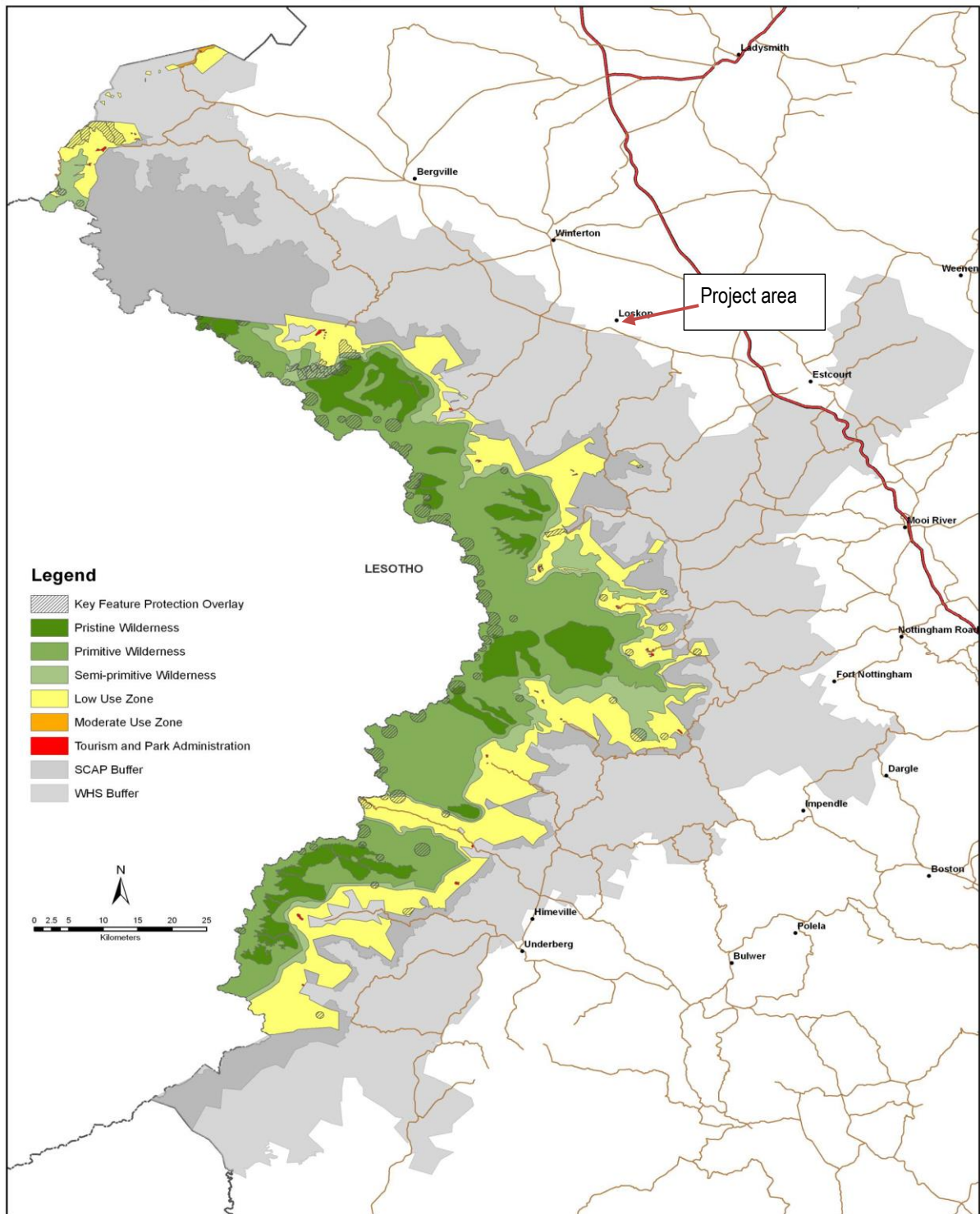


Figure 3: uKhahlamba-Drakensberg Park WHS and WHS buffer

7. RESULT OF SITE INSPECTION

The settlements where the reticulation is to be laid is rural in nature and quite densely populated. The settlements are highly disturbed by human habitation and the many access roads found amongst the homesteads.



Figure 4: Access road with residences in background

Due to the rural nature of the project area, it was anticipated and confirmed by the site inspection that many graves are located both inside properties / homesteads and outside homestead boundaries. The largest number of graves found during the site inspection were found within the boundaries of homesteads where it is understood that they will not be affected by the project. The remains of kraals and stone walling were also found during the inspection of the project area.

Several abandoned homesteads, with potential associated graves, can be seen on Google Earth in the reservoir A1 supply zone on the foot slopes of the Loskop / Phasiwe Mountain (see **Figure 5** below). The closest site is situated approximately 40m from the pipeline indicated in the figure below. Several were inspected. Immediately north of the reservoir A2 supply zone (Maqabaqabeni) many abandoned kraals can also be seen on Google Earth but these sites fall outside the project area with the closest abandoned homestead situated about 65 m north-west of a proposed pipeline.



Figure 5: Google Earth image of abandoned homesteads

Many of the graves found were made from mounds of rock or outlined with rocks, but several were identified only by their outline/indentation/mound amongst the grass as can be seen in **Figure 6** below. Many of the graves do not have inscribed headstones.



Figure 6: Outline of grave

Some of the graves, although found inside properties, were situated very close to the narrow access roads between the homesteads, as can be seen in the figure below.



Figure 7: Two graves on boundary between homestead and access road

Graves were also found within a road reserve within reservoir A1 supply zone where they will be directly impacted by the proposed water reticulation project (see below).



Figure 8: Grave along road reserve



Figure 9: Graves within boundary of homestead



Figure 10: Fenced graves in open field



Figure 11: Grave with rough headstone



Figure 12: Several graves within homestead

Several old kraals were found during the site inspection. The potential of graves within or in close proximity to the kraals is high hence they should be avoided by the proposed water reticulation project where possible.



Figure 13: Remains of stone walling amongst thick grass



Figure 14: Remains of kraal close to road

The South African fossil sensitivity map indicates that the project area falls into an area of very high fossil sensitivity interspersed with areas of moderate sensitivity and less areas of insignificant sensitivity as indicated in **Figure 15** below. An area of high fossil sensitivity requires a field assessment whilst areas of moderate sensitivity require, at a minimum, a desktop palaeontological assessment.

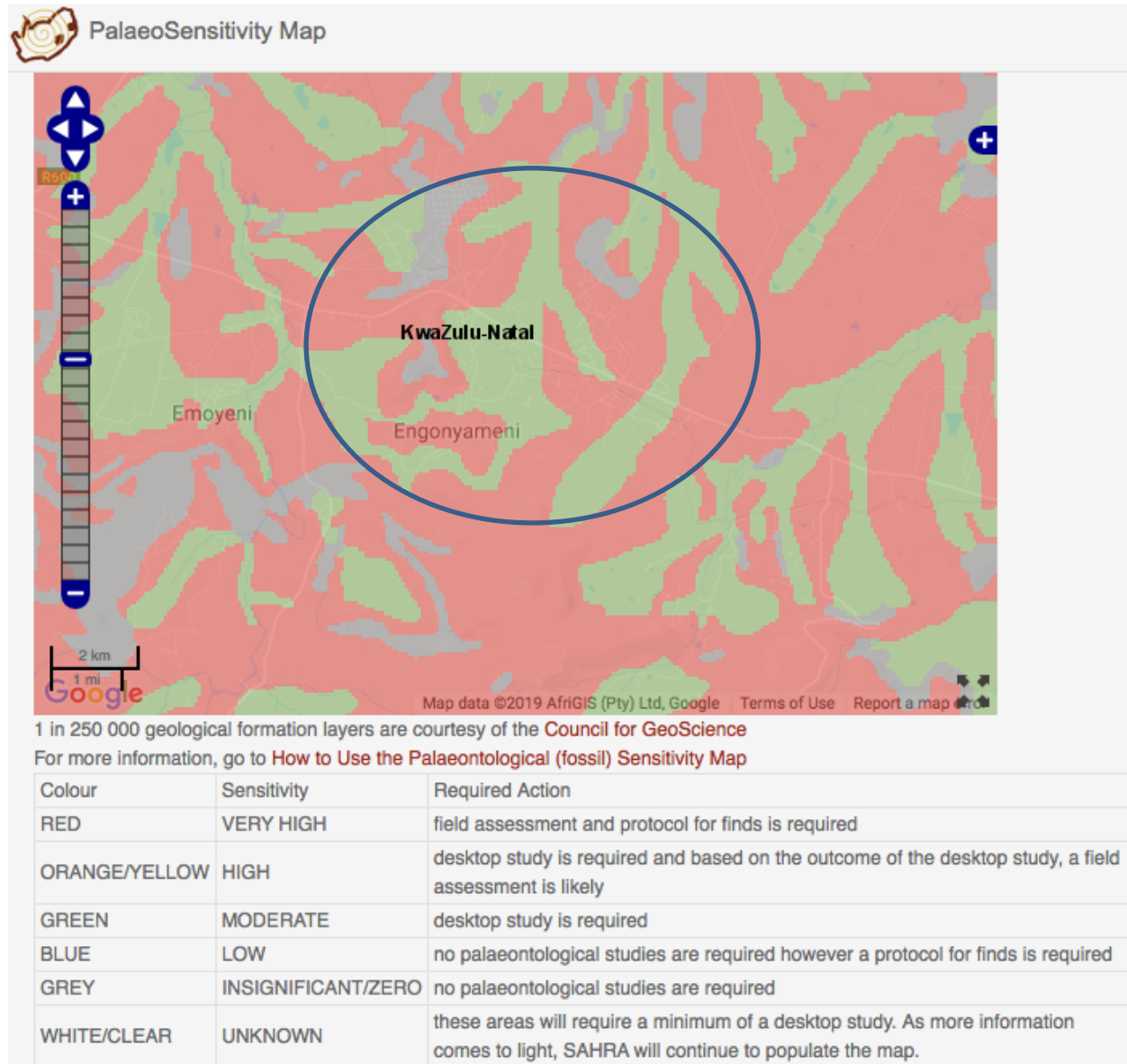


Figure 15: Fossil sensitivity of project areas indicated with blue oval

A desktop palaeontological study, that was undertaken for a related project in 2016, namely the proposed Bhekuzulu, Epangweni and Ennersdale water supply scheme located to the east of this project, indicated that that development site was located in a very high sensitive palaeontological zone and all exposures or excavations might contain highly important fossil remains of Permian and Triassic age to Quaternary age, both on the middle slopes, foot slopes and along small water courses and it was probable that Adelaide Subgroup rocks would be exposed through erosion

over the entire area of the development. The study indicated that a very high palaeontological sensitivity was allocated to rocks of the Adelaide Subgroup due to the extremely rich fossil assemblages of the *Daptocephalus* and *Lystrosaurus* Assemblage Zones as well as highly significant plant fossils of the *Glossopteris* Assemblage and fossils of insect wings described from this unit. While no significant fossils have been described from the Masotcheni Formation or Alluvium deposits in this part of South Africa, significant fossils are known from similar deposits in other parts of the country and a very high palaeontological sensitivity was therefore allocated to these areas due to the extreme likelihood that significant fossils would be exposed in all the gullies washed open and in all excavations for the pipelines to depths of 1m and more. The study concluded that it was highly likely that exposures of fossiliferous rocks would be affected by the development and fossils might be exposed and destroyed during construction of the pipelines and it recommended that a palaeontologist be appointed to record and collect fossils according to SAHRA and Amafa specifications as part of a Phase 1 Palaeontological impact assessment before and also during excavation of all the trenches except in the few areas underlain by dolerite (Anderson 2016:37-38)

Although this project is located west of the area that was investigated in 2016, it is likely that similar geology will be found in the project area. It is therefore recommended that a desktop palaeontological study is undertaken for this project to determine the way forward in terms of the potential impact of the water reticulation project on fossils.

Appendix 1, which is attached to this report, provides a list of graves and other heritage sites found within 20m of the pipeline including those within fenced homesteads. The graves and sites found more than 20m from the pipeline alignments are included in the list in the event that some pipeline alignments are amended or adjusted and, in the event that the water reticulation project is expanded in the future.

8. DISCUSSION, RECOMMENDATIONS AND CONCLUSION

The site inspection revealed many graves along or close to the pipeline alignments as well as several old kraals where graves could be found.

The old kraals and remains of stonewalling are protected by section 37 (1)(a) of the Amafa and Research Institute Act (2018), which states that no structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without prior written approval of the Institute having been obtained on written application to the Institute. In

addition, the possibility of graves been found within the old kraals makes them highly significant from a heritage perspective.

All human remains have high heritage significance at all levels for their spiritual, social and cultural values. Graves and burial sites are protected by section 39 (1) of the KwaZulu-Natal Amafa and Research Institute Act, which refers to the general protection of informal and private burial grounds. In terms of sub-section (1) that states that no grave or burial ground older than 60 years, or deemed to be of heritage significance by a heritage authority –

- (a) not otherwise protected by this Act; and
- (b) not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, inundated, removed from its original position, or otherwise disturbed without the prior written approval of the Institute having been obtained on written application to the Institute and in terms of the regulations to this Act.

The relocation of graves is not recommended as graves are highly significant to people and there are many traditional, cultural and personal sensitivities and norms concerning the removal of graves. However, because of the extent of the project and the number of grave sites in the project area, removal of some graves may be unavoidable. This needs to be done with a high degree of consultation and sensitivity. It is stated in section 39 (2) of the above-mentioned Act, that the Institute may only issue written approval once it is satisfied that-

- (a) the applicant has provided evidence of efforts to consult with communities or descendants who may have an interest in the grave/s, using the guidelines and criteria for consultation set out in regulations; and
- (b) the applicant and relevant communities or descendants have reached agreement regarding the grave/s.

The following is recommended:

- The pipelines are constructed within the road reserve as far as possible to avoid impacting on graves.
- Residents are engaged with once construction commences regarding the location of graves that may be impacted by the project.
- If, during construction, graves are uncovered then work within 5 m of the find must stop immediately and the contractor and project manager informed as well as the Institute. If the grave/s cannot be avoided by the project, then application must then be made to the Institute for the rescue and relocation of such grave/s.

- Where possible, a buffer of at least 2m must be situated between grave/s and the work area of the pipelines to avoid accidental damage to the grave/s. This also applies to the old kraals.
- A desktop palaeontological study is undertaken.

The proposed Bhekuzulu reticulation project may proceed as long as the recommendations and mitigation measures proposed in this report are implemented as well as those made in the recommended desktop palaeontological study.

9. MITIGATION MEASURES

- For any chance heritage finds, all work must cease in the area affected and the Contractor must immediately inform the Project Manager. A registered heritage specialist must be called to site to inspect the finding/s. The provincial heritage resource agency, the KwaZulu-Natal Amafa and Research Institute (the Institute), must be informed about the finding/s.
- The heritage specialist will assess the significance of the resource and provide guidance on the way forward.
- Permits must be obtained from the Institute if heritage resources are to be removed, destroyed or altered.
- Under no circumstances may any heritage material be destroyed or removed from site unless under direction of a heritage specialist.
- Should any recent remains be found on site that could potentially be human remains, the South African Police Service (SAPS) as well as the Institute must be contacted. No SAPS official may remove remains until the correct permit/s have been obtained.
- All recommendations made by the desktop palaeontological assessment must also be implemented.

10. REFERENCES

Active Heritage. 2015. *Cultural heritage impact assessment of the proposed 1.6 million m³ dam, Farm Assegai Hoek, No. 1410 for the authorised Bhekuzulu Empangeni water supply scheme, located near Estcourt, uThukela District Municipality, KwaZulu-Natal*

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