

**ZWELIBOMVU 2 RESERVOIR INLET PROJECT,
ETHEKWINI MUNICIPALITY, KWAZULU-NATAL**

Phase 1 Heritage Impact Assessment

28 June 2019

**FOR: ECA Consulting
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EXECUTIVE SUMMARY

The applicant, eThekweni Municipality Water and Sanitation Unit, proposes the installation of a 500mm diameter steel water pipeline of approximately 10km to the Zwelibomvu 2 Reservoir. The pipeline will connect the Shongweni Reservoir to the Zwelibomvu 2 Reservoir. The intention is to replace the existing 300mm diameter inlet pipeline to Zwelibomvu. The new pipeline will be installed within 2m of the existing line and will follow the same route as the existing pipeline. The existing pipeline is constantly bursting which results in a disruption of the water supply to residents and consumers. In addition, water demand in the area has increased due to increasing number of settlements within the area. The upgrading of the pipeline to a 500mm diameter steel water pipeline will result in a more reliable water supply as well as addressing the increasing demand for water in the Zwelibomvu area.

The length of the pipeline is approximately 10 km in length hence it triggers section 41 (1)(a) 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. The relevant section of the Act refers to the following development: “the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length”.

The proposed pipeline is located in the areas of Ntshongweni and Zwelibomvu which are rural areas in the outer west area of Durban. An inspection of the project site was undertaken on 18 June 2019. Visibility was good along most of the proposed pipeline route.

Residents pointed out several grave sites that are situated near the replacement pipeline route between the Zwelibomvu Reservoir and the edge of the valley.

On the Shongweni Reservoir side of the valley, several heritage resources were found close to the pipeline route. The remains of a structure were found very close to the pipeline route along Wathanga Road. It is recommended that the pipeline avoid the structure as the age and use of the structure could not be determined. Several grave sites were found along Wathanga Road including a large burial site where at least 10 graves were found.

All heritage resources found during the site inspection are listed in a table in the main body of this report together with mitigation measures.

According to the South African fossil sensitivity map, the proposed project falls within an area of low fossil sensitivity. No further palaeontological studies are required; however, a protocol for chance finds has been included in Chapter 9 of this report.

The proposed replacement pipeline runs close to graves and potentially protected structures along its proposed alignment. Structures that could be over 60 years 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 approval of the Institute.

Graves and burial sites are protected by section 39 (1)(b) 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)(b), no grave or burial ground older than 60 years, or deemed to be of heritage significance by a heritage authority – 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 approval of the Institute .

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. It is therefore recommended that the proposed project avoid the relocation of graves. However, if graves must be relocated, then this needs to be done with a high degree of consultation and sensitivity and in terms of 39 (2) of the above-mentioned Act.

The laying of the pipeline across the valley should be undertaken with care. Caves should be avoided as they may have been used by early inhabitants of the area and may contain archaeological remains of such occupation.

If the recommendations and mitigation measures provided in this report are implemented and adhered to, then the construction of the Zwelibomvu 2 reservoir inlet pipeline may proceed from a heritage perspective.

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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.

SPECIALIST DETAILS

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

1. INTRODUCTION

The applicant, eThekweni Municipality Water and Sanitation Unit, proposes the installation of a 500mm diameter steel water pipeline of approximately 10km to the Zwelibomvu 2 Reservoir. The pipeline will connect the Shongweni Reservoir to the Zwelibomvu 2 Reservoir. The intention is to replace the existing 300mm diameter glass fibre reinforced polyester (GRP) inlet pipeline to Zwelibomvu. The new pipeline will be installed within 2m of the existing line and will follow the same route as the existing pipeline.

The existing pipeline is constantly bursting which results in a disruption of the water supply to surrounding residents and local consumers. In addition to the above, water demand in the area has increased due to increasing number of settlements within the area. The upgrading of the pipeline to a 500mm diameter steel water pipeline will result in a more reliable water supply as well as addressing the increasing demand for water in the Zwelibomvu area.

This is the Phase 1 Heritage Impact Assessment (HIA) report for the proposed project.

2. LEGISLATIVE BACKGROUND

The length of the pipeline is approximately 10 km in length hence it triggers section 41 (1)(a) 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. The relevant section of the Act refers to the following development: *“the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length”*.

In addition, the proposed project may impact on 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 NHRA, heritage resources are:

- (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) 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, 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 proposed pipeline replacement project.

3. LOCATION

The proposed pipeline project is located in the areas of Ntshongweni and Zwelibomvu which are rural areas in the outer west area of Durban. The start coordinates of the pipeline are at: 29°50'7.5"S; 30°40'30.6"E and the end coordinates are at: 29°53'15.5"S; 30°42'31.3"E (see **Figure 1** below).



Figure 1: Aerial view of project

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 pipeline project. Provide mitigation measures to limit or avoid the impact of the proposed 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 the Institute's assessment and comment.

5. METHODOLOGY

A survey of literature, including other heritage impact assessment reports completed for the larger 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.

An inspection of the project site was undertaken on 18 June 2019. Visibility was good along most of the proposed pipeline route and the specialist spoke to and was assisted by several residents in terms of the presence of heritage resources.

6. HISTORICAL BACKGROUND OF AREA

Shongweni caves are situated about 1.8 km east of the proposed pipeline. The caves are situated below the Ntshongweni Dam wall which was constructed in 1927. The dam is ringed by abrupt slopes, and on the right bank just below the dam there is a precipice with about 25 m of steep rocky talus at the base. In this precipice are several caves, incised into the less-resistant beds of quartzite by loops of the Mlazi River as it cut downwards towards the present valley-floor (Davies 1975:628).

Archaeological excavations of the caves identified two main periods of occupation, a later period discontinuously from the thirteenth century AD to the end of the third millennium BC, and an earlier much more discontinuous period from near 10000 to about 21000 BC. The upper occupation was marked by floors of dung and leaves and by small hearths separated by lenses of dust and rock-spalls; in the lower occupation, large beds of ash interfingered with pink sterile

dust were found. The dryness of the cave ensured the good preservation in the upper occupation of vegetable material, wood, plants, leaves and artefacts such as twine, but not of animal-remains except bone. There was also a wide variety of wild vegetable foods. The range of exploitation was large, as there were several marine shells, and some of the legumes found may have grown only near the coast. Workable stone also was fetched from far and the stonework was found to be poor, with some tools and weapons made of bone and of hard wood. There were beads made from shells of freshwater-bivalves (Oliver: 627).

Oliver concluded that the caves held traces of a people who had pottery and undertook some form of agriculture or proto agriculture, with the cultivation of cereals and cucurbits. They had no domestic animals and lived in cave/s and not on an open site. Oliver hypothesised that the people using the caves were from a hunter-gatherer culture with a very poor toolkit of stone and bone (Oliver: 658-659).

The historical 1:50 000 maps of the project area (2930DC) refer to Mr489 road that passes through Zwelibomvu as the 'old Voortrekker road'. Bulpin (undated:109) refers to the old arterial wagon road that reached Durban from the Drakensberg. Bulpin also makes mention of the 'old Dutch road' leading from Durban to Pietermaritzburg(165). It could not be confirmed if the Mr489 was one of these roads.

Zwelibomvu was the scene of violent confrontations amongst groups in the 1980s. Following the rise of the Zulu kingdom under Shaka Zulu in the early nineteenth century, the Makhanya and Mkhize are some of the groups who migrated south into what is now KwaZulu-Natal from Zululand and occupied Umbumbulu. When the Makhanya occupied the region in about 1840, it was already 'in the hands of the Mbo' who had left Zululand before them. In the 1840s and 1850s, Umbumbulu became part of the colonial processes in Natal in which Africans were incorporated into existing African authorities such as the Mkhize and Makhanya or placed under artificially created chiefs. In the 1950s, under the homeland system Umbumbulu was incorporated into the KwaZulu homeland under Chief Mangosuthu Buthelezi as its prime minister, who, in the 1970s, became the president of Inkatha (later Inkatha Freedom Party, IFP). Zwelibomvu was part of these changing histories in Umbumbulu. Intermarriage and other forms of alliance created a complex web of kinship networks that have promoted intergroup relations and have also affected land occupation. Such relations have produced interdependence among clans and between the Embo people and their neighbours, the Makhanya. The role of family relations between two the chiefdoms played a part in the escalation of violence in the 1980s in Zwelibomvu when the IFP and the ANC clashed during which time many people perished (Cele 2016:3-4).

7. RESULT OF SITE INSPECTION

The inspection started at the Zwelibomvu 2 Reservoir. The area close to the reservoir was inspected and a local resident pointed out several graves close to the reservoir (see **Table 1** below). The graves are not easily identifiable and must be avoided by proposed pipeline.



Figure 2: View along road and pipeline route



Figure 3: Existing water reticulation infrastructure

Residents pointed out several graves that are situated near the replacement pipeline route between the Zwelibomvu 2 Reservoir and edge of the valley. One of the grave sites was found along an old vehicle track which was, according to residents, moved to the current road in order to avoid the graves.



Figure 4: Rock outline of grave/s



Figure 5: Graves amongst bushes

On the Shongweni Reservoir side of the valley, several heritage resources were found close to the pipeline route. The remains of a structure were found very close to the route along Wathanga Road (see **Figure 6** below). It is recommended that the pipeline avoid the structure as the age and use of the structure could not be determined. If it is to be impacted, then a built heritage specialist would need to be consulted to determine if the building is older than 60 years and if it is of any heritage significance.

**Figure 6: Remains of structure**

Several grave sites were found along Wathanga Road including a large burial site where at least 10 graves were found.



Figure 7: Single grave



Figure 8: Several graves in one area



Figure 9: Outline of grave amongst bushes

The age of the abandoned structure shown below in **Figure 10** is unknown. It is recommended that the pipeline be placed on the opposite of the road so that the structure is not impacted by the pipeline.



Figure 10: Abandoned structure



Figure 11: Graves within boundary of homestead

The list of heritage resources found during the site inspection is provided below in **Table 1** together with recommended mitigation measures.

Table 1: List of heritage resources

COORDINATES	HERITAGE RESOURCE	PROXIMITY TO PIPELINE; MITIGATION MEASURES
29°53'15.1"S 30°42'29.7"E	± 6 graves	9m north east of pipeline; no construction within 5 m of graves, buffer to be demarcated with visible danger tape
29°52'25.0"S 30°41'57.0"E	>2 graves in old road track (Figure 4)	9m east of pipeline on other side of road; no mitigation necessary as long as pipeline is situated on the other side of the road
29°52'24.4"S 30°41'57.9"E	2 graves amongst bushes (Figure 5)	22m east of pipeline on other side of road; no mitigation necessary
29°52'23.1"S 30°41'58.0"E	>2 graves situated south of residence	10m east of pipeline on other side of road; no mitigation necessary as long as pipeline is situated on far side of road
29°50'21.4"S 30°40'33.3"E	Remains of old structure; use and age is unclear (Figure 6)	3m north-east of pipeline; avoid impacting on structure if possible. If impacted, then age and heritage significance must be determined prior to any action taking place.
29°50'31.9"S 30°40'48.3"E	Single grave (Figure 7)	11m south-west of pipeline; no mitigation necessary
29°50'31.8"S 30°40'49.4"E	>7 graves (Figures 8 and 9)	6 m north-east of pipeline. Ensure that pipeline alignment is within road reserve. Graves on same side of road as pipeline hence graves should be fenced with danger tape to avoid damage during laying of pipeline
29°50'33.4"S 30°40'51.8"E 29°50'33.7"S 30°40'52.4"E	±10 graves	6m north-east of edge of pipeline; site should be demarcated by danger tape to prevent damage to the graves
29°50'33.9"S 30°40'52.9"E	1 grave	10m east of pipeline, could be part of large burial site referred to above; no mitigation necessary
29°50'38.4"S 30°40'54.3"E	Remains of structure; no graves found in vicinity of remains	3m north-west of pipeline; appears to be a recent structure; no mitigation measures necessary as it is of no heritage significance
29°50'47.7"S 30°40'55.4"E	Grave/s situated above road on cutting	5m north-east of pipeline; ensure that laying of pipeline does not lead to collapse of side of cutting above which the grave/s are located
29°50'49.6"S 30°40'58.6"E	Abandoned structure; age could not be determined (Figure 9)	6m south of pipeline; ensure laying of pipeline does not impact on structure
29°51'06.5"S 30°41'16.3"E	Several groups of fenced graves in open area	16m north-west of pipeline; no mitigation necessary
29°51'35.2"S 30°41'20.5"E	Many graves within homestead (Figure 10)	9m west of pipeline; no mitigation necessary as long as pipeline remains in road reserve and on other side of road

According to the South African fossil sensitivity map, the proposed project falls within an area of low fossil sensitivity as indicated by the blue colour in **Figure 12** below. No further palaeontological studies are required; however, a protocol for chance finds is required. This chance find protocol is included in Chapter 9 of this report.

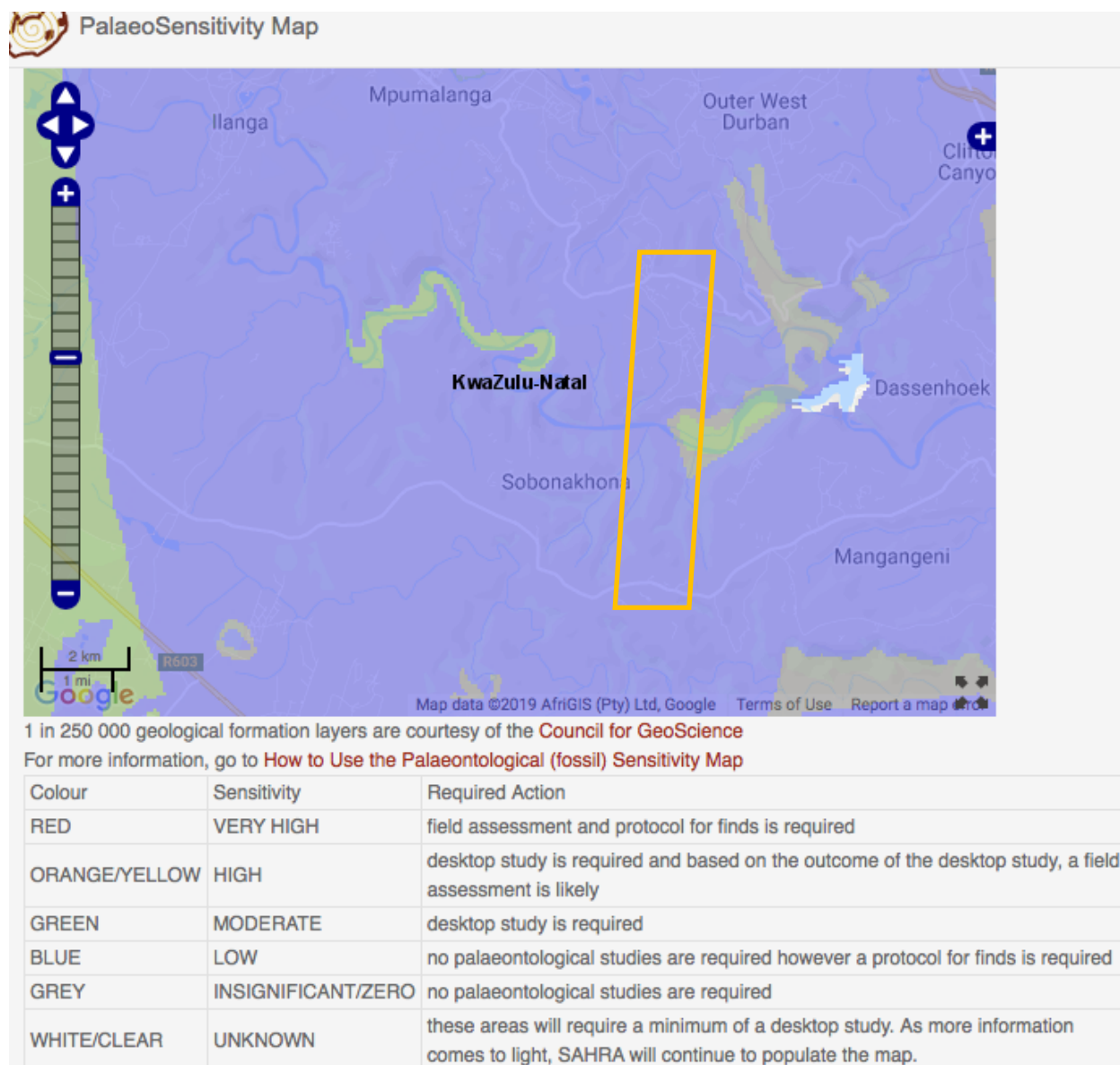


Figure 12: Fossil sensitivity of project area indicated by orange outline

8. DISCUSSION, RECOMMENDATIONS AND CONCLUSION

The proposed replacement pipeline runs close to graves and potentially protected structures along its proposed alignment. The remains of structures that could be over 60 years 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.

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), 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. It is therefore recommended that the proposed project avoid the relocation of graves. However, if graves must be relocated, then 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 laying of the pipeline across the valley should be undertaken with care. Any caves should be avoided as they may have been used by early inhabitants of the area (as evidenced in Chapter 6 of this report) and may contain archaeological remains of such occupation.

If the recommendations and mitigation measures provided in this report are implemented and adhered to, then the construction of the Zwelibomvu 2 reservoir inlet project may proceed from a heritage perspective.

9. ADDITIONAL MITIGATION MEASURES

- Workers should be made aware of the types of heritage resources, such as graves, that could be found during the construction of the proposed pipeline project.

- For any chance heritage finds (graves, etc.), 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 relevant heritage resource agency (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 the project 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 as well as the Institute must be contacted. No SAPS official may remove remains (recent or not) until the correct permit/s have been obtained.
- The following should be adhered to in terms of chance fossil finds:
 - When excavation takes place for the placing of the pipeline, any rocks disturbed during this process must be inspected by the environmental officer or designated person. Any fossiliferous material (trace fossils, plants, insects, bone, and coal) should be put aside in a suitably protected place.
 - Photographs of possible fossils should be sent to a palaeontologist for preliminary assessment.
 - If there are concerns regarding any fossil finds, then the palaeontologist must visit the site to inspect the selected material and check dumps where necessary.
 - Fossil plants or vertebrates that are deemed to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a permit must be obtained from the Institute. Annual reports must be submitted to the Institute as required by the relevant permits.

10. REFERENCES

Bulpin, T.V. Undated. *To the shores of Natal*. Citadell Press: Cape Town

Cele, N. 2016. *Memories within memories: the dynamics of Zwelibomvu's memories of violence of the 1980s*. Transformation 90 (2016) (<https://jhu.edu/article/620234>)

Davies. O. 1975. Excavations at Shongweni South Cave: the oldest evidence to date for cultigens in southern Africa in *Annals of the Natal Museum* 22(2) 1975. Natal Museum: Pietermaritzburg