

**PROPOSED BURBREEZE WATER INFRASTRUCTURE PROJECT,
TONGAAT, KWAZULU-NATAL**

PHASE 1 HERITAGE IMPACT ASSESSMENT

NOVEMBER 2015

Updated February 2016

Compiled for: 1World Consultants

Compiled by: Jean Beater

JLB Consulting

EXECUTIVE SUMMARY

The eThekweni Municipality proposes the construction of the Burbreeze 5Ml reservoir and a 3 km long DN 250 pipeline from Mamba Ridge tie-in to the Burbreeze reservoir in Tongaat, KwaZulu-Natal, in order to increase the supply of potable water to the community. The project will consist of: an inlet at the existing Jan Roz reservoir; an inlet to Burbreeze reservoir; an outlet pipeline and an overflow pipeline as well as a booster pump station at the existing Jan Roz reservoir.

The proposed pipeline is 3 km long and the footprint size of the proposed Burbreeze reservoir is 7489082 m², therefore the project triggers subsections (a) and (c)(i) of section 38 of the National Heritage Resources Act, 1999 (Act No 25 of 1999) hence the need for a heritage impact assessment. The construction of the pipeline and reservoir may also impact on graves and structures, as well as archaeological and palaeontological resources that are protected in terms of sections 33, 34, 35, and 36 of the KwaZulu-Natal Heritage Act (No. 4 of 2008).

The project is situated just north of the centre of Tongaat and between the so-called "Mamba Ridge" tie-in point and the proposed Burbreeze Reservoir. The project crosses the Fairbreeze, Sandfields and Newton areas of Tongaat.

No obvious heritage sites were identified during the site investigation of the pipeline route. The remains of a structure found in the area just before Jan Roz Crescent indicates previous habitation of the area. During the construction of the pipeline in this area, care must be taken when clearing of the vegetation and trenching for the pipeline, that no heritage sites are destroyed during this process. If heritage sites are found, then the mitigation measures provided in this report must be adhered to.

The fossil sensitivity map of SAHRA indicates that the project area falls largely within a moderate fossil sensitivity area that requires a desktop assessment. However, the location of the reservoir falls within very high fossil sensitivity area that requires a field assessment. Although the location of the reservoir is already disturbed by farming activities, existing power lines and a telecommunication tower in the near vicinity of the site, it is recommended that, due to the very high sensitivity rating of the site, a desktop palaeontological assessment is undertaken to determine if fossils will be impacted by the construction of the proposed reservoir. The pipeline route is already highly disturbed hence no palaeontological study is therefore recommended for the proposed pipeline.

It is recommended that at the start of construction of the reservoir and the construction of the overflow and outlet pipelines, a heritage specialist is retained to provide a watching brief to ensure that no heritage sites are discovered during this phase of the project.

Based on the findings of the assessment, the development can proceed with the proviso that the above recommendations are implemented.

Contents

AUTHOR DETAILS	iv
1 INTRODUCTION	1
2 LEGISLATIVE CONTEXT	1
3 LOCATION	2
4 METHODOLOGY	3
5 HISTORICAL BACKGROUND OF PROJECT AREA	3
6 RESULTS OF SITE INVESTIGATION	7
7 DISCUSSION AND RECOMMENDATIONS	13
8 CONCLUSION	15
9 MITIGATION MEASURES	15
10 REFERENCES	16

LIST OF FIGURES

Figure 1: Location of main pipeline	4
Figure 2: Location of main pipeline and overflow and outlet pipelines indicated in red and yellow	5
Figure 3: Southern area of pipeline route	7
Figure 4: Informal farming activities alongside railway line	8
Figure 5: Soccer field adjacent to railway line	8
Figure 6: Dense vegetation near Jan Roz Crescent.....	9
Figure 7: Remains of structure	9
Figure 8: Crossing of R102 by pipeline route from Fairbreeze Drive	10
Figure 9: Road support close to pipeline route.....	10
Figure 10: Disturbed area alongside R102	11
Figure 11: Sugar cane fields and power lines.....	12
Figure 12: View of overflow and outlet pipelines in relation to surrounding area.....	13
Figure 13: Fossil sensitivity of project area (as outlined)	14

AUTHOR DETAILS

Verification	Name	Qualification	Professional Registration
Author	Jean Beater	MA (Heritage Studies)	Affiliate Member of Association of South African Professional Archaeologists (No. 349) Member of IAIAAsa (No. 1538)

1 INTRODUCTION

The Water and Sanitation Department of eThekweni Municipality proposes the construction of a 5Mℓ reservoir, to be referred to as the Burbreeze reservoir and a 3 km long DN 250 pipeline from Mamba Ridge tie-in to the Burbreeze reservoir in Tongaat, KwaZulu-Natal, in order to increase the supply of potable water to the community.

The project will consist of (i) an inlet at the existing Jan Roz reservoir; (ii) an inlet to Burbreeze; (iii) an outlet pipeline and (iv) an overflow pipeline as well as a booster pump station at the existing Jan Roz reservoir site. There will be one discharge point for the overflow pipeline.

This report serves as the Phase 1 Heritage Impact Assessment (HIA) for the proposed construction of the Burbreeze reservoir and associated pipeline.

2 LEGISLATIVE CONTEXT

The proposed pipeline is 3 km long and the footprint size of the Burbreeze reservoir is 7489082 m², therefore the project triggers subsections (a) and (c)(i) of section 38 of the National Heritage Resources Act, 1999 (Act No 25 of 1999), that states the following:

“(1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

*(c) any development or other activity which will change the character of a site—
(i) exceeding 5 000 m² in extent*

must notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

In addition, the project may impact on graves and structures, as well as archaeological and palaeontological resources that are protected in terms of sections 33, 34, 35, and 36 of the KwaZulu-Natal Heritage Act (No. 4 of 2008) as well as sections 34, 35, and 36 of the National Heritage Resources Act (NHRA).

In terms of Section 3 of the NHRA, heritage resources are described as follows:

(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;
- (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 Tongaat water infrastructure project.

3 LOCATION

The project area is situated just north of the centre of Tongaat and between the so-called "Mamba Ridge" tie-in point and the proposed Burbreeze Reservoir. The project crosses the Fairbreeze, Sandfields and Newton areas of Tongaat. See Figure 1 below. A section of the pipeline is situated parallel to the existing railway line that runs through the area as well as to

the R102 road. In addition, the overflow and outlet pipelines are situated north of the reservoir close to the Dudley Pringle Dam.

4 METHODOLOGY

A site inspection was undertaken on 15 November 2015 where most areas of the project were inspected. Discussions were held with two residents regarding the existence of heritage resources along the pipeline route. The location of the Burbreeze reservoir and overflow and outlet pipelines were not inspected due to access issues that were exacerbated by wet weather.

A survey of literature, including other heritage impact assessments completed in the area, was undertaken in order to understand the potential heritage resources that could be found in the development area.

5 HISTORICAL BACKGROUND OF PROJECT AREA

Archaeology of area

According to Prins (2014:1), the greater Tongaat area has been relatively well surveyed for archaeological heritage sites by various institutions including the KwaZulu-Natal Museum. The available evidence, as found in the Amafa and KwaZulu-Natal Museum heritage site inventories, indicates that this area contains a wide array of archaeological sites covering different time-periods and cultural traditions. Eighty heritage sites occur in the larger surrounding area. These range from Early Stone Age, Middle Stone Age, and Later Stone Age to Early Iron Age, Middle and Later Iron Age sites as well as historical sites relating to the rise of the Zulu Kingdom and the subsequent colonial period.

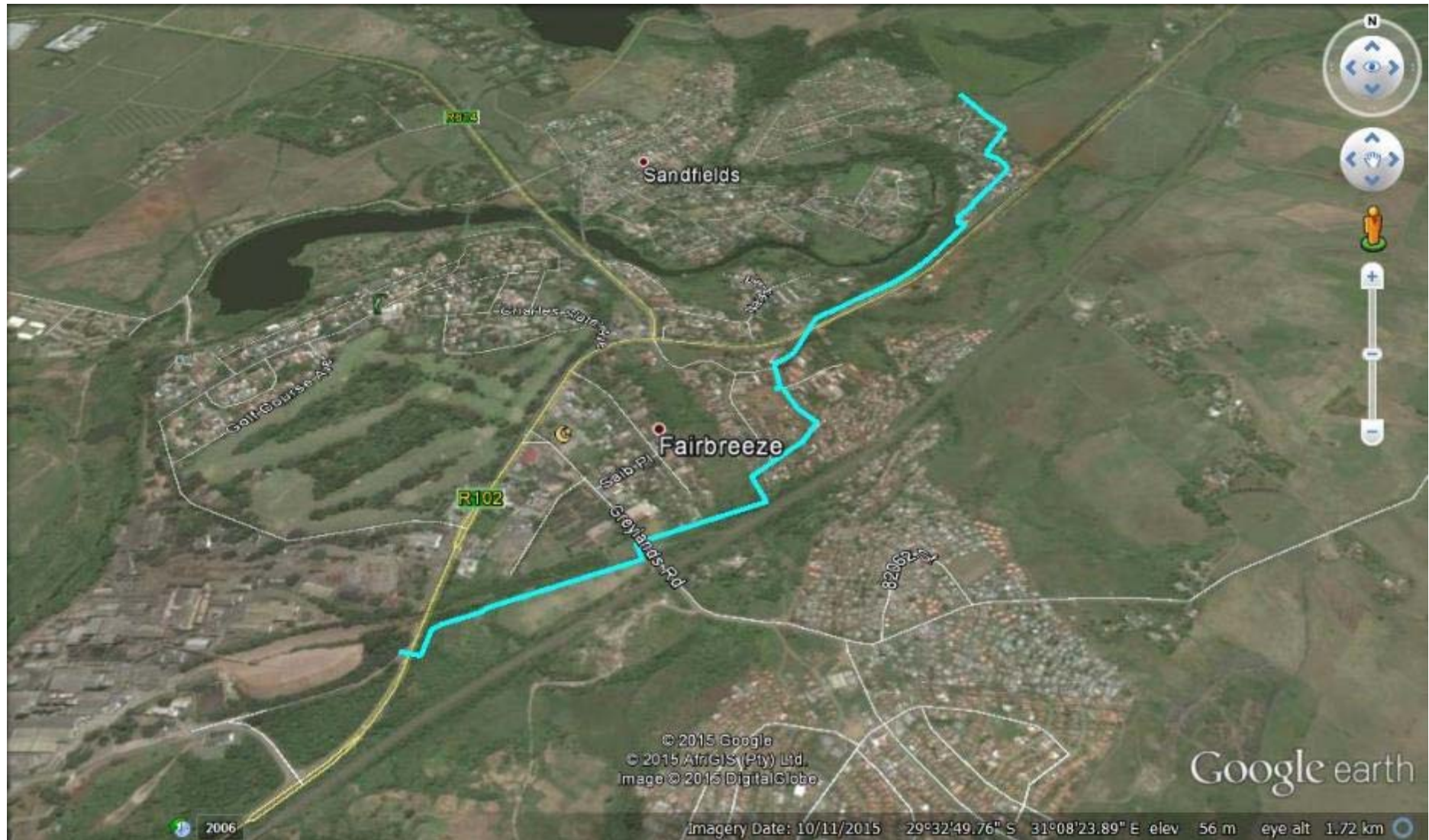


Figure 1: Location of main pipeline

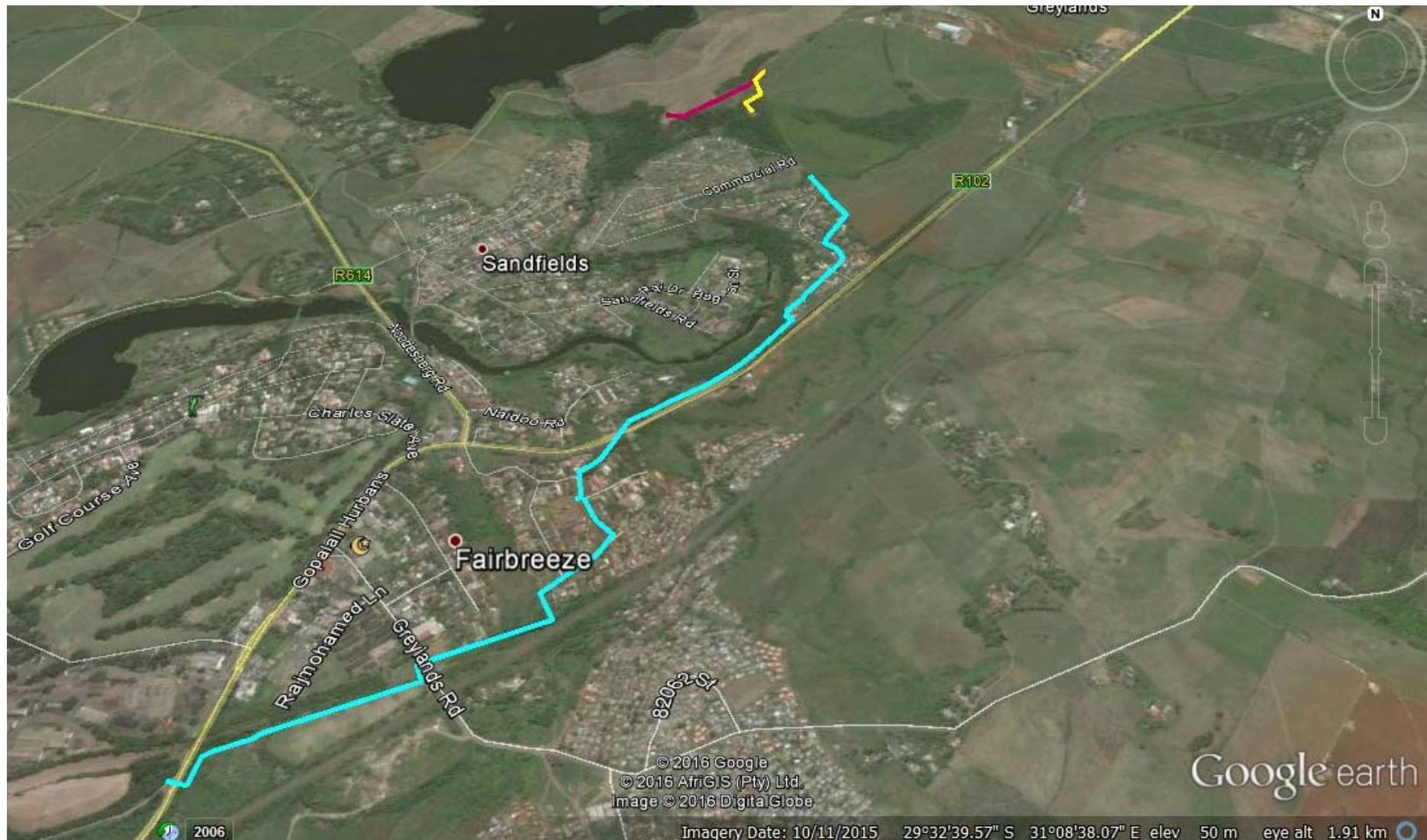


Figure 2: Location of main pipeline and overflow and outlet pipelines indicated in red and yellow

Around 1 700 years ago, an initial wave of Early Iron Age people settled along the inland foot of the sand dunes on sandy but humus rich soils which would have ensured good crops for the first year or two after they had been cleared. They produced a characteristic pottery style known as Matola. The Matola people exploited the wild plant and animal resources of the forest and adjacent sea-shore. The communities seemed to have been small groups of perhaps a few dozen people, moving into a landscape sparsely inhabited by Later Stone Age San hunter- gatherers. By 1500 years ago, another wave of Iron Age migrants entered the area. Their distinct ceramic pottery have been classified to styles known as “Msuluzi” (AD 500-700), Ndongondwane (AD 700-800) and Ntshekane (AD 800-900) (Prins: 2).

History of area

The name Tongaat was taken from the nearby Tongati River, the Zulu word for the indigenous trees that flourish on the river banks. The history of Tongaat shows that the present site of Tongaat was selected in 1846 by a government commission as one of a number of villages, which it was hoped, would be established through emigration. The village was initially named “Victoria.” It developed into a town in the 19th Century because of the successful cultivation of sugar cane in the area. This led to the development of huge and very successful sugar estates which asserted themselves as a distinctive force in the cultural and political spheres of the region’s social history (Urban-Econ 2008:22).

Sugar cultivation in Tongaat was extremely labour intensive, particularly at seasonal peaks. From the 1860s the labour requirements of the sugar industry were met by indentured Indian labour. This gave rise to the establishment of an informal community of indentured labourers where no form of development control existed. The effects of the malaria epidemic in 1930 triggered the establishment of health committees that were eventually formalised as the Tongaat Town Board in 1944 (Urban-Econ 2008:22).

The Sri Siva Soobramaniam Temple, situated in Brake Village, hosts the country’s largest annual Kavadi Festival. Brake Village was donated to the Temple Management Committee by Moreland Properties. Most of the workers housed at Brake Village worked as “Brake Boys” on the locomotives transporting sugar cane from the various sections to the Sugar Mill, hence the name “Brake Barracks” (Prins 2014:3).

The Juggernath Puri Temple at Tongaat, built in 1920 by Pandit Sirikishan Maharaj, is said to be the tallest Hindu temple in South Africa and is a national heritage site. It is 21 m high and

is modelled on the famous temple of the same name on the banks of the Ganges River in India (Derwent 2006:47).

6 RESULTS OF SITE INVESTIGATION

The southern start of the project is situated close to the R102 and an industrial area of Tongaat with areas fenced off for security purposes. The area is disturbed by pathways, existing pipelines (as evidenced by the marker in Figure 2) and security fencing.



Figure 3: Southern area of pipeline route

The section of pipeline route that is situated parallel to and south of the railway line is disturbed by small-scale farming activities and a soccer field which appears to be regularly used. The inspection of the area revealed no heritage sites.



Figure 4: Informal farming activities alongside railway line



Figure 5: Soccer field adjacent to railway line

The section of the proposed pipeline route before Jan Roz Crescent was found to be densely overgrown by vegetation making visibility poor. The owner of a small area of maize being cultivated near the area said that he was unaware of the presence of graves in the

area but could not confirm this definitively. The remains of a structure (Figure 6) were found amongst the vegetation indicating previous habitation of the area.



Figure 6: Dense vegetation near Jan Roz Crescent



Figure 7: Remains of structure

The pipeline route running along Jan Roz Crescent and along the R102 are highly disturbed by residential activities, existing pipelines and road repairs and enhanced support structures for a section of the road. No heritage sites were found along these sections.



Figure 8: Crossing of R102 by pipeline route from Fairbreeze Drive



Figure 9: Road support close to pipeline route



Figure 10: Disturbed area alongside R102

The section of the pipeline route located along Burbreeze Drive and Bur Lane was also found to be highly disturbed by residential activities. No heritage sites were noted during the site inspection.

At the end of Bur Lane, intensive sugar cane farming occurs. This farming has most likely resulted in the destruction of any heritage resources that may have occurred in the area. Mr Innocent Ngidi, who lives on the property situated closest to the sugar cane field was asked if he was aware of any heritage resources in the area. He indicated that, to his knowledge, there were no graves or other heritage sites in the area.

The area where the proposed Burbreeze reservoir is to be located is disturbed by existing power lines, telecommunication infrastructure and some farming. However, the specialist could not access the specific site of the reservoir due to wet conditions on the day of the site

inspection. The access road was also not in good condition that was exacerbated by the rainy weather.



Figure 11: Sugar cane fields and power lines

Overflow and outlet pipelines

These two pipes are situated on the northern side of the hill on which the reservoir will be built. They are situated roughly 500 m from the Dudley Pringle Dam and within an area that is used for sugar cane farming with access roads as well as an existing reservoir.

Although the area where it is proposed to locate the two pipelines was not inspected, it is anticipated that existing disturbance to the area, as described above, indicates that there is a low likelihood of finding intact heritage resources in the area. The area of these pipelines is in an area identified as having a moderate fossil sensitivity (see Figure 13 below).

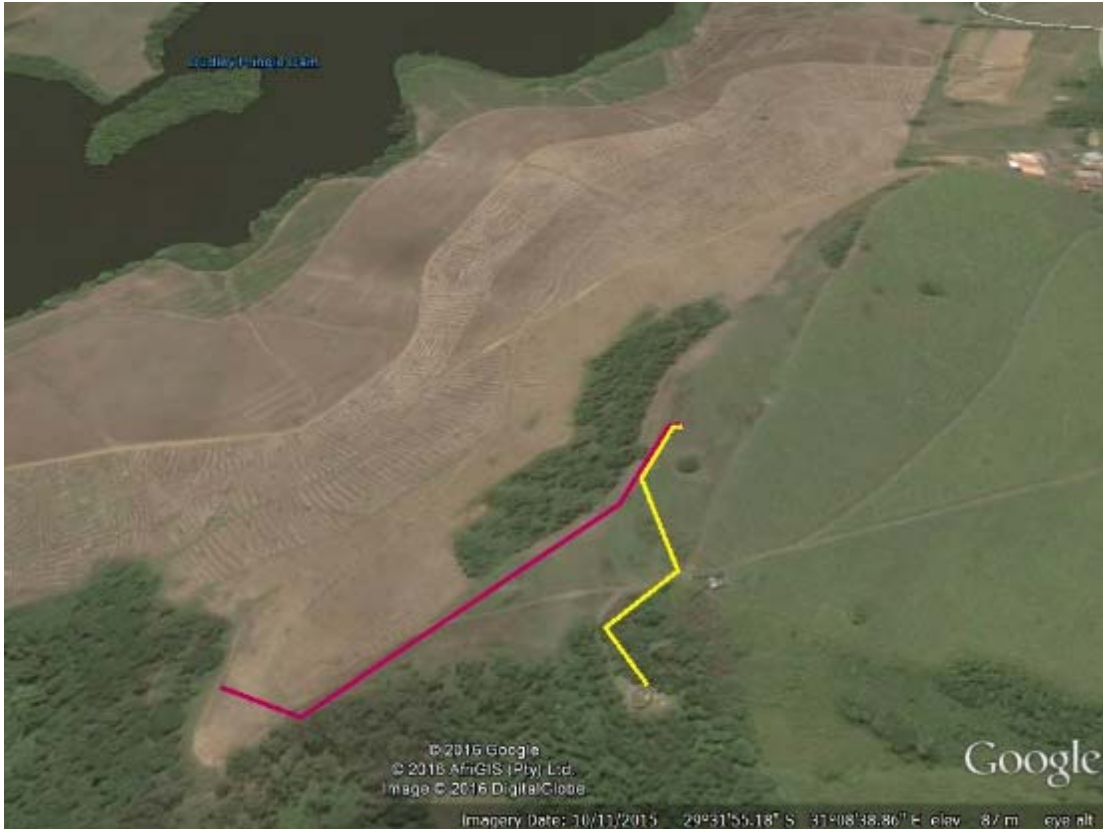


Figure 12: View of overflow and outlet pipelines in relation to surrounding area

7 DISCUSSION AND RECOMMENDATIONS

No obvious heritage sites were identified during the site investigation of the project. The remains of a structure found in the densely vegetated area just before Jan Roz Crescent indicates previous habitation of the area. During the construction of the pipeline, care must be taken when clearing the area and trenching for the pipeline that no heritage sites are destroyed during this process. If sites are found, then the mitigation measures provided in Section 9 of this report must be followed.

The fossil sensitivity map of the South African Heritage Resources Agency (SAHRA) indicates that the project area falls largely within a moderate fossil sensitivity area (see Figure 11) that requires a desktop palaeontological assessment. However, it appears that the location of the reservoir falls within very high fossil sensitivity area which indicates that a field assessment needs to take place. Although the location of the reservoir is already disturbed by farming activities, existing power lines and a telecommunication tower in the near vicinity of the site, it is recommended that due to the very high sensitivity rating of the site, a desktop palaeontological assessment is undertaken to determine if fossils will be impacted by the construction of the proposed reservoir.

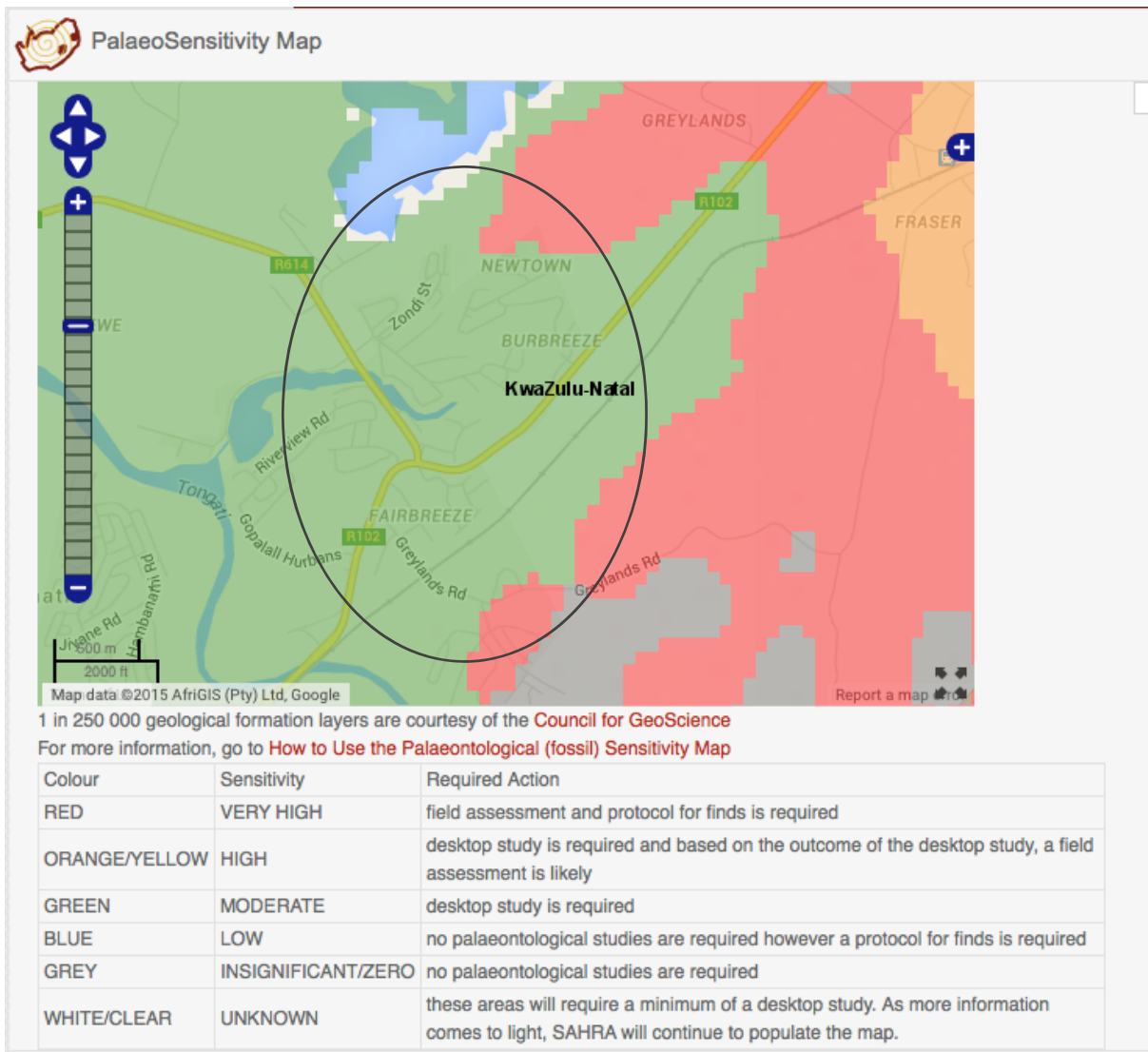


Figure 13: Fossil sensitivity of project area (as outlined)

The area surrounding the location of the proposed reservoir is disturbed by power lines and telecommunication towers. It is recommended that at the start of construction of the reservoir as well as the overflow and outlet pipelines, a heritage specialist is retained to provide a watching brief to ensure that no heritage sites are discovered during this phase of the project.

It is also recommended that the pipeline avoid the forested areas just before the location of the reservoir and west of the sugarcane fields. The forested areas are currently not impacted increasing the possibility of finding intact heritage sites.

8 CONCLUSION

Based on the findings of the site visit, the development can proceed with the proviso that the recommendation regarding the retention of a heritage specialist during the construction of the reservoir, overflow and outlet pipelines is enforced and that a desktop palaeontological assessment is undertaken to assess the potential impact of the construction of the Burbreeze reservoir on fossils.

The area of the overflow and outlet pipelines is in an area identified as having a moderate fossil sensitivity which requires a desk-top study. Due to the disturbed nature of the area, the possibility of finding intact fossils is deemed to be low and no study is recommended.

In addition, the implementation of the mitigation measures, as listed below, must always be taken into account.

9 MITIGATION MEASURES

- For any chance 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 for inspection. The relevant heritage resource agency (Amafa) must also be informed about the finding.
- The heritage specialist will assess the significance of the resource and provide guidance on the way forward.
- Permits to be obtained from Amafa if heritage resources are to be removed, destroyed or altered.
- All heritage resources found in close proximity to the construction area to be protected by a 10m buffer in which no construction can take place. The buffer material (danger tape, fencing, etc.) must be highly visible to construction crews.
- Under no circumstances may any heritage material be destroyed or removed from site unless under direction of a heritage specialist.
- Should any remains be found on site that is potentially human remains, the South African Police Service should also be contacted.
- If there are chance finds of fossils during construction, a palaeontologist must be called to the site in order to assess the fossils and rescue them if necessary (with an Amafa permit). The fossils must then be housed in a suitable, recognized institute

10 REFERENCES

Derwent, S. 2006. *KwaZulu-Natal heritage sites. A guide to some great places*. Claremont: David Philip.

Prins, F. 2014. *A first phase heritage impact assessment of the proposed Burbreeze pedestrian bridge near Tongaat, eThekweni Metro Municipality*. Unpublished report.

Prins, F. 2014. *A first phase heritage impact assessment of proposed expansion of Brake Village Shri Siva Soobramanair Alayam Temple, Erf 5478, Tongaat, extension 48, KwaZulu-Natal*. Unpublished report.

Urban-Econ. 2008. *Tongaats Local Economic Development Strategy 2008*. Unpublished report submitted to eThekweni Development Unit and KZN Department of Economic Development.