PROPOSED CONSTRUCTION OF STEEL SMELTER, COLENSO, ALFRED DUMA LOCAL MUNICIPALITY, KWAZULU-NATAL

Phase 1 Heritage Impact Assessment

September 2019

FOR: **Fuze Environmental Services**
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EXECUTIVE SUMMARY

The Applicant, Tower Iron and Steel, wishes to construct a steel smelting factory in the town of Colenso, KwaZulu-Natal (KZN). The facility will include construction of a smelting plant, pool, and administrative building, followed by commissioning of smelting activities. The project site is located in an urban area and within the old Colenso power station site.

The proposed area of construction of the steel smelter will be approximately 35 HA (350000 m²) in size which triggers section 41 (1) 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 sub-section refers to any development or other activity which will change the character of site – (c) (i) exceeding 5000 m².

The town of Colenso is situated just of the R103 road. The proposed site for the steel smelter falls within the grounds of the decommissioned Colenso power station which is situated adjacent to Sasar Road in Colenso. An inspection of the project site was undertaken on 30 August 2019.

Many buildings were constructed on the project site when the power station was operational. Some of the buildings are still intact including the cooling towers, power station building/control room and the coal hoppers. However, with some structures only the walls were found and, in many cases, only the foundations were found. Remains of canals, roads, fencing and the area where the railway line was situated are still visible in some areas.

A Muslim cemetery was found on the project site close to Sasar Road. The graves are a mix of old graves that are over 60 years of age and much more recent graves. The cemetery is well tended and presumably still visited by family and friends.

Several elevated oblong structures filled with soil were found near a building which could have been used as a coal bunker. It is unclear whether the structures are graves; it is thought that they are raised garden beds.

The South African fossil sensitivity map indicates that the project site falls into an area of moderate fossil sensitivity with an overlap into an area of very high fossil sensitivity. Due to the highly disturbed nature of the project site as well as its moderate sensitivity, a desktop palaeontological study was undertaken to determine if sensitive fossils would be impacted by the proposed steel smelter.

The desktop study determined that the project site lies on the alluvium and partly consolidated fine-grained sands of the Kalahari Group, Quaternary age, alongside the Tugela River. The town lies on shales of the Adelaide Subgroup, Karoo Supergroup. Non-fossiliferous dolerite dykes of Jurassic age are nearby. There is a small chance that fossils from upstream could have been transported by the river along with sands, such as silicified wood or heavy bones. Since there is a small chance that fossils could be discovered once excavations commence, a Fossil Chance Find Protocol must be added to the Environmental Management Programme and adhered to. Based on this information, it is recommended that no palaeontological site visit is required unless the geologist or responsible person on-site discovers fossils

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 their removal. The burial ground found on the project site is still utilised therefore it is recommended that is left *in situ*, that a fenced buffer of 20 m is placed around the burial ground and that an access gate is provided from Sasar Road to allow family and friends to visit the cemetery.

If the elevated oblong structures (graves/flowerbeds) are to be impacted by the proposed steel smelter, then a Phase 2 heritage assessment of the structures needs to be undertaken to determine whether they are graves or not.

The structures and remains of structures found on site 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. As the structures found on site are older than 60 years, if any are to be demolished to make way for the proposed smelter, then application will have to be made to the Institute for permission to do so.

The proposed construction of the steel smelter can proceed from a heritage perspective as long as the recommendations and mitigation measures proposed by both this report and that of the desktop palaeontological study are implemented.

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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 IAIAsa (No. 1538)

1. INTRODUCTION

The Applicant, Tower Iron and Steel, wishes to construct a steel smelting factory in the town of Colenso, KwaZulu-Natal (KZN). The facility will include construction of a smelting plant, pool, and administrative building, followed by commissioning of smelting activities (Fuze Environmental Services 2019:1). The project site is located in an urban area within the grounds of the old Colenso power station site. The site is partially developed with power lines and servitudes, cooling towers and the remains of many buildings.

This is the Phase 1 Heritage Impact Assessment (HIA) report for the proposed construction of the steel smelter in Colenso.

2. LEGISLATIVE BACKGROUND

The proposed construction area of the steel smelter will be approximately 35 HA (350000 m²) in size which triggers section 41 (1) 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 sub-section, sub-section (c), refers to *any development or other activity which will change the character of site - (i) exceeding 5000 m²*.

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 National Heritage Resources Act (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 construction of the steel smelter.

3. LOCATION

The town of Colenso is situated just of the R103 road and close to the Tugela River. The proposed site for the steel smelter is approximately at 28°44'03.16" S; 29°49'42.82" E which falls within the grounds of the decommissioned Colenso power station which is situated adjacent to Sasar Road in Colenso.

The three cooling towers that formed part of the power station are still intact and visible on **Figure 1** below as well as the remains of numerous other buildings. The project area is highly disturbed by the power station activities.

Figure 1: Aerial view of project site outlined in red

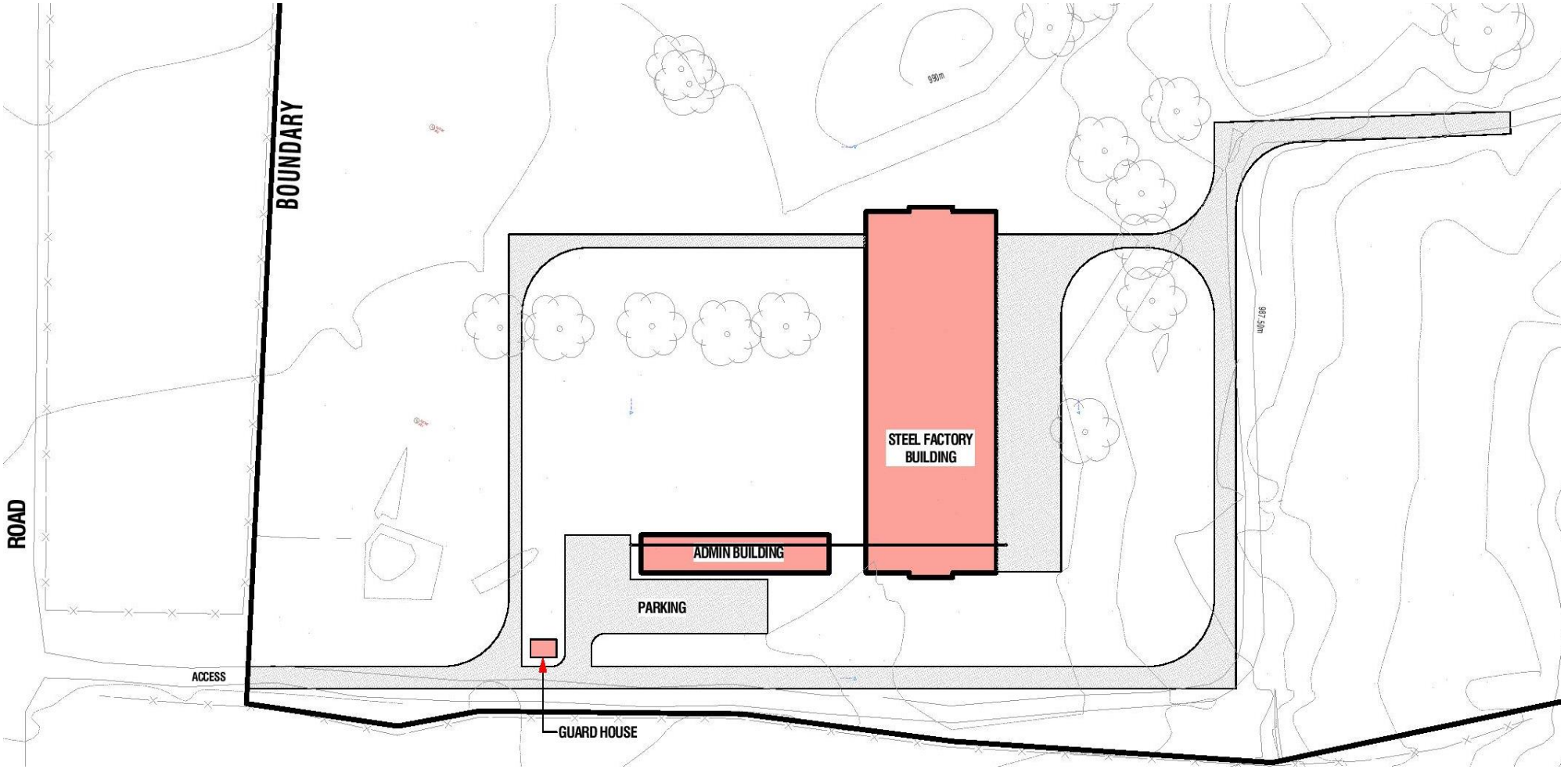


Figure 2: Layout of smelter

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 construction of the smelter. Provide mitigation measures to limit or avoid the impact of the proposed project on heritage resources (if any).

Submit the report to the provincial heritage resources agency, namely the KwaZulu-Natal Amafa and Research Institute (hereafter referred to as the Institute) for their 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 30 August 2019. The area is very overgrown with dense vegetation as well as numerous structures and remains of structures.

6. HISTORICAL BACKGROUND OF AREA

According to Prins (2015:3), around 800 years ago, Bantu-speaking farmers settled in the greater project area. The majority of sites constructed by these African farmers consisted of stone walling. The earliest sites date back to approximately 1200 AD and are called Moor Park after the type site situated at Moor Park Nature Reserve close to Colenso. These sites as well as Later Iron Age sites were most probably occupied by Nguni-speaking groups.

According to the history of the Colenso power station as provided by Eskom Holdings (2019:9), the village of Colenso was originally a wagon halt. The town was laid out in 1855 and was named after Bishop JW Colenso, first Anglican Bishop of Natal. The railway line reached Colenso in 1886. Colenso was proclaimed a township in 1926 and a borough in 1958.

During the Anglo-Boer War there was heavy fighting in the area on account of the strategic bridge over the river. According to the history of the site as provided by the Eskom Holdings (2019:9), the power station was built on the battlefield. As can be seen in the figure below, the

project formed part of a much wider battle front. The original gun positions of the British can still be found south-east of the project site.

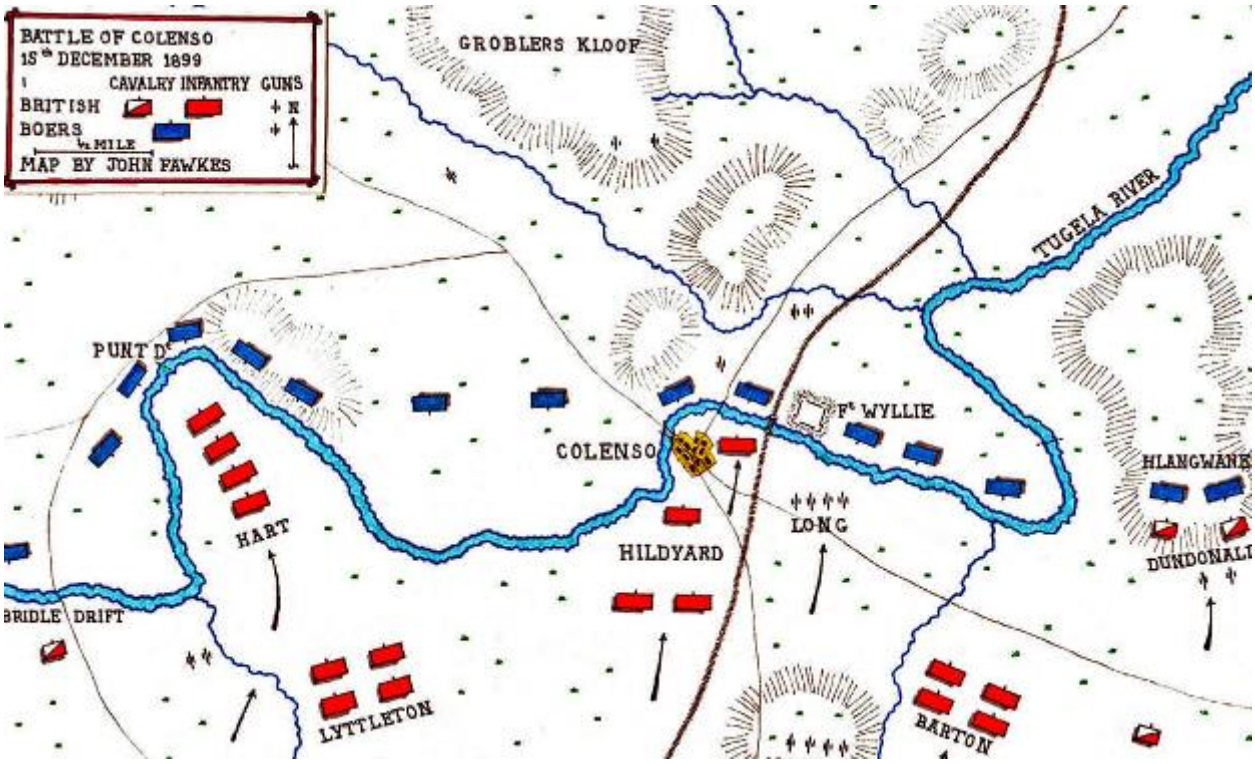


Figure 3: Project area in relation to Battle of Colenso

Colenso power station was the first thermal power station to be operated by the Electricity Supply Commission (ESCOM) although it was not originally an ESCOM undertaking. The power station, substations and transmission system were constructed by the Railway Administration to supply power for the electrification of the Natal main line between Glencoe Junction and Pietermaritzburg. Colenso Power Station was taken over by ESCOM in January 1927. By the end of 1936, power was supplied from Colenso power station for the whole of the railway traction load in Natal (Eskom Holdings 2019:1).

The Railway Administration constructed quarters for their staff. In 1926 there were 36 brick residences. However, this was insufficient, and ten wood and iron houses and two blocks of single quarters, used during the construction period, had to be retained for accommodation of permanent staff. When the power station was taken over by Eskom in 1927, additional brick houses for married men, and 28-roomed single quarters for single men, were constructed as well as a recreation hall. A golf course, bowling green and tennis courts were also built (Eskom Holdings 2019:8). When the Colenso No. 2 station was built in 1944/45, new workshops and a stores building were constructed to replace the previous buildings, which were demolished to make way for the new turbine and boiler houses. According to Eskom (2019:9), many houses were built over the years as part of the larger housing programme.

The original five generators were decommissioned in 1973, and the sixth in 1980, leaving only Colenso 2 in service. Colenso, the longest serving station at that time, was finally taken out of service and decommissioned in September 1985 (Eskom Holdings 2019:8).

7. RESULT OF SITE INSPECTION

The site of the Colenso power station was inspected for the proposed smelter. Most of the area was inspected on foot apart from the area between the coal hoppers and close to the Tugela River where people, who are possibly living on the site, were found. Due to security reasons, the specialist withdrew from this section but inspected the rest of the site.

An area immediately south east of the cooling towers is currently being excavated by people for stone and other material. The area is highly disturbed as can be seen in **Figure 4**.

Figure 4: Excavating for stone and other material

As reported in **Chapter 6** of this report, many buildings were constructed on the project site. Some of the buildings are still intact including the cooling towers, power station building/control room and the coal hoppers for example. However, with some structures only the walls of buildings can be found and, in many cases, only the foundations were found. Remains of canals, roads, fencing and the area where the railway line was situated are still visible. Photographs of intact and dismantled buildings are provided below.

Figure 5: Intact coal hoppers

Figure 6: Power station building

Figure 7: Interior of power station building

Figure 8: Remains of foundations, structures and intact cooling tower

Figure 9: Water reservoirs situated close to power station building

Figure 10: Dismantled ablution block

A Muslim cemetery was found on the project site close to Sasar Road. The graves are a mix of old graves that are over 60 years of age and more recent graves with a number of recent burials. The cemetery is well tended and presumably visited by family and friends. The area immediately north of the graves (see **Figure 11** below) appears to be part of the cemetery where more burials could take place.

Figure 11: Portion of cemetery with old graves

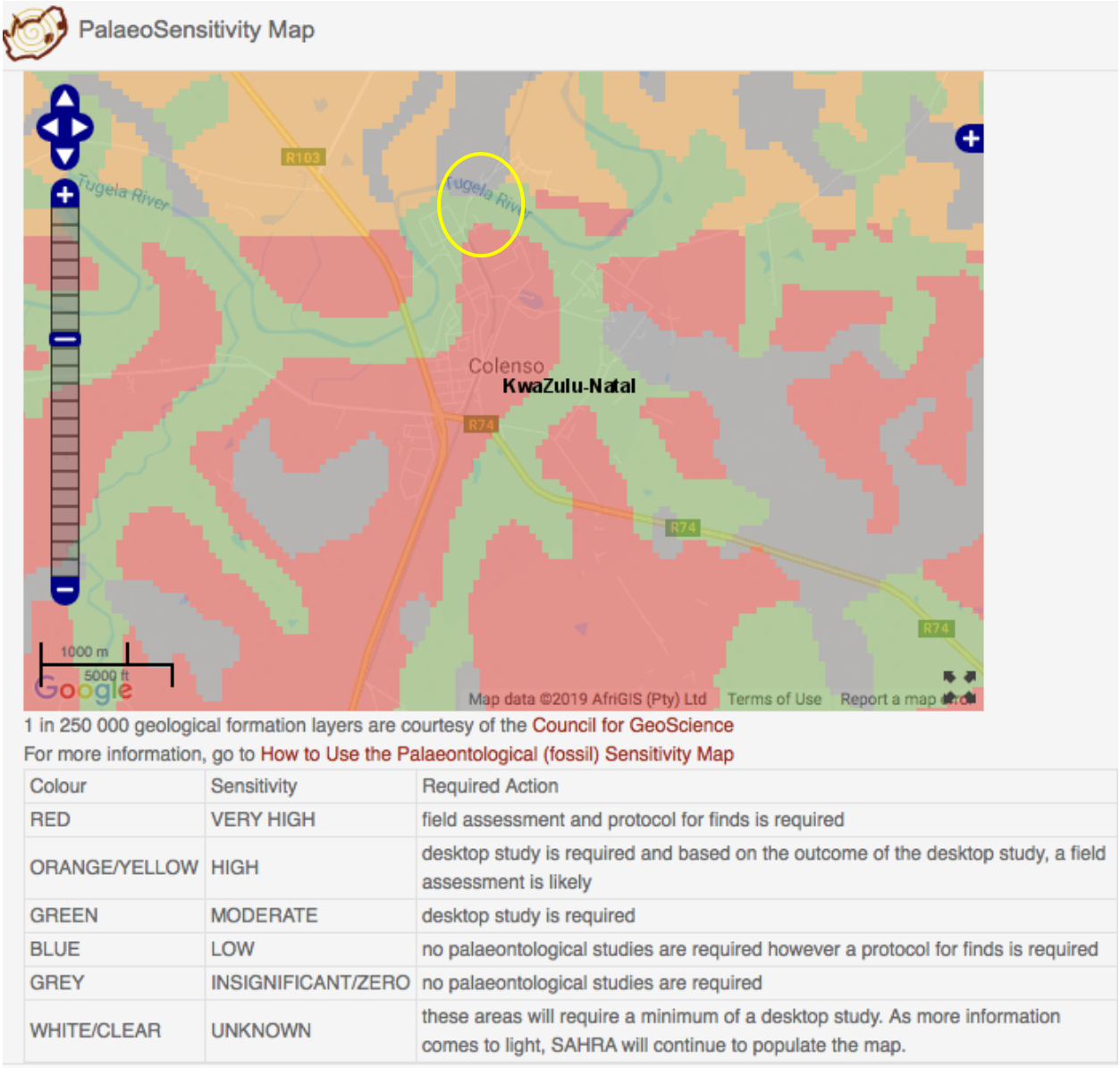
Figure 12: Old graves in forefront and newer graves indicated by mounds of soil

Several elevated oblong structures filled with soil were found near a building which is still partially intact and which could have been a coal bunker. It is unclear whether the structures are graves but it is thought that they are raised garden beds.

Figure 13: Raised oblong structures

The South African fossil sensitivity map indicates that the project site falls into an area of moderate fossil sensitivity indicated by the green colour in **Figure 14** below with an overlap into an area of very high fossil sensitivity indicated by the red colour in the figure below. Due to the highly disturbed nature of the project area as well as the moderate sensitivity, a desktop palaeontological study was undertaken to determine if sensitive fossils would be impacted by the proposed steel smelter.

The desktop palaeontological study (see **Appendix 1**) determined that the proposed project site lies on the alluvium and partly consolidated fine-grained sands of the Kalahari Group, Quaternary age, alongside the Tugela River. The town lies on shales of the Adelaide Subgroup, Karoo Supergroup. Non-fossiliferous dolerite dykes of Jurassic age are nearby. There is a small chance that fossils from upstream could have been transported by the river along with the sands, such as silicified wood or heavy bones. Since there is a small chance that fossils could be discovered once excavations commence for the proposed smelter plant, a Fossil Chance Find Protocol, as provided in Chapter 8 of the desktop study, must be added to the Environmental Management Programme (EMPr) and adhered to. Based on this information, it is recommended that no palaeontological site visit is required unless the geologist or responsible person on-site discovers fossils.



1 in 250 000 geological formation layers are courtesy of the Council for GeoScience

For more information, go to How to Use the Palaeontological (fossil) Sensitivity Map

Colour	Sensitivity	Required Action
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Figure 14: Fossil sensitivity of project site indicated by yellow oblong

Largely intact structures and other heritage resources found during the site inspection are listed below in **Table 1** together with their heritage rating.

Table 1: List of heritage resources

COORDINATES	HERITAGE RESOURCE & SIGNIFICANCE	HERITAGE RATING
28°44'04.3" S; 29°49'41.3" E	Muslim cemetery with >50 graves; mix of old and new graves; high heritage significance	Local Grade IIIA – burial ground must be retained as a heritage site
28°44'03.2" S; 29°49'41.5" E	Structure that could be connected with cemetery; its use is unclear; low heritage significance	Generally Protected B – the structure needs to be recorded before destruction
28°44'00.6" S; 29°49'43.1" E	Raised oblong structures that could either be graves or flower beds; if graves high heritage significance; if flower beds no significance	Local Grave IIIA if they are graves, they must be retained; if flower beds, they can be destroyed

COORDINATES	HERITAGE RESOURCE & SIGNIFICANCE	HERITAGE RATING
28°43'58.8" S; 29°49'42.5" E	Front of structure that could have been a coal bunker; low heritage significance	Generally Protected B – the structure needs to be recorded before destruction
28°43'52.4" S; 29°49'37.1" E	Power station building/control room; medium heritage significance as it is part of a complex that was one of the longest service power stations; structure is also >60 years. Recommended that it is left *in-situ*	Generally Protected B – the structure needs to be recorded before destruction
28°43'52.7" S; 29°49'38.2" E	Water pump building, possibly connected to power station building & >60 years in age; low heritage significance	Generally Protected B – the structure needs to be recorded before destruction
28°43'52.7" S; 29°49'38.7" E	Water cooling pools/reservoirs possibly connected to power station building, >60 years; low heritage significance	Generally Protected B – the structures need to be recorded before destruction
28°43'53.4" S; 29°49'39.8" E	Structure immediately north of cooling pools/reservoirs, >60 years; low heritage significance	Generally Protected B – the structure needs to be recorded before destruction
28°43'52.3" S; 29°49'41.1" E	Large rectangular structure, >60 years; low heritage significance	Generally Protected B – the structure needs to be recorded before destruction
28°43'53.3" S; 29°49'44.3" E	Centre point of series of dismantled structures; either houses or administration block; >60 years; low heritage significance	Generally Protected B – the structures need to be recorded before destruction
28°43'57.0" S; 29°49'43.8" E	Coal hoppers; >60 years; low heritage significance	Generally Protected B – the structures need to be recorded before destruction
28°43'58.8" S; 29°49'49.1" E	Centre point of 3 x cooling towers; > 60 years; medium heritage significance as part of complex that was one of the longest serving power stations in the country; recommended that the cooling towers are left *in situ*	Generally Protected B – the structure needs to be recorded before destruction
28°44'19.6" S; 29°49'49.6" E	Anglo-Boer War gun positions and memorials; outside project site; high heritage significance	Local Grade IIIA – sites must be retained as a heritage site

8. DISCUSSION, RECOMMENDATIONS AND CONCLUSION

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 their removal. The burial ground found is still utilised and cared for. It is recommended that is left *in situ*, that a fenced buffer of 20 m is placed around the whole of the burial ground including the unused section and that an access gate is provided from Sasar Road to allow family and friends to visit the cemetery.

If the elevated oblong structures (graves/flowerbeds) are to be impacted by the proposed steel smelter, then a Phase 2 heritage assessment of the structures needs to be undertaken to determine whether they are graves or not. If it is possible, it is recommended that they are avoided during the construction of the smelter.

The structures and remains of structures found on site 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. Besides the historical significance of some of the structures, many have been reduced to foundation level leaving minimal possibilities of conservation. Most of the remains of structures are there therefore assigned a low heritage rating apart from largely intact power station building and cooling towers that are reminders of one of the longest serving power stations in the province and country.

Therefore, as the structures found on site are older than 60 years, if any are to be demolished to make way for the smelter, then application will have to be made to the Institute for permission to do so.

The proposed construction of the steel smelter can proceed from a heritage perspective as long as the recommendations and mitigation measures proposed by both this report and that of the desktop palaeontological study are implemented.

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 steel smelter.
- 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 heritage resource/s found 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.

10. REFERENCES

Active Heritage. 2015. *Phase One Cultural Heritage Impact Assessment of proposed breaking of less than 100 hectares of virgin land on portion 10 of the Farm Kopleegte No. 1154, near Colenso, in the Okhlahlamba Local Municipality within the uThukela District, KwaZulu-Natal*.

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