

**NSEZI NEW DN1500 RAW WATER PIPELINE,
RICHARDS BAY, KWAZULU-NATAL**

Phase 1 Heritage Impact Assessment

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**FOR: ENVIROPRO
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EXECUTIVE SUMMARY

The primary purpose of the Nsezi Water Treatment Plant (WTP) is to provide high-quality water for the manufacture of paper and to supply various local authorities with potable water for domestic and industrial use. An existing DN1500 pipeline currently terminates at the Shooting Range. A new D1500 pipeline will be constructed to connect the Shooting Range pump station to the Nsezi WTP Head of Works. The new DN1500 pipeline is required to increase the supply of raw water to the plant and therefore is critical if the plant is to be upgraded.

Initially, the new pipeline was to be situated within the existing WTP servitude, running parallel to an existing 1.2m diameter raw water pipeline. However, in November 2021, it was decided to locate the new pipeline close to an existing gravel road which is situated between the WTP servitude and railway lines.

The length of the proposed raw water pipeline is approximately 4.6km hence it triggers sections 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. 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 300m in length.

The new pipeline is situated approximately 8 km west of Richards Bay. The Shooting Range start/end of the pipeline is located at 28°46'07.77" S 31°57'56.08" E and the Nsezi WTP location is at 28°44'58.51" S 31°58'54.33" E. Much of the new pipeline route is located parallel to an existing road. There is a short (800m) alternative route recommended near the northern end of the pipeline route.

An inspection of the amended pipeline route was undertaken on 24 November 2021. Visibility was good in general; however, there were sections where there was thick vegetation which made visibility and access difficult at times.

The alternative section of the pipeline route was inspected first on foot. Sections of the alternative route are overgrown with vegetation including thickets of sickle bush but, in general, visibility was good. No heritage sites were found during the inspection of this alternative section. The route of the pipeline along the gravel road from the north was inspected on foot. There is existing infrastructure along this route as well as stormwater outlets, a substation and minor access routes leading to the substation, power lines and WTP servitude. There is also some dumping of building rubble. No heritage sites were found during the inspection.

As the pipeline approaches the southern end of the route, the area becomes more disturbed with buildings and access road associated with the Richards Bay Sport Shooting Club as well as the Shooting Range pump station infrastructure.

The fossil sensitivity map of the South Africa indicates that the project area falls into a zone of low palaeontological sensitivity. With a low fossil sensitivity, no further studies are required; however, a fossil chance find protocol is required which is included in Chapter 9 of this report.

No heritage sites were found during the walk down site inspection of the proposed pipeline route. This is due to the disturbed nature of the route which is located adjacent to an area that comprises a gravel road and railway lines. There is also existing water infrastructure near the route of the pipeline as well as power lines. In terms of the alternative route proposed for the pipeline, it is recommended that this alternative route is not used as the area it crosses is less disturbed than the pipeline route alongside the gravel road.

It is recommended that from a heritage perspective, the installation of the proposed new Nsezi raw water pipeline can take place.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
TABLE OF CONTENTS	iv
1. INTRODUCTION	6
2. LEGISLATIVE BACKGROUND	6
3. LOCATION	7
4. TERMS OF REFERENCE	10
5. METHODOLOGY AND CONSTRAINTS	10
6. HISTORICAL BACKGROUND OF PROJECT AND SURROUNDING AREA	10
7. RESULT OF SITE INSPECTION	11
8. CONCLUSIONS	21
9. MITIGATION MEASURES	22
10. REFERENCES	23

FIGURES

Figure 1: Route of new raw water pipeline depicted with red line with alternative depicted in yellow	8
Figure 2: 1957 topographical map with approximate position of pipeline indicated in yellow	9
Figure 3: Location of photographs	12
Figure 4: Northern portion of alternative section of pipeline route	13
Figure 5: View along alternative section of pipeline route	13
Figure 6: Thickets of sickle bush along pipeline route	14
Figure 7: Section of route along existing road	14
Figure 8: Pipeline route with manhole, power lines and road visible.....	15
Figure 9: Stormwater outlet.....	15
Figure 10: Building rubble	16
Figure 11: Area between road and railway line	16
Figure 12: Pipeline route crossing minor access road.....	17
Figure 13: Buffer area.....	17
Figure 14: Substation with pipeline route between substation and road	18
Figure 15: Mini-substation between road and railway line	18
Figure 16: Pipeline route with road and railway line visible	19
Figure 17: Entrance to Richards Bay shooting club.....	19
Figure 18: Existing infrastructure and access road	20
Figure 19: Fossil sensitivity of pipeline indicated in yellow	21

I, Jean 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 IAIAasa (No. 1538)

1. INTRODUCTION

The primary purpose of the Nsezi Water Treatment Plant (WTP) is to provide high-quality water for the manufacture of paper and to supply various local authorities with potable water for domestic and industrial use. An existing DN1500 pipeline currently terminates at the Shooting Range. A new D1500 pipeline will be constructed to connect the Shooting Range pump station to the Nsezi WTP Head of Works. The new DN1500 pipeline is required to increase the supply of raw water to the plant and therefore is critical if the plant is to be upgraded.

Initially, the new pipeline was to be situated within the existing WTP servitude, running parallel to an existing 1.2m diameter raw water pipeline. However, in November 2021, it was decided to locate the new pipeline close to an existing gravel road which is situated between the WTP servitude and railway lines.

The Phase I HIA was undertaken to assess whether any heritage resources will be impacted by the construction of the proposed new water pipeline along the new route.

2. LEGISLATIVE BACKGROUND

The length of the new raw water pipeline is approximately 4.6km hence it hence it triggers sections 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. 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 300m in length”.

The project may also impact 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).

3. LOCATION

The WTP and new pipeline is situated approximately 8 km west of Richards Bay. The Shooting Range start/end of the pipeline is located at 28°46'07.77" S 31°57'56.08" E and the WTP location is at 28°44'58.51" S 31°58'54.33" E. Much of the new pipeline route is located parallel to an existing road. There is a short (800m) alternative route recommended near the northern end of the pipeline route (see **Figure 1** below). Power lines also run close to much of the proposed new pipeline route.

Figure 2 shows a portion of the 1:50 000 map dated 1957 (2831DD) which was obtained from the Department of Rural Development and Land Reform's CDNGI Geospatial Portal (www.cdnqiportal.co.za).

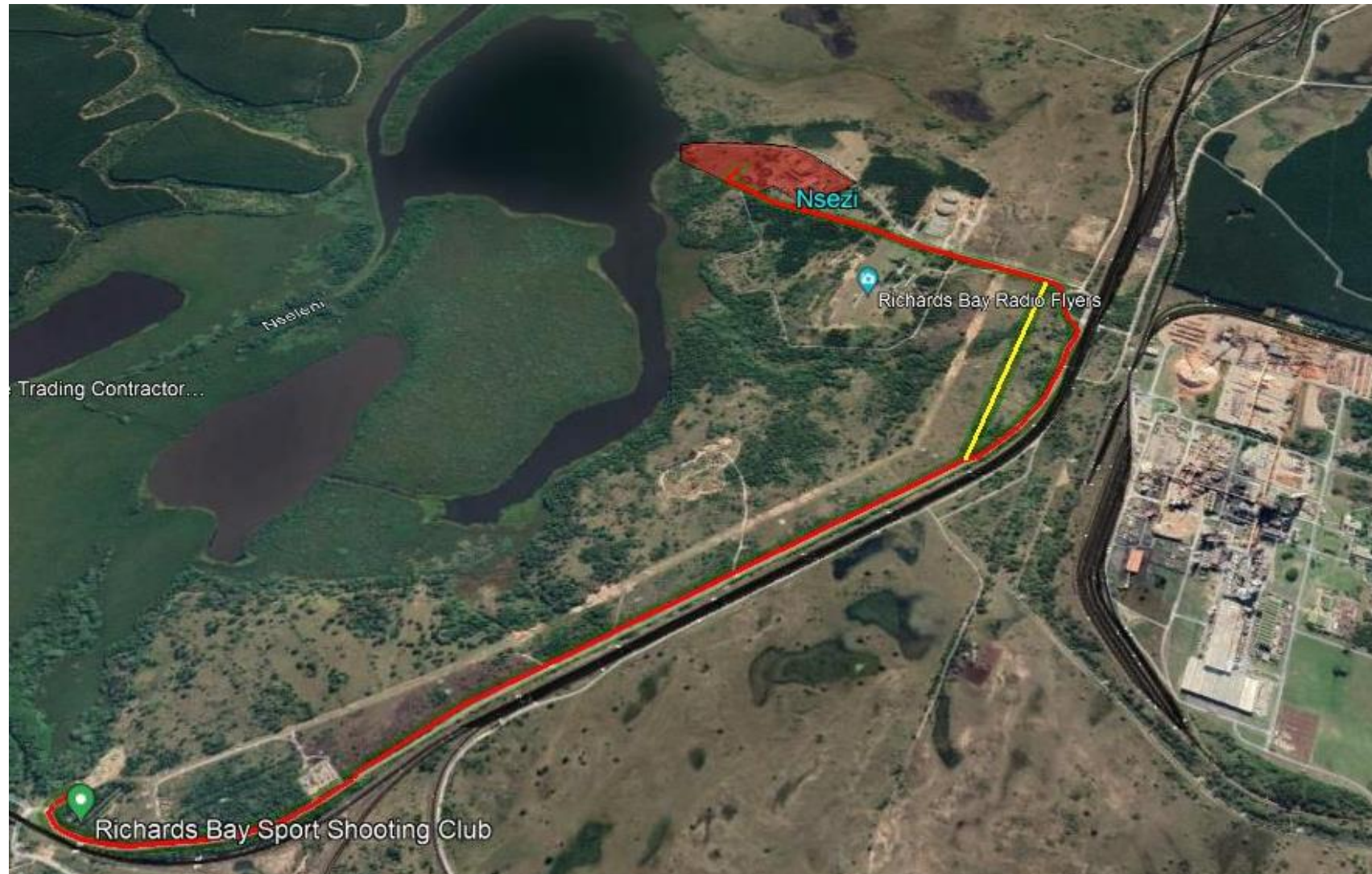


Figure 1: Route of new raw water pipeline depicted with red line with alternative depicted in yellow

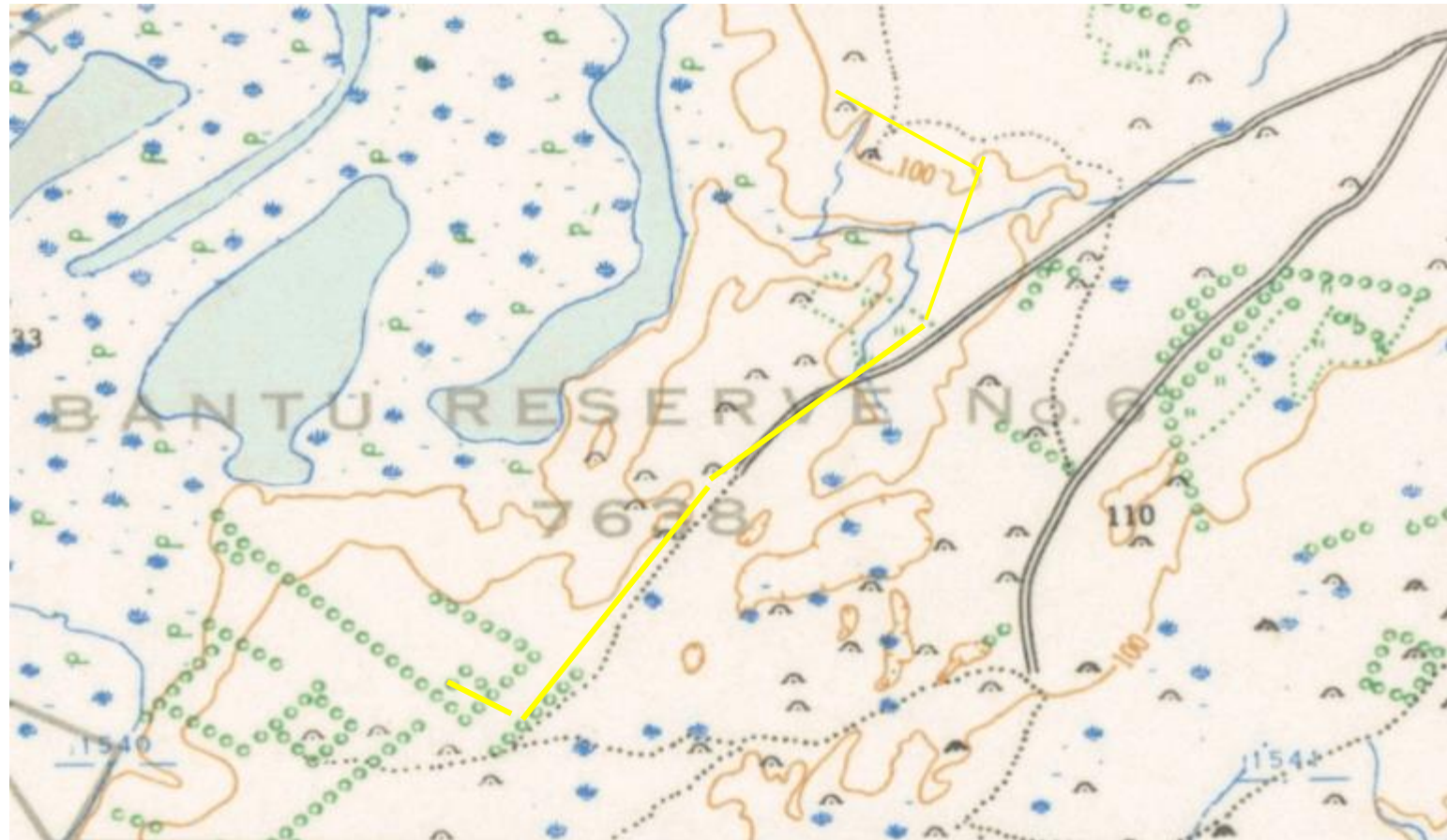


Figure 2: 1957 topographical map with approximate position of pipeline indicated in yellow

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 installation of the proposed pipeline. 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, the KwaZulu-Natal Amafa and Research Institute (hereafter referred to as the Institute), for their assessment and comment

5. METHODOLOGY AND CONSTRAINTS

A survey of literature, including other heritage impact assessment reports that may have been 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 amended pipeline route was undertaken on 24 November 2021. Visibility was good in general; however, there were sections where there was thick vegetation which made visibility and access difficult at times. The whole of the proposed new pipeline alignment was inspected on foot including a 50m buffer on either side of the route. The south-eastern buffer area is highly disturbed by the existing gravel road and railway lines.

6. HISTORICAL BACKGROUND OF PROJECT AND SURROUNDING AREA

In Southern Africa, the archaeology is divided into the Stone Age, Iron Age and the Historical Period. The greater Richards Bay area and surrounding regions have a long history of occupation by Stone Age hunter gather groups, Iron Age farming communities and colonial settlers (de Bruyn 2019:25). The archaeological history of KwaZulu-Natal (KZN) dates back to about 2 million years and possibly older marking the beginning of the Stone Age period. Two known Early Stone Age (ESA) sites occur in the proposed land of 5333 Richards Bay, where artefacts such as hand-axes and cleavers have been found. During the survey for the proposed expansion to the Richards Bay harbour, ESA and Middle Stone Age (MSA) stone tools were found on the surface of a disturbed area (de Bruyn 2019: 27, 28).

Ceramics of the Mzonjani Facies from the Early Iron Age (EIA) period have also been located around Richards Bay. Mzonjani settlements provide the earliest evidence of Iron age settlement in KZN. Ceramic pottery styles of the Kalundu Tradition, including Msuluzi (AD 500-700), Ndondondwane (AD 700-800), and Ntshekane (AD 800-900), are found in the broader areas around Durban and Richards Bay and near the Tugela River. During the above-mentioned survey for the proposed expansion of the Richards Bay harbour, several EIA pottery shards were found scattered across the site (de Bruyn 2019: 29-30).

The early historical period of the Mhlathuze lagoon and environs comes from a few written records from stranded European mariners, traders and their clients who passed through the area from the 15th century onwards. The Mhlathuze and Nsezi marshes that extend some 20km inland were a formidable barrier to these travellers who were forced inland along the Empangeni ridge before proceeding further (Cubbin 1997:7-8).

An official survey of the Zululand coast was carried out by the boat HMS Forester in 1879. During the survey the area surrounding the mouth of the Mhlathuze River was named Richards Bay. In December 1879 Richards Bay appeared on Admiralty Chart No. 2089 for the first time. During the Anglo-Zulu war in 1879, the Commodore of the Cape, Sir Frederick Richards used the area around Richards Bay as a harbour. Richards Bay was surveyed again in 1902 by Cathcart Methven, who determined that the area had the potential to be developed into a harbour. In 1907 the fort wagon trail from Empangeni to Richards Bay was established by George Higgs and in 1969 it was proclaimed as a town and the harbour opened in 1976 (de Bruyn 2019:34).

7. RESULT OF SITE INSPECTION

The proposed pipeline route was inspected from north to the south starting at the Nsezi WTP. The location of **Figures 4 – 18** are indicated on **Figure 3** below.

The alternative section of the pipeline route (depicted in yellow in **Figure 3**) was inspected first. Sections of the alternative pipeline route are overgrown with vegetation including thickets of sickle bush but, in general, visibility was good. No heritage sites were found during the inspection of this alternative section.

The specialist spoke to several pedestrians walking along the grave road and they all said that to their knowledge there were no graves or other heritage sites in the general area.



Figure 3: Location of photographs



Figure 4: Northern portion of alternative section of pipeline route



Figure 5: View along alternative section of pipeline route



Figure 6: Thickets of sickle bush along pipeline route

The route of the pipeline along the gravel road from the north was inspected on foot. There is existing infrastructure along this route as well as stormwater outlets, a substation and minor access routes going to the substation, power lines and WTP servitude. There is also some dumping of building rubble. No heritage sites were found.



Figure 7: Section of route along existing road



Figure 8: Pipeline route with manhole, power lines and road visible



Figure 9: Stormwater outlet



Figure 10: Building rubble



Figure 11: Area between road and railway line



Figure 12: Pipeline route crossing minor access road



Figure 13: Buffer area



Figure 14: Substation with pipeline route between substation and road



Figure 15: Mini-substation between road and railway line



Figure 16: Pipeline route with road and railway line visible

As the pipeline route approaches the southern end of the route, the area becomes more disturbed with buildings and access road associated with the Richards Bay Sport Shooting Club as well as the Shooting Range pump station as depicted in **Figures 17 and 18** below.



Figure 17: Entrance to Richards Bay shooting club



Figure 18: Existing infrastructure and access road

The fossil sensitivity map of the South Africa indicates that the project area falls into a zone of low palaeontological sensitivity as indicated with the blue colour in **Figure 19** below. With a low fossil sensitivity, no further studies are required; however, a fossil chance find protocol is required. This protocol is included in Chapter 9 of this report.

The sustainable socio-economic impacts of the proposed raw water pipeline are as follows:

- Improved provision of high-quality water to support local industrial activities.
- Increased provision of potable water for domestic use. The pipeline will be significant for the regional community as there will be an increased supply of potable water.
- Provision of employment for local labour. The construction of the pipeline will result in a small number of employment activities during the construction phase. No further employment opportunities will be created during the operation of the pipeline.
- Skills development through intensive programmes directly involved in the planning, construction and commissioning of the pipeline.

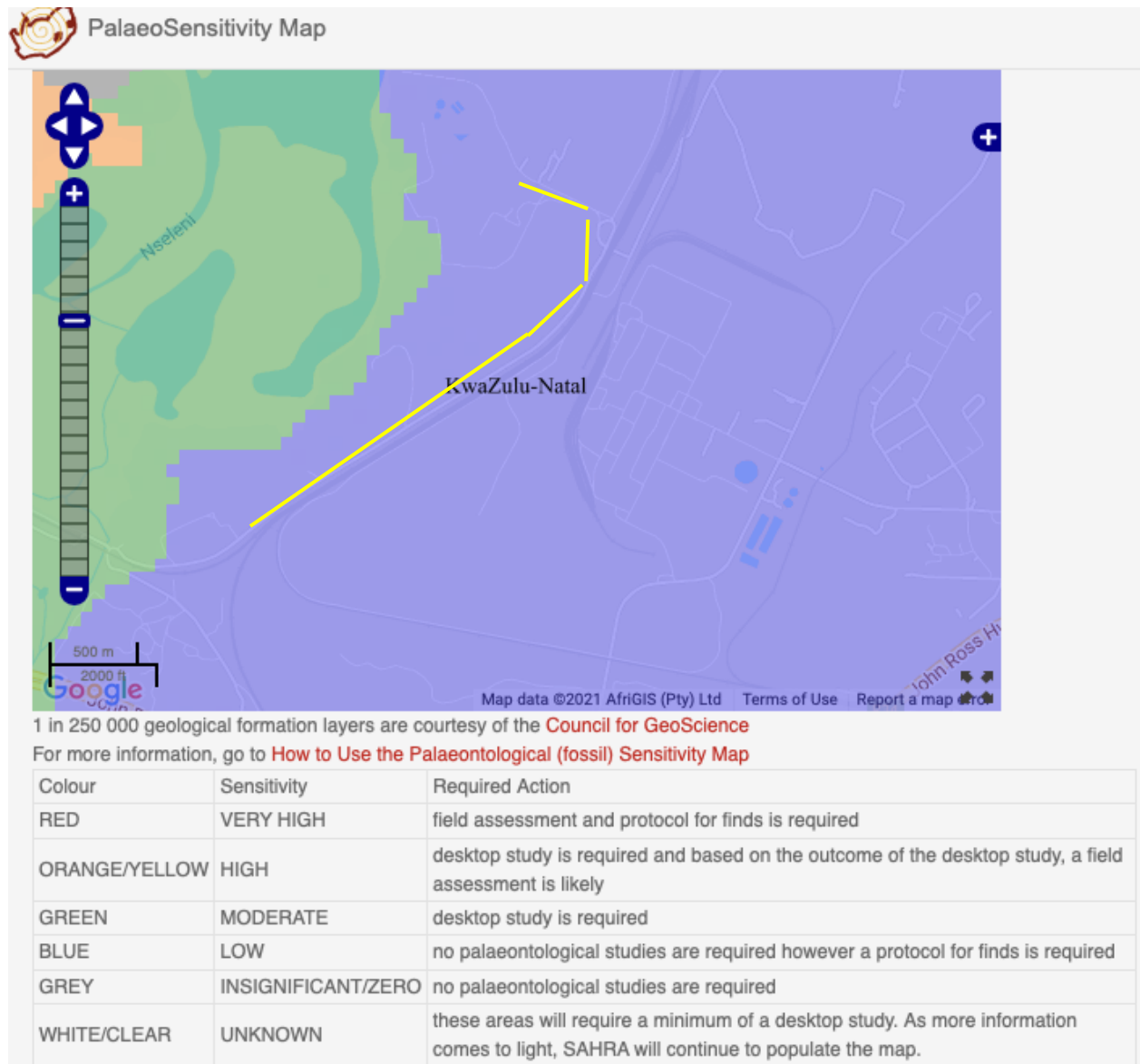


Figure 19: Fossil sensitivity of pipeline indicated in yellow

8. CONCLUSIONS

No heritage sites were found during the walk down site inspection of the proposed pipeline route. This is due to the disturbed nature of the route which is located adjacent to an area that comprises a gravel road and railway lines. There is also existing water infrastructure near the route of the pipeline as well as power lines.

In terms of the alternative route proposed for the pipeline, it is recommended that this alternative route is not used as the area it crosses is less disturbed than the pipeline route alongside the gravel road.

From a heritage perspective, therefore, the installation of the proposed new Nsezi raw water pipeline can proceed.

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 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 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 construction activities begin, any rocks disturbed during this process must be given a cursory inspection 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 is any possible fossil material found by the environmental officer/miners then the qualified palaeontologist must be sub-contracted in order for them to visit the site to inspect the selected material and check the dumps where feasible.
 - Fossil plants or vertebrates that are considered 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, permit must be obtained from the Institute. Annual reports must be submitted to the Institute as required by the relevant permits.

10. REFERENCES

Anderson, G. 2012. *Archaeological survey of the Richards Bay Minerals Zulti North & Tisand mining leases*

Cubbin, T. 1997. A history of Richards Bay 1497 – 1970's in *Zululand Annals Vol. iii. Zululand History Society*.

Department of Rural Development and Land Reform's CDNGI Geospatial Portal (www.cdngiportal.co.za)

NGT Holdings. 2019. *The East Coast gas 400kV power lines, located in Richards Bay, within the Umhlathuze Local Municipality in the King Cetshwayo District Municipality in the KwaZulu-Natal Province*.