

**MGENI ADIT, ZULULAND ANTHRACITE COLLIERY
NEAR ULUNDI, KWAZULU-NATAL**

Phase 1 Heritage Impact Assessment

May 2018

**FOR: GCS Water and Environmental (Pty) Ltd
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REF: 17-1186

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EXECUTIVE SUMMARY

Zululand Anthracite Colliery (ZAC) proposes to construct the Mgeni Adit in order to provide access to the underground workings. The proposed development is situated some distance from the existing ZAC operation which is situated east of Ulundi in KwaZulu-Natal. This report is the Phase 1 Heritage Impact Assessment (HIA) for the proposed Mgeni Adit.

The footprint of the proposed Mgeni Adit is approximately 7.5 Ha (75000 m²) in size hence it triggers section 38 (1) (c) (i) of the National Heritage Resources Act, 1999 (Act No 25 of 1999) that refers to developments categorised as—

(c) any development or other activity which will change the character of a site—

(i) exceeding 5 000 m² in extent

The approximate midpoint of the proposed Mgeni Adit is at S28°10'59.51"; E31°43'21.73". Some of the area is undeveloped (greenfields) and is currently grazed by goats and cattle whilst the village of Masokaneni is situated on the eastern boundary of the proposed development.

An inspection of the project site was undertaken on 27 March 2018. The specialist was accompanied during the site inspection by the Induna of the village whose assistance was invaluable. Visibility was good in some areas; however, there were areas where dense vegetation made visibility difficult.

Surface disturbances related to the development include the entrance to the ground works, office and ablution blocks and stockpiles that are to be constructed to the west of the Masokaneni village. There are numerous graves and cemeteries in the village situated amongst the houses and in uninhabited areas. The grave sites found during the site inspection are listed in the main body of the report. It is possible that not all the grave sites were discovered during the site inspection.

Apart from the graves, one very large Shembe temple/worship site, with a diameter of approximately 35m, will be directly impacted by the proposed pollution control (PC) dam. Two dwellings associated with the Shembe site are situated 20 m from the site.

An area where over 40 graves were found is situated within 100 m of the proposed vent fan. Most of the graves are made of rectangular mounds of rock with several having an upright rock as a headstone at the head of the grave. In addition, the remains of what could be a Shembe temple is situated close to the graves. An additional area where many graves were found is situated about 500 m south of the proposed PC dam.

It should be noted that although no graves were found in the proposed footprint of Mgeni Adit during the site inspection, it does not mean that there are no graves. Graves are often hard to detect in areas of dense vegetation which covered parts of the project area.

All the graves identified are protected by section 35 of the KwaZulu-Natal Heritage Act (KZNHA) (No. 4 of 2008), which refers to general protection of traditional graves as well as section 36 (a) (b) of the National Heritage Resources Act (No 25 of 1999), which states that no person may destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years. Several of the graves found during the site inspection are older than 60 years.

According to the South African fossil sensitivity map, the proposed Mgeni Adit falls within an area of very high fossil sensitivity interspersed with small areas of insignificant or zero fossil sensitivity. It is recommended that, at a minimum, a desktop palaeontological impact assessment is undertaken to determine the extent of impact and whether a field assessment is required. This study must be undertaken prior to the development of the proposed Mgeni Adit.

The potential impacts of the development on heritage resources was assessed as per the methodology provided by the Environmental Assessment Practitioner. The heritage resources identified that could be impacted by the proposed development:

- Damage or destruction of graves and burial grounds;
- Damage or destruction of sites of significance to the community pertaining to religious/spiritual practices;
- Destruction of palaeontological/fossil sites and material.

The assessment of impacts during the construction and operational phases indicates that with mitigation, the impact on graves and religious sites will be a low (negative) impact. The impact on palaeontology during construction will, post-mitigation, be a medium impact as it that significant fossils finds could be impacted by the construction of the Mgeni Adit. The palaeontological assessment of impacts is not conclusive without at least a desktop palaeontological assessment being undertaken to determine the presence (or not) of fossils and the way forward.

The proposed Mgeni Adit will have a high impact on heritage sites if mitigation measures are not implemented. All measures recommended in this report are to be implemented. Due to the very high fossil sensitivity of the project area, the project may proceed only once the desktop palaeontological assessment has been undertaken. Once these recommendations and mitigation

measures are undertaken, the construction of the new adit may then proceed from a heritage perspective.

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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

Zululand Anthracite Colliery (ZAC) proposes to construct a new adit to provide access to the underground workings as well as an open cast mine in the vicinity of the existing ZAC operation which is situated east of Ulundi in KwaZulu-Natal. The new adit is referred to as Mgeni Adit and the open cast mine is referred to as Deep E Open Cast.

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

Specialist studies, including a heritage impact assessment, have been undertaken for the Deep E Open Cast in 2011. The heritage specialist has been requested by the Environmental Assessment Practitioner (EAP) to undertake a review of this heritage report. The review of the report is attached to this report as **Appendix 2**.

2. LEGISLATIVE BACKGROUND

The footprint of the proposed Mgeni Adit is understood to be approximately 7.5 Ha (75000 m²) in size hence it triggers section 38 (1) (c) (i) of the National Heritage Resources Act, 1999 (Act No 25 of 1999) that lists activities that require a heritage impact assessment (HIA). The relevant sub-section refers to developments categorised as—

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

In addition, the proposed adit may impact on graves, structures, archaeological and palaeontological resources that are protected in terms of sections 33, 34, 35, and 36 of the KwaZulu-Natal Heritage Act (KZNHA) (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:

- (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 Mgeni Adit.

3. LOCATION

The approximate midpoint of the proposed Mgeni Adit is at S28°10'59.51"; E31°43' 21.73". Much of the area is undeveloped (greenfields) and is currently grazed by goats and cattle and criss-crossed with access paths and roads whilst the village of Masokaneni is situated on the eastern boundary of the proposed development (see **Figure 1** below).

A locality map showing the proposed Mgeni Adit in relation to the existing ZAC operations area is provided in **Figure 2**.

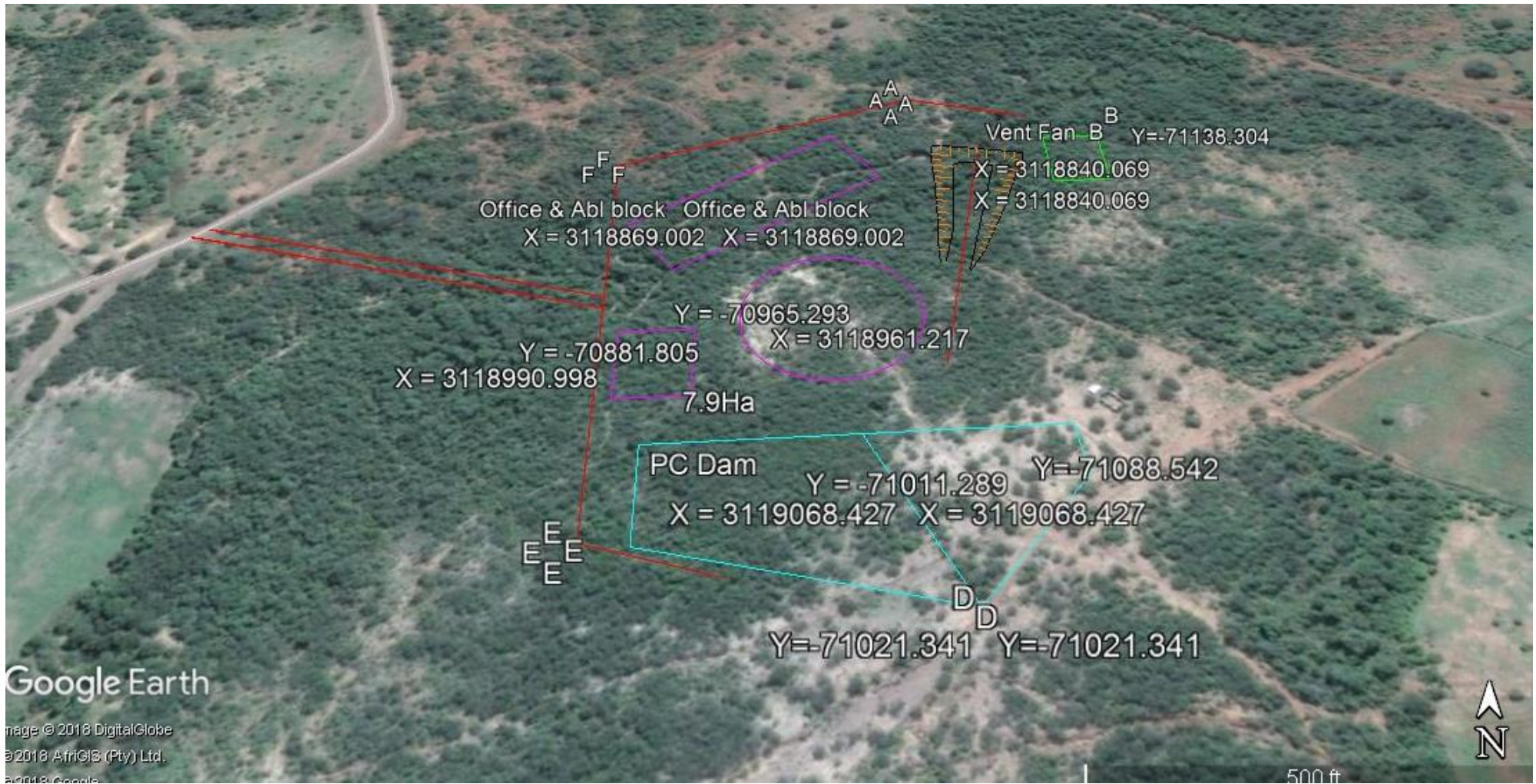


Figure 1: Aerial view of proposed Mgeni Adit

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 Mgeni Adit. 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, Amafa aKwaZulu-Natali (Amafa), 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 27 March 2018. The specialist was accompanied by Induna Mpunthosi of Masokaneni village and he was of great assistance in pointing out grave and other heritage sites as well as talking to community members. Visibility was good in some areas; however, there were areas where dense vegetation made visibility difficult even when sites were pointed out by members of the community.

5.1 Impact Assessment Methodology

As required by the EAP, the following methodology was used when assessing identified impacts in terms of heritage resources:

Each impact identified was assessed in terms of probability (likelihood of occurring), scale (spatial scale), magnitude (severity) and duration (temporal scale). To enable a scientific approach to the determination of the environmental significance (importance), a numerical value was linked to each rating scale.

The following criteria was applied:

Occurrence

- Probability of occurrence (how likely is it that the impact may occur?); and
- Duration of occurrence (how long the impact may last).

Severity

- Magnitude (severity) of impact (will the impact be of high, moderate or low severity?); and
- Scale/extent of impact (will the impact affect the national, regional or local environment, or only that of the site?).

Probability:=P

5 – Definite/don't know; 4 – Highly probable; 3 – Medium probability 2 – Low probability; 1 – Improbable; 0 – None

Scale:=S

5 – International; 4 – National; 3 – Regional; ;2 – Local; 1 – Site only 0 – None

Status of Impact

+: Positive

-: Negative N: Neutral

Duration:=D

5 – Permanent; 4 - Long-term (ceases with the operational life); 3 - Medium-term (5-15 years); 2 - Short-term (0-5 years); 1 – Immediate

Magnitude:=M

10 - Very high/don't know; 8 – High; 6 – Moderate; 4 – Low; 2 – Minor

The following formula was applied to calculate the impact significance after the factors were ranked for each impact: $SP = (\text{magnitude} + \text{duration} + \text{scale}) \times \text{probability}$. In addition, the status of the impact is positive, negative or neutral (no impact).

Table 1: Impact Significance Ratings

SIGNIFICANCE	ENVIRONMENTAL SIGNIFICANCE	COLOUR CODE
High (positive)	>60	H
Medium (positive)	30 to 60	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	>-30	L
Medium (negative)	-30 to -60	M
High (negative)	<-60 (max = 100)	H

6. HISTORICAL BACKGROUND OF PROJECT AND SURROUNDING AREA

The greater area has been sporadically surveyed for archaeological heritage sites with the most systematic surveys occurred in the Umfolozi-Hluluwe Game Reserve which is situated close to the proposed development. Fifty nine Middle Stone Age (MSA) sites have been recorded in the nature reserve. MSA sites are associated with anatomically modern people and dates back to approximately 40 000 to 200 000 years ago. The vast majority of MSA sites in the game reserve are open-air sites AND therefore do not occur in archaeological context and have limited excavation value. Thirty Five Later Stone Age (LSA) sites occur in various localities in the game reserve. Although the majority of these sites are situated in open air context some are also associated with small shelters and caves. The Later Stone Age is usually associated with San hunter-gatherers or their immediate predecessors and dates back to between 200 years and 30 000 years ago. The game reserve also contains 11 Zululand rock art sites. Although not as well-known as the rock art of the Drakensberg the art of this region is nevertheless unique as it is probably older and executed in a different style from the Drakensberg art (Prins 2014:2-3).

Archaeological sites have also been recorded outside of the Umfolozi-Hluluwe Game Reserve although knowledge of these is more limited. Early Stone Age (ESA) tools have been recorded in the greater Ulundi district. Later Stone Age tools, belonging to the San and their immediate ancestors, occur in various localities in Zululand (Prins:3).

The earliest agricultural sites in KwaZulu-Natal date to between AD 400 and 550. All are situated close to sources of iron ore, and within 15 km of the coast. Current evidence suggests it may have been too dry further inland at this time for successful cultivation. From 650 onwards, however, climatic conditions improved and agriculturists expanded into the valleys of KwaZulu-Natal, where they settled close to rivers in savanna or bushveld environments. Several iron age furnaces occur in the Hluhluwe-Umfolozi Game Reserve (Mitchell 2002:356).

The emaKhosini valley (Valley of the Kings) is situated in the immediate environs of Ulundi. This area also contains the military capital of King Dingane – the half-brother and successor of Shaka. Sites associated with Zwide, the leader of the Ndwandwe clan who initially opposed Shaka, occurs closer to the project area not far from Nongoma (Prins:4).

Ulundi (oNdini) was the seat of the Zulu King Cetshwayo kaMpande and the last battle of the Anglo-Zulu War took place close to present-day Ulundi (Derwent 2006:16). The Battle of Ulundi was the decisive battle that took place on the 4th July 1879 and marked the end of the Anglo-

Zulu War, as well as the breakup of the Zulu nation. Cetshwayo was forced to flee but was captured in the Ngome forest in August and exiled to Robben Island (SAHO 2014:1)

On 30 April 1895, the Umfolozi area received formal protection as a game sanctuary from the Natal Colonial Government as the Imfolozi Junction Reserve, together with the Hluhluwe Valley Reserve. The corridor area between the Umfolozi and the Hluhluwe was incorporated in 1989 (Heritage Tours & Safaris 2017:1).

7. RESULT OF SITE INSPECTION

The specialist undertook the site inspection in the company of the Induna of Masokaneni village. Surface disturbances related to the development include the entrance to the ground works, office and ablution blocks and stockpiles that are to be constructed close to the village. **Figure 3** below shows some of the heritage sites in close proximity to the Mgeni Adit.

There are numerous graves and cemeteries in the village situated amongst the houses and in uninhabited areas close to the proposed area of development. **Table 2** lists the burial sites found during the site inspection. It is possible that not all the grave sites were discovered during the site inspection.

Dongas and drainage lines in the proposed area of development produced no artefacts or archaeological remains.

Apart from the graves, a very large fenced Shembe worship site or temple, with a diameter of approximately 35 m, was pointed out by the Induna (see **Figure 4** below). This site will be directly impacted by the proposed pollution control (PC) dam. The centre of the site is at 28°11'2.70"S; 31°43'25.08"E.

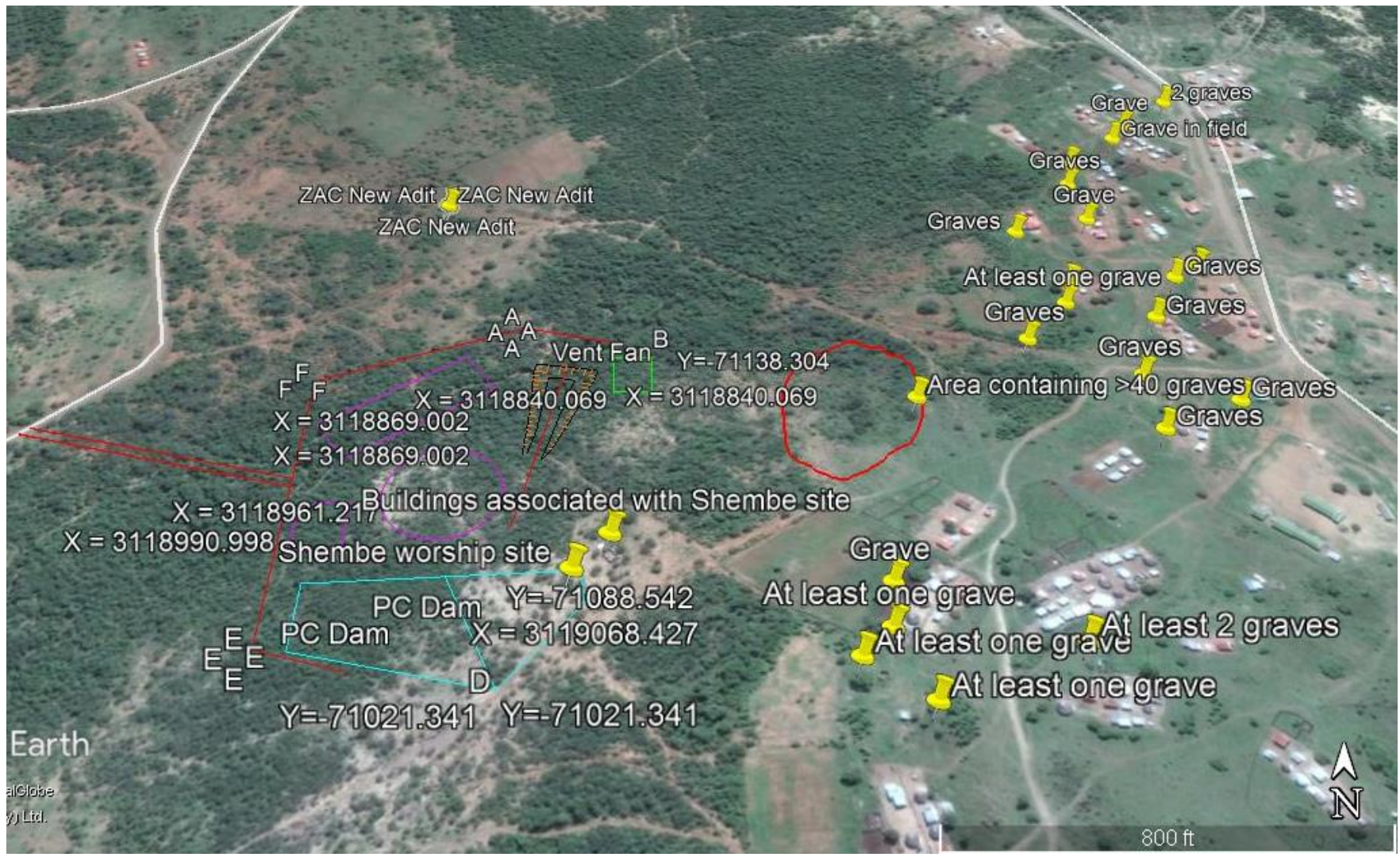


Figure 3: Mgeni Adit in relation to heritage sites



Figure 4: Section of Shembe temple

There are two dwellings located close to the Shembe site which, according to the Induna, were related to the site. They are situated 20 m from the temple. These structures are modern and are of interest only because of their association with the site.



Figure 5: Dwellings associated with Shembe temple

An area where many (over 40) graves were found is situated within 100 m of the proposed vent fan (see **Figure 7** below). The graves are found amongst bushes and dense vegetation. Most of the graves are indicated by rectangular mounds of rock with several having an upright rock as a

headstone at the head of the grave. In addition, a Shembe temple is possibly situated close to this burial ground. Although this site was not observed during the site inspection, it is visible on Google Earth. The approximate centre of the burial ground is at $28^{\circ}10'57.12''\text{S}$; $31^{\circ}43'33.28''\text{E}$. The area is demarcated in red in **Figure 6** below. The image also shows the Shembe site.

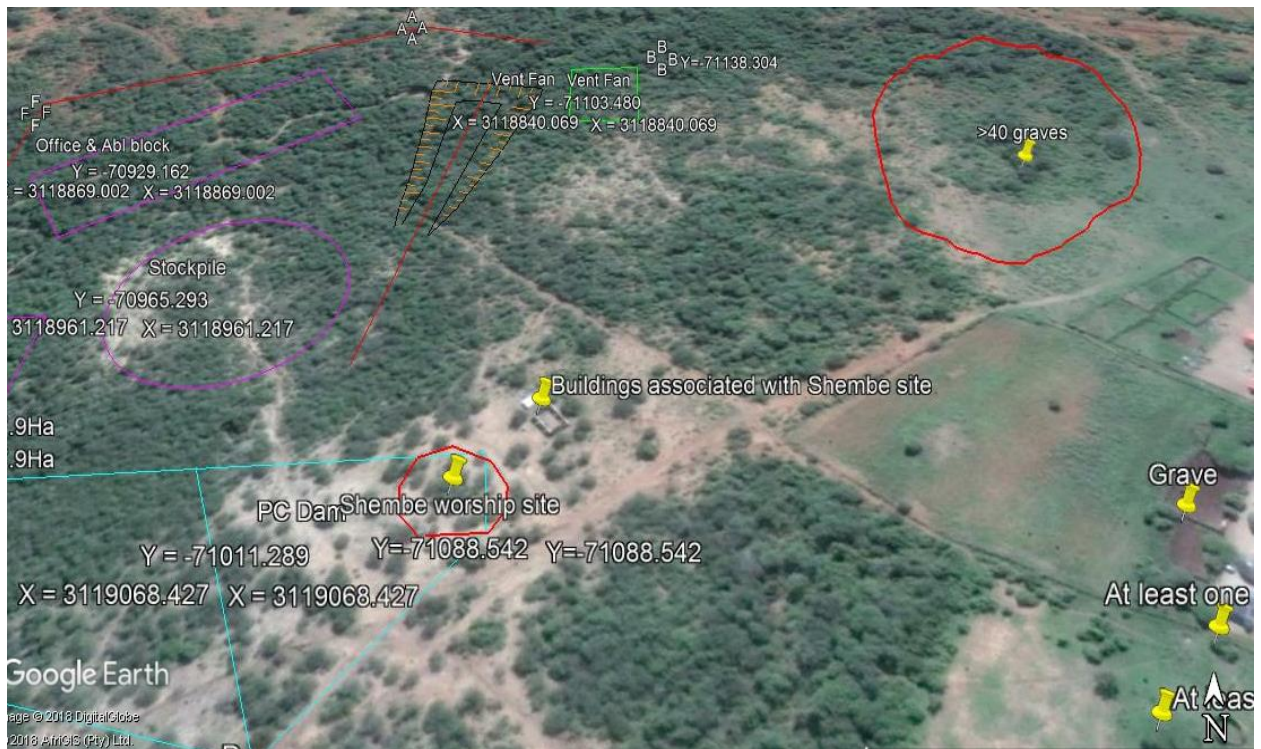


Figure 6: Area with graves in relation to vent fan and Shembe site



Figure 7: Several graves



Figure 8: Several graves

During the site inspection, it was discovered that many of the homesteads in the village had graves situated close to them. Most are made from mounds of stones with rudimentary headstones. Some of the graves found are more modern and are made from bricks and only two graves were found that had recent inscribed headstones made from granite. There is the occasional single grave and some of the graves are fenced as shown in **Figure 9** below.



Figure 9: Graves with fencing

A burial site containing well over 20 graves was also discovered amongst trees in an area situated approximately 500m south of the PC dam. Both traditional and modern graves were found in this area (see **Figures 10** and **11**). The approximate centre of the site is at 28°11'24.20"S; 31°43'25.40"E.



Figure 10: Modern grave situated close to traditional grave



Figure 11: Traditional graves

It should be noted that although no graves were found in the proposed footprint of Mgeni Adit during the site inspection, it does not mean that there are no graves. Graves are often hard to detect in areas of dense vegetation which covered parts of the project area.

All the graves found are protected by section 35 of the KwaZulu-Natal Heritage Act (KZNHA) (No. 4 of 2008), which refers to general protection of traditional graves accordingly:

(1) No grave –

(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, removed from its original position, or otherwise disturbed without the prior written approval of the Amafa Council having been obtained on written application to the Council.

In addition, section 36 (a) (b) of the NHRA, states that no person may, without a permit issued by SAHRA or a provincial heritage resources authority—destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority. There are several graves that are over 60 years of age amongst those found during the site inspection.

Table 2: List of heritage sites

NUMBER	COORDINATES	DESCRIPTION	MITIGATION
1	28°10'57.88"S; 31°43'32.85"E	Burial ground with >40 graves	Buffer of 20 m around burial ground
2	28°10'55.50"S; 31°43'37.90"E	Graves	Not to be disturbed by mining operations
3	28°10'54.20"S; 31°43'39.30"E	At least one grave	Not to be disturbed by mining operations
4	28°10'53.40"S; 31°43'39.60"E	Graves	Not to be disturbed by mining operations
5	28°10'51.20"S; 31°43'38.50"E	Graves	Not to be disturbed by mining operations
6	28°10'50.80"S; 31°43'40.80"E	Grave within yard of homestead	Not to be disturbed by mining operations
7	28°10'49.20"S; 31°43'40.60"E	Graves	Not to be disturbed by mining operations
8	28°10'48.20"S; 31°43'40.90"E	Graves	Not to be disturbed by mining operations
9	28°10'47.10"S; 31°43'42.60"E	Grave/s in field	Not to be disturbed by mining operations
10	28°10'46.50"S; 31°43'43.10"E	Single grave	Not to be disturbed by mining operations
11	28°10'45.40"S; 31°43'44.80"E	2 graves with modern granite inscribed headstones	Not to be disturbed by mining operations
12	28°10'53.00"S; 31°43'43.50"E	At least one grave	Not to be disturbed by mining operations

13	28°10'53.40"S; 31°43'42.70"E	Graves	Not to be disturbed by mining operations
14	28°10'54.90"S; 31°43'40.70"E	Graves	Not to be disturbed by mining operations
15	28°10'58.00"S; 31°43'43.00"E	Graves	Not to be disturbed by mining operations
16	28°10'58.90"S; 31°43'40.70"E	Graves	Not to be disturbed by mining operations
17	28°11'2.70"S; 31°43'25.08"E	Shembe temple	It is directly impacted by the PC dam; either the dam or the Shembe site must be moved
18	28°11'1.71"S; 31°43'26.01"E	Dwellings associated with temple	If the Shembe site is moved then the dwellings will have to be moved as well
19	28°11'3.40"S; 31°43'32.80"E	Grave	Not to be disturbed by mining operations
20	28°11'4.60"S; 31°43'32.60"E	At least one grave	Not to be disturbed by mining operations
21	28°11'5.30"S; 31°43'31.80"E	At least one grave	Not to be disturbed by mining operations
22	28°11'6.40"S; 31°43'33.30"E	At least one grave	Not to be disturbed by mining operations
23	28°11'5.10"S; 31°43'36.90"E	At least two graves	Not to be disturbed by mining operations
24	28°11'11.40"S; 31°43'32.80"E	Graves	Not to be disturbed by mining operations
25	28°11'13.20"S; 31°43'33.30"E	Several graves overgrown with vegetation	Not to be disturbed by mining operations
26	28°11'14.30"S; 31°43'33.70"E	Several graves overgrown with vegetation	Not to be disturbed by mining operations
27	28°11'19.00"S; 31°43'39.60"E	Grave	Not to be disturbed by mining operations
28	28°11'21.40"S; 31°43'28.40"E	Graves	Not to be disturbed by mining operations
29	28°11'24.20"S; 31°43'25.40"E	Burial ground with >20 graves	Not to be disturbed by mining operations
30	28°11'28.90"S; 31°43'30.80"E	Several graves	Not to be disturbed by mining operations
31	28°11'31.30"S; 31°43'30.30"E	Grave/s	Not to be disturbed by mining operations
32	28°11'30.90"S; 31°43'32.50"E	Single grave in cattle kraal	Not to be disturbed by mining operations
33	28°11'30.50"S; 31°43'33.70"E	Grave/s within homestead yard	Not to be disturbed by mining operations
34	28°11'29.40"S; 31°43'33.70"E	Several graves	Not to be disturbed by mining operations
35	28°11'27.70"S; 31°43'32.50"E	Graves	Not to be disturbed by mining operations
36	28°11'26.60"S; 31°43'37.80"E	Graves	Not to be disturbed by mining operations

According to the South African fossil sensitivity map, the proposed Mgeni Adit falls within an area of very high fossil sensitivity as indicated by the red colour in **Figure 12** below, interspersed with some areas of insignificant or zero fossil sensitivity. The overriding sensitivity, however, is very high and the requirement, as indicated in the Legend below, is that a field assessment is required to determine the extent of the impact of the Mgeni Adit on sensitive fossil finds in the area.

It is recommended that, at a minimum, a desktop palaeontological assessment is undertaken to determine the extent of impact and whether a field assessment is required. This study must be undertaken prior to work starting on the proposed Mgeni Adit.

Paleontology or fossils are protected by section 36 (1) of the KZNHA which states that no person may destroy, damage, excavate, alter, write or draw upon, or otherwise disturb any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Amafa Council having been obtained on written application to the Council.

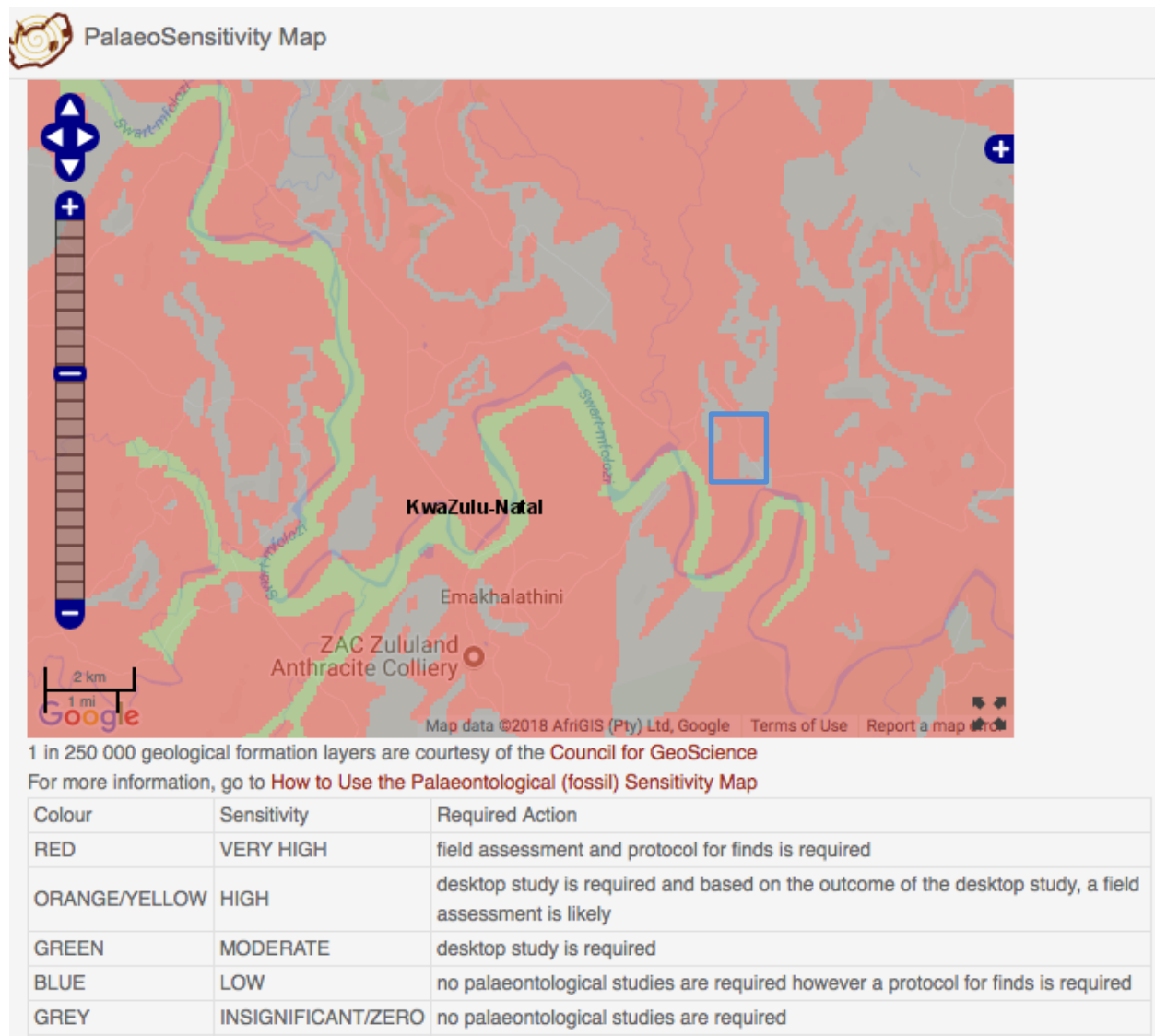


Figure 12: Fossil sensitivity map of project area indicated with blue square

8. ASSESSMENT OF IMPACTS

The potential impacts of the Mgeni Adit on heritage resources was assessed as per the methodology described in Chapter 5 of this report. The heritage resources that could be impacted by the proposed development are:

- Damage to graves and cemeteries;
- Damage or destruction of sites of significance to the community pertaining to religious/spiritual practices;
- Destruction of palaeontological/fossil sites and material.

The tables below only refer to the construction phase of the Mgeni Adit. The spreadsheet with the complete assessment (construction, operation and closure phases) is attached to this report as **Appendix 1**.

Table 3: Assessment of impacts on graves and cemeteries

Construction Phase: Mgeni Adit		
	Without Mitigation	With Mitigation
Scale	Local (2)	Local (2)
Duration	Permanent (5)	Long-term (4)
Magnitude	High (8)	High (8)
Probability	Medium (3)	Low (2)
Status	Negative	Negative
Level of Significance	45 (medium negative)	28 (low negative)
Can impacts be mitigated	Yes, if mitigation measures are implemented	
Mitigation		
<ul style="list-style-type: none"> • A buffer of 20 m is recommended around the large burial ground (No.1 on Table 2) which is situated east of the vent fan to avoid damage to the graves and to the Shembe site during the construction and operation of the Mgeni Adit • The buffer should consist of durable material such as fencing which is visible to workers throughout the construction and operation of the Mgeni Adit. It should be replaced if it is damaged in any way. • No work may take place within the buffer zone. • Residents must have access to grave sites at all times. • Construction workers must be made aware that graves could be found in the area of the Mgeni Adit and that if graves are found all work must stop in the area and a decision made what is to be done with the grave/s. Work can only proceed in the area once the grave/s have either been removed or secured. • If graves or cemeteries have to be moved, then a Phase 2 HIA will need to be undertaken during which process, the family and community will have to be engaged with to obtain their permission and to discuss where the remains are to be moved to. In addition, application will have to be made to Amafa for the necessary permits 		

Table 4: Assessment of impacts on Shembe religious site

Construction Phase: Mgeni Adit		
	Without Mitigation	With Mitigation
Scale	Local (2)	Local (2)
Duration	Permanent (5)	Permanent (5)
Magnitude	High (8)	Low (4)
Probability	Definite (5)	Low (2)
Status	Negative	Negative
Level of Significance	75 (high negative)	22 (low negative)
Can impacts be mitigated	Yes, if mitigation measures are implemented	
Mitigation		
<ul style="list-style-type: none"> • The Shembe temple is of importance because of the spiritual significance it may have to members of the village and surrounding community. 		

- Currently, the site is directly impacted by the proposed PC dam. If the dam cannot be moved, then consultation must be held with the Shembe leaders in the community to determine where the temple can be relocated to.
- The structures / dwellings associated with the site will have to be moved as well.

Table 5: Assessment of impacts on fossils

Construction Phase: Mgeni Adit		
	Without Mitigation	With Mitigation
Scale	Regional (3)	Local (2)
Duration	Permanent (5)	Permanent (5)
Magnitude	High (8)	Moderate (6)
Probability	High (4)	Moderate (3)
Status	Negative	Negative
Level of Significance	64 (high negative)	39 (medium negative)
Can impacts be mitigated	Yes, if mitigation measures are implemented	
Mitigation		
<ul style="list-style-type: none"> • A desktop palaeontological impact assessment (PIA) must be undertaken to assess the extent and significance of fossils that will be impacted by the proposed development as well as determining whether a field assessment will be required. • If the desktop PIA determines that sensitive fossil finds will be impacted, then a field assessment must be undertaken. This may entail the removal of fossils from the project area. • All recommendations of the desktop PIA and field assessment must be implemented. 		

9. DISCUSSION AND RECOMMENDATIONS

All the grave sites identified during the site inspection fall outside the proposed surface buildings and works; however, the large burial ground with well over 40 graves is situated within 100 m of the vent fan. There could also be a Shembe temple close to this burial ground which is situated even closer to the vent fan. In addition, a large Shembe temple is situated within the area designated for the PC dam.

In terms of the graves, it is strongly recommended that the graves are not moved. Graves are highly significant to people and there are many traditional, cultural and personal sensitivities concerning the removal of graves. However, if it is decided that graves are to be moved or if, during the construction of Mgeni Adit, chance finds of graves are made, then the following should be noted: in terms of section 35 (1) of the KZNHA, no grave may be damaged, altered, exhumed, removed from its original position, or otherwise disturbed without the prior written approval of the Amafa Council having been obtained on written application to the Council.

In terms of section 35 (2), the Council may only issue written approval once the Council is satisfied that –

- (a) the applicant has made a concerted effort to consult with communities and individuals who by tradition may have an interest in the grave; and
- (b) the applicant and the relevant communities or individuals have reached agreement regarding the grave.

According to section 3 of the KwaZulu-Natal Heritage Regulations of 2012 (GNR 40 of 2012), which refers to the damage, alteration, exhumation, or removal of graves, a written application has to be made to the Amafa Council which contains the following information according to subsection (2):

- (a) the names and qualifications of the applicant;
- (b) the identification of the grave or cemetery to be damaged, altered, exhumed, or removed from its original position; .
- (c) the purpose of such damage, alteration, exhumation or removal from its original position;
- (d) the location of such grave or cemetery;
- (e) the municipal area within which the location of such grave or cemetery is situated; and
- (f) particulars of bodies or interest groups consulted by the applicant.

In terms of subsection (5) (1) of regulation 3, the Council must ensure that the applicant has instituted a process of consultation with the relevant community or municipality; and in terms of sub-section (6), if the Council decides to grant the approval, notice of approval must be made in the Gazette. It should be noted that the gazetting of the notice is at the cost of the Applicant.

In terms of subsection (13), approval may only be granted -

- (a) where the work to be carried out is to be done under the supervision of a qualified archaeologist or person approved by the Council;
- (b) with due respect for any human remains and the customs and beliefs of any person or community concerned with such grave or burial ground; and
- (c) after arrangements have been made for the re-interment, if necessary, of any human remains and the re-interment or curation of any other contents of such grave or burial ground, to the satisfaction of the Council and the community involved.

The Shembe temple is important as it may be a significant spiritual site to members of the village and surrounding community. In terms of section 3 (g) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because

of — (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. It is therefore recommended that the mitigation measures included in **Table 4** above and in **Appendix 1** should be followed.

The assessment of impacts during the construction and operational phases indicates that with mitigation, the impact on graves and religious sites will be a low (negative) impact. The impact on palaeontology during construction will, post-mitigation, be a medium impact as it appears from the fossil sensitivity map, that significant fossils finds could be impacted by the construction of the Mgeni Adit. The palaeontological assessment of impacts is not conclusive without at least a desktop palaeontological assessment being undertaken to determine the presence (or not) of fossils and the way forward.

10. CONCLUSION

The proposed Mgeni Adit will have a high impact on heritage sites if mitigation measures are not implemented. All measures recommended in this report must be implemented. Due to the very high fossil sensitivity of the development area, the project may proceed only once the desktop palaeontological assessment has been undertaken and the recommendations from the desktop study implemented.

Once the above recommendations and mitigation measures are undertaken, then the construction of the Mgeni Adit may proceed from a heritage perspective.

11. ADDITIONAL MITIGATION MEASURES

- Construction and operational workers should be made aware of the types of heritage resources, especially graves, that could be found during the development and operation of the Mgeni Adit. The process in terms of chance finds as mentioned in the second bullet point below must then be followed.
- For any chance heritage finds (graves, archaeological sites, 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 (Amafa) 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 Amafa 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 Amafa must be contacted. No SAPS official may remove remains (recent or not) until the correct permit/s have been obtained.
- Depending on the outcome of the desktop palaeontological assessment, the mitigation and monitoring recommendations of the study must be implemented and adhered to.

12. REFERENCES

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