

**HERITAGE SURVEY OF THE PROPOSED PENTLANDS
QUARRY, EMPANGENI, KWAZULU-NATAL**

FOR MASA MZANTSI CEMENT (PTY) LTD

DATE: 11 SEPTEMBER 2013

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INTRODUCTION

Umlando was contracted by Masa Mzantsi Cement Pty (Ltd), via Site Plan Consulting, to undertake an HIA for a proposed quarry ~5.5km south of Empangeni Figures 1 – 4 give the locality of the proposed quarry.

The quarry occurs in an area that has been under sugar cane cultivation for several decades. There is riverine vegetation and some of the hills of granite outcrops which are currently vegetated. The soils are shallow and not favourable for long term archaeological deposits.

The land upon which mining is proposed is privately owned but does abut tribal /municipally owned land administered by Madlebe Tribal Authority. The Madlebe Tribal Authority has claimed that ancestral remains may occur in the area. It is for this reason that a site visit was undertaken with Mr Siphon Mathaba, during the HIA survey. That is to determine if settlements relating to the Madlebe TA did occur in the area, or if there was evidence of more recent occupations.

FIG. 1 GENERAL LOCATION OF THE STUDY AREA



FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA

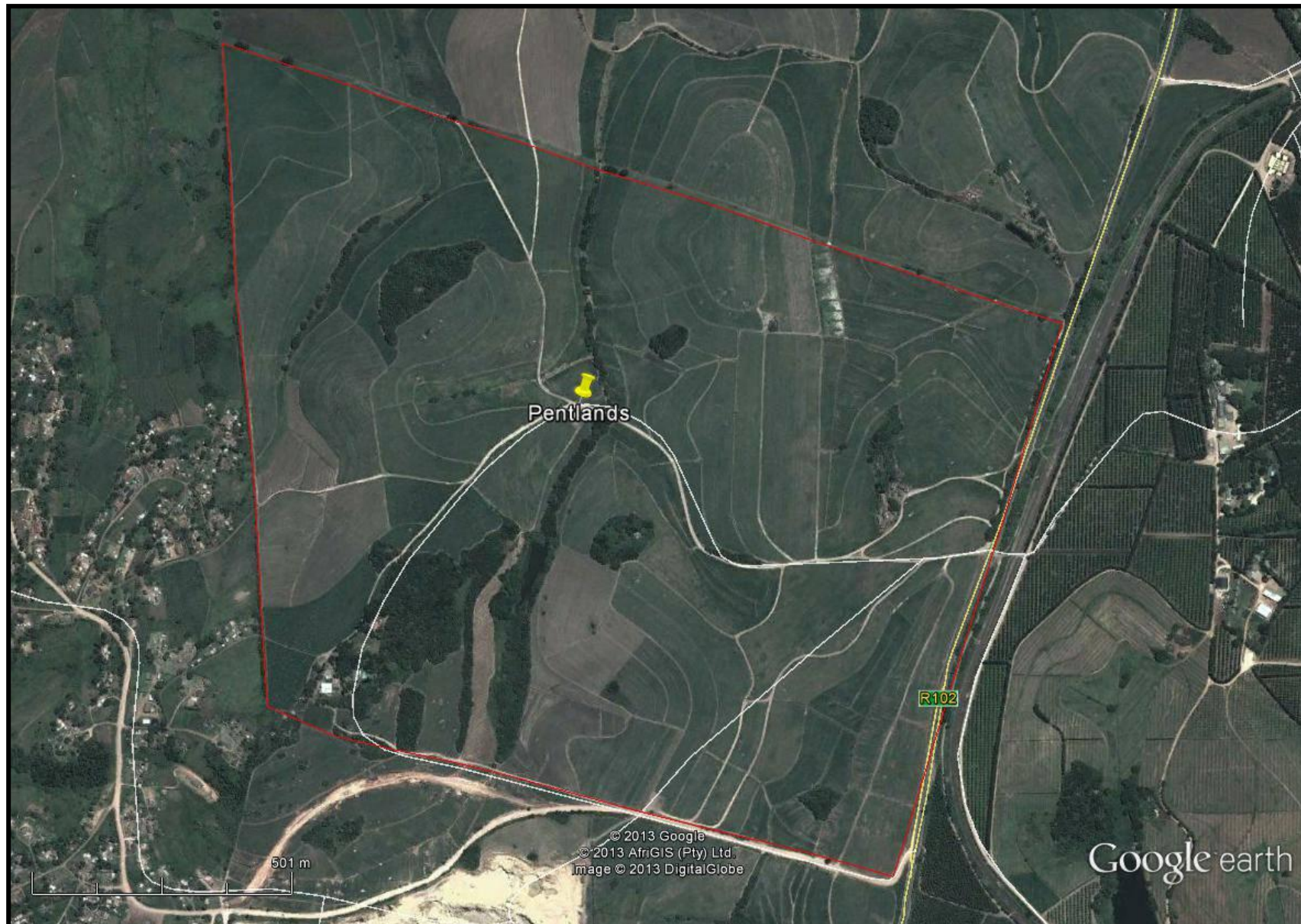


FIG. 3: TOPOGRAPHICAL MAP OF THE STUDY AREA

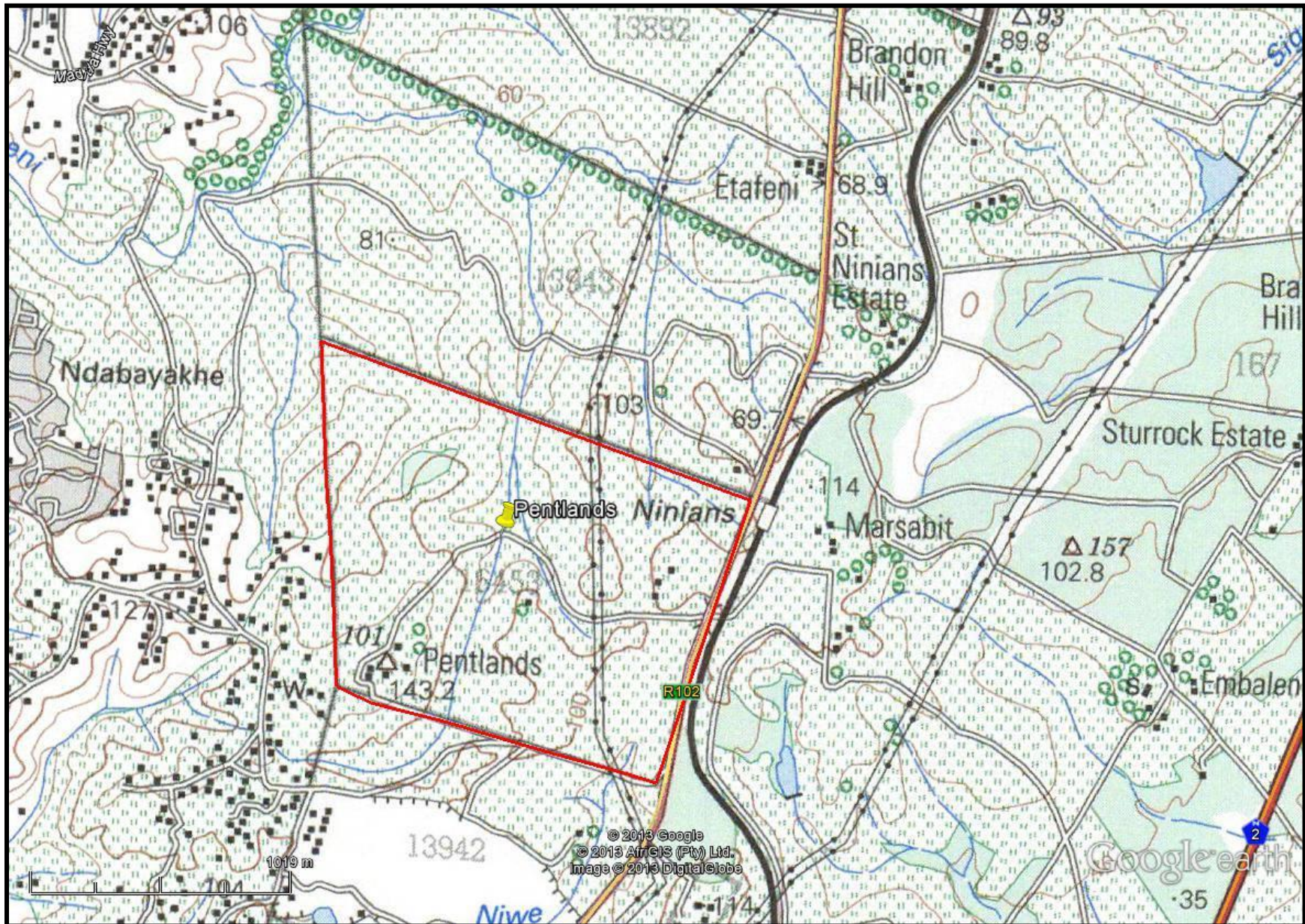
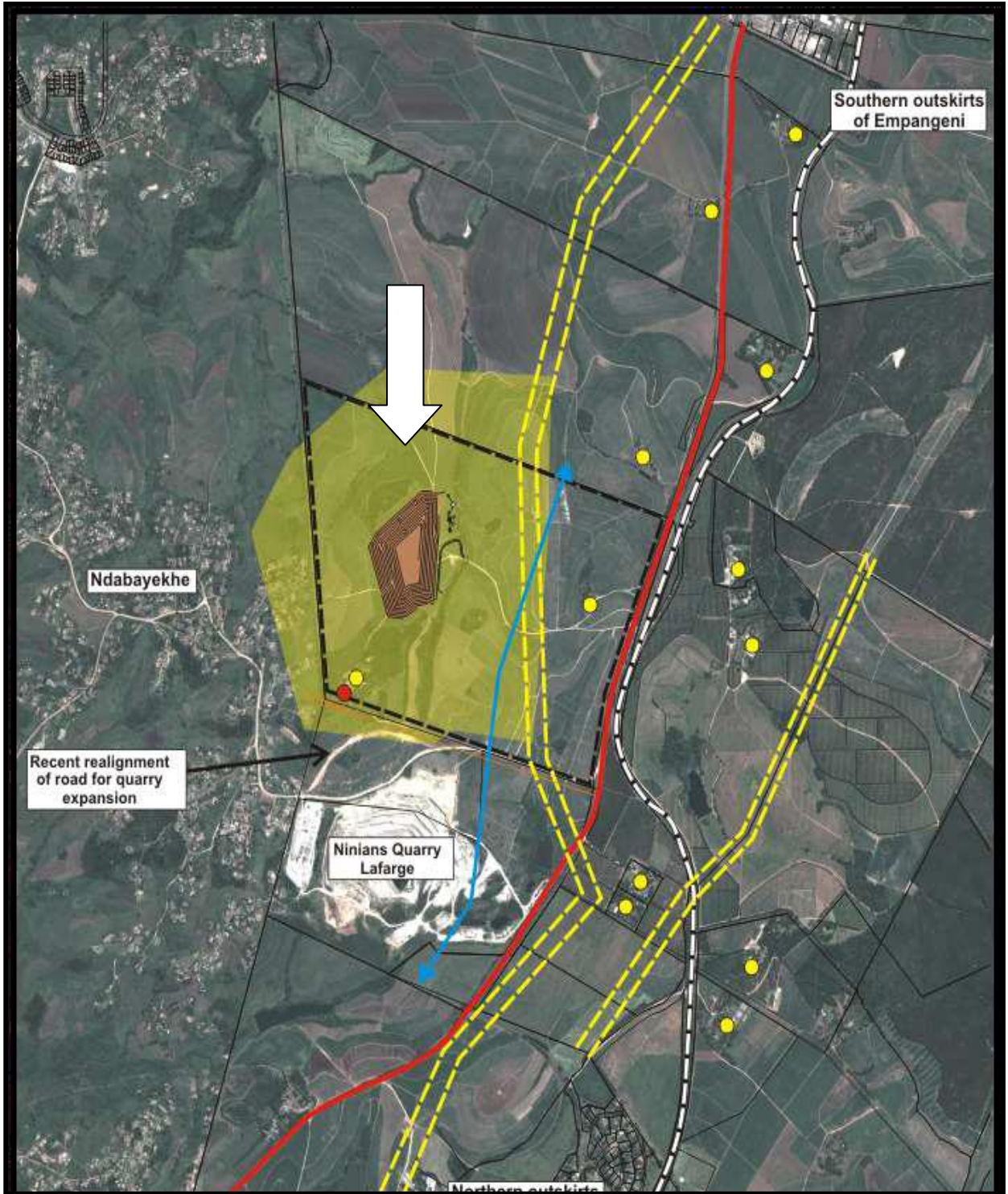


FIG. 4: LOCATION OF PROPOSED QUARRY



KWAZULU-NATAL HERITAGE ACT NO. 4 OF 2008

“General protection: Structures.—

- No structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without the prior written approval of the Council having been obtained on written application to the Council.
- Where the Council does not grant approval, the Council must consider special protection in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- The Council may, by notice in the *Gazette*, exempt—
- A defined geographical area; or
- defined categories of sites within a defined geographical area, from the provisions of subsection where the Council is satisfied that heritage resources falling in the defined geographical area or category have been identified and are adequately protected in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- A notice referred to in subsection (2) may, by notice in the *Gazette*, be amended or withdrawn by the Council.

General protection: Graves of victims of conflict.—No person may damage, alter, exhume, or remove from its original position—

- the grave of a victim of conflict;
- a cemetery made up of such graves; or
- any part of a cemetery containing such graves, without the prior written approval of the Council having been obtained on written application to the Council.
- General protection: Traditional burial places.—
- No grave—
- not otherwise protected by this Act; and
- 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 Council having been obtained on written application to the Council.

The Council may only issue written approval once the Council is satisfied that—

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

General protection: Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites.—

- 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 Council having been obtained on written application to the Council.
- Upon discovery of archaeological or palaeontological material or a meteorite by any person, all activity or operations in the general vicinity of such material or meteorite must cease forthwith and a person who made the discovery must submit a written report to the Council without delay.
- The Council may, after consultation with an owner or controlling authority, by way of written notice served on the owner or controlling authority, prohibit any activity considered by the Council to be inappropriate within 50 metres of a rock art site.
- No person may exhume, remove from its original position or otherwise disturb, damage, destroy, own or collect any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
- No person may bring any equipment which assists in the detection of metals and archaeological and palaeontological objects and material, or

- excavation equipment onto any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, or meteorite impact site, or use similar detection or excavation equipment for the recovery of meteorites, without the prior written approval of the Council having been obtained on written application to the Council.
- The ownership of any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site, on discovery, vest in the Provincial Government and the Council is regarded as the custodian on behalf of the Provincial Government.” (KZN Heritage Act of 2008)

METHOD

The method for Heritage assessment consists of several steps.

The first step forms part of the desktop assessment. Here we would consult the database that has been collated by Umlando. This databases contains archaeological site locations and basic information from several provinces (information from Umlando surveys and some colleagues), most of the national and provincial monuments and battlefields in Southern Africa (<http://www.vuvuzela.com/googleearth/monuments.html>) and cemeteries in southern Africa (information supplied by the Genealogical Society of Southern Africa). We use 1st and 2nd edition 1:50 000 topographical and 1937 aerial photographs where available, to assist in general location and dating of buildings and/or graves. The database is in Google Earth format and thus used as a quick reference when undertaking desktop studies. Where required we would consult with a local data recording centre, however these tend to be fragmented between different institutions and areas and thus difficult to access at times. We also consult with an historical architect, palaeontologist, and an historian where necessary.

The survey results will define the significance of each recorded site, as well as a management plan.

All sites are grouped according to low, medium, and high significance for the purpose of this report. Sites of low significance have no diagnostic artefacts or features. Sites of medium significance have diagnostic artefacts or features and these sites tend to be sampled. Sampling includes the collection of artefacts for future analysis. All diagnostic pottery, such as rims, lips, and decorated sherds are sampled, while bone, stone, and shell are mostly noted. Sampling usually occurs on most sites. Sites of high significance are excavated and/or extensively sampled. Those sites that are extensively sampled have high research potential, yet poor preservation of features.

Defining significance

Heritage sites vary according to significance and several different criteria relate to each type of site. However, there are several criteria that allow for a general significance rating of archaeological sites.

These criteria are:

1. State of preservation of:

- 1.1. Organic remains:
 - 1.1.1. Faunal
 - 1.1.2. Botanical
- 1.2. Rock art
- 1.3. Walling
- 1.4. Presence of a cultural deposit
- 1.5. Features:
 - 1.5.1. Ash Features
 - 1.5.2. Graves
 - 1.5.3. Middens

1.5.4. Cattle byres

1.5.5. Bedding and ash complexes

2. Spatial arrangements:

2.1. Internal housing arrangements

2.2. Intra-site settlement patterns

2.3. Inter-site settlement patterns

3. Features of the site:

3.1. Are there any unusual, unique or rare artefacts or images at the site?

3.2. Is it a type site?

3.3. Does the site have a very good example of a specific time period, feature, or artefact?

4. Research:

4.1. Providing information on current research projects

4.2. Salvaging information for potential future research projects

5. Inter- and intra-site variability

5.1. Can this particular site yield information regarding intra-site variability, i.e. spatial relationships between various features and artefacts?

5.2. Can this particular site yield information about a community's social relationships within itself, or between other communities?

6. Archaeological Experience:

6.1. The personal experience and expertise of the CRM practitioner should not be ignored. Experience can indicate sites that have potentially significant aspects, but need to be tested prior to any conclusions.

7. Educational:

7.1. Does the site have the potential to be used as an educational instrument?

7.2. Does the site have the potential to become a tourist attraction?

7.3. The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.

8. Other Heritage Significance:

- 8.1. Palaeontological sites
- 8.2. Historical buildings
- 8.3. Battlefields and general Anglo-Zulu and Anglo-Boer sites
- 8.4. Graves and/or community cemeteries
- 8.5. Living Heritage Sites
- 8.6. Cultural Landscapes, that includes old trees, hills, mountains, rivers, etc related to cultural or historical experiences.

The more a site can fulfill the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. This occurs in Phase 2. These test-pit excavations may require further excavations if the site is of significance (Phase 3). Sites may also be mapped and/or have artefacts sampled as a form of mitigation. Sampling normally occurs when the artefacts may be good examples of their type, but are not in a primary archaeological context. Mapping records the spatial relationship between features and artefacts.

RESULTS

DESKTOP STUDY

The desktop study consisted of analysing various maps for evidence of prior habitation in the study area, as well as for previous archaeological surveys. The archaeological database indicates that there are archaeological sites in the general area (fig. 5). These sites include all types of Stone Age and Iron Age sites. No sites occur in the study area. No national monuments, battlefields, or historical cemeteries are known to occur in the study area.

The 1937 aerial photographs indicate that this land was under sugar cane cultivation before 1937. The aerial photographs also show three areas of possible

human occupation (Fig. 6; Table 1). Interestingly the photograph also shows that the koppies that are currently heavily vegetated were not in 1937.

The earliest available 1:50 000 topographical dates to 1983. This map shows the houses at Pentlands, but not the farm labourer's houses in the southeastern corner (fig. 7).

TABLE 1: LOCATION OF POSSIBLE SETTLEMENTS IN 1937

NAME	LATITUDE	LONGITUDE	DESC
A1	-28.803723739	31.878872951	Settlement?
A2	-28.802817462	31.891761864	Settlement?
A3	-28.804453029	31.885621262	Settlement?

FIELD SURVEY

The field survey was undertaken with Mr Siphon Mathaba and two other delegates from the Ndabayakhe community. The community representatives joined the survey to show where graves occurred. In addition to this, the community representatives acted as interviewers and translators in communications with farm labourers.

COMMUNITY PARTICIPATION

The community participation was not a formal assessment, nor was it a social impact assessment; rather an ad hoc meeting to discuss the possibility of ancestral remains in the study area and if possible identify them. I was informed that there have been some claims of ancestral remains in the study area.

However, there was also a claim that there have been no ancestral graves in the study area for ~50 years. A worker at Pentlands informed us that the farm labourers' houses at NTAB03 (see below) were migrant labourers and they were buried in a communal cemetery at NTAB02 (discussed below).

The field trip could not confirm nor negate the presence of community ancestral remains. This will need to be assessed via a social impact assessment specifically aimed at dealing with ancestral remains.

The recorded sites are listed in Table 2, and shown in Figure 8.

TABLE 2: LOCATION OF RECORDED SITES

NTAB01	- 28.800377152	31.881579639	LIA/HP pottery
NTAB02	- 28.807250000	31.878600000	Recent graves
NTAB03	- 28.804368733	31.885514794	Recent settlement
NTAB04	- 28.803930975	31.890734069	Historical buildings

FIG. 5: LOCATION OF KNOWN ARCHAEOLOGICAL SITES

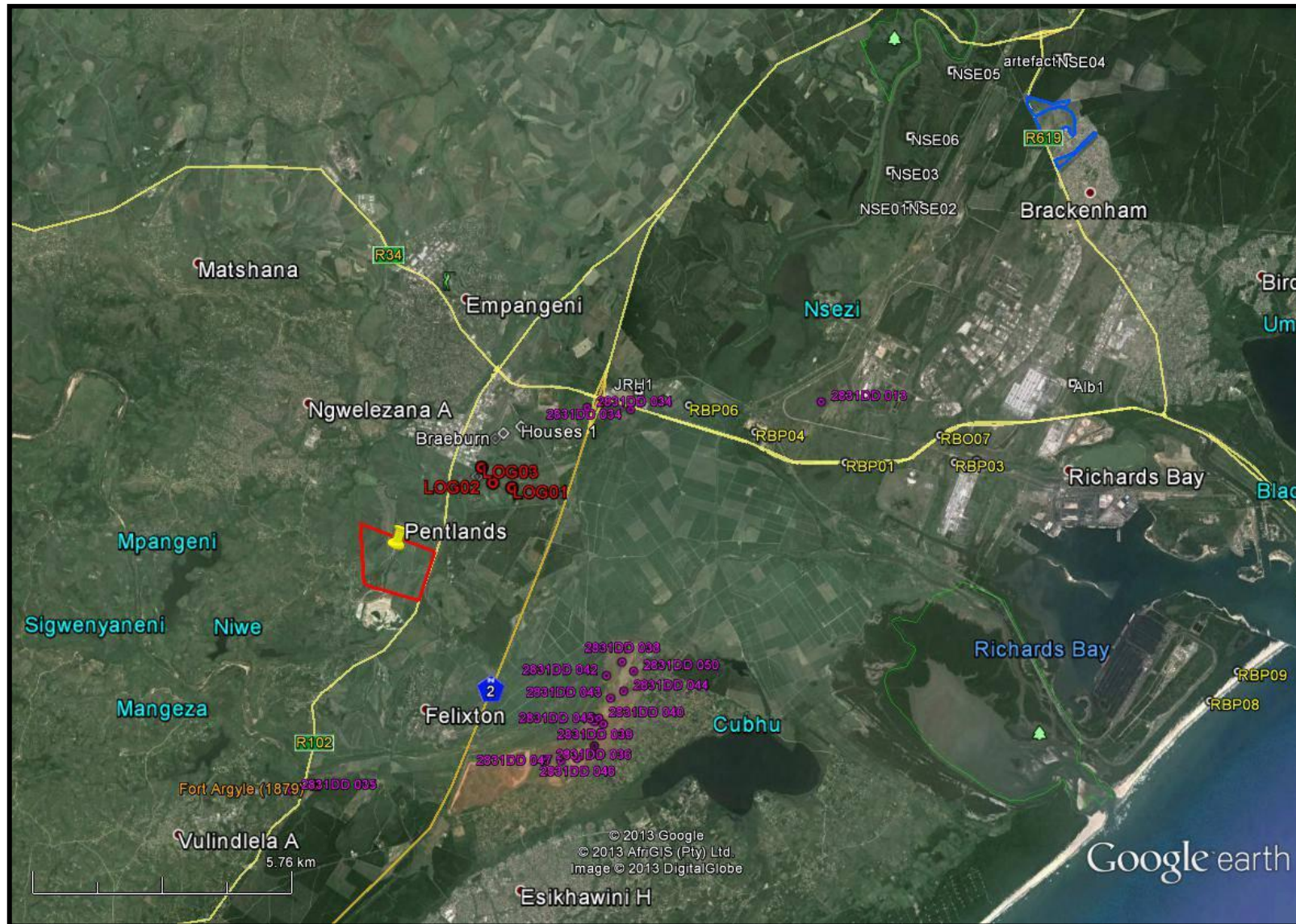


FIG. 6: STUDY AREA IN 1937



FIG. 7: STUDY AREA IN 1968

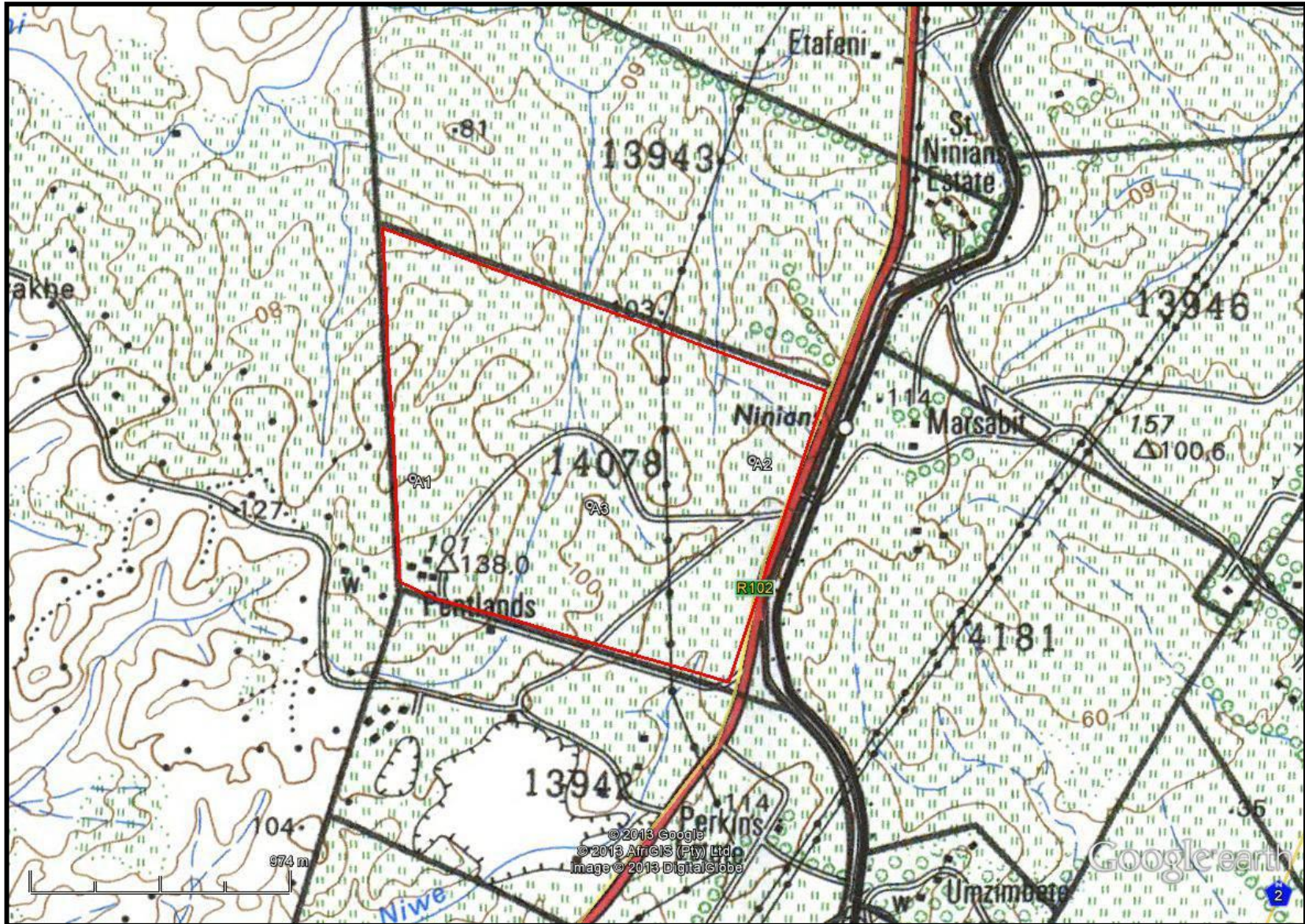


FIG 8: LOCATION OF RECORDED SITES IN THE STUDY AREA



NTAB01

NTAB01 was located on the top of a hill with granite boulders. There is dense vegetation around the boulders with a gentle slope on the southern side. The sugar cane area around the boulders had been recently cleared, and allowed for good archaeological visibility. Several pottery sherds were noted on the southern side of the koppie. The pottery is thin-walled and undecorated. This means that it can date anywhere from 1100ACE to 1936 ACE (fig. 9). One bone fragment was noted; however, it had been cut with an electric blade and is thus modern. Some quartz flakes occur on the surface; however, these are probably a result of agricultural activity on the granite rocks, than proper Stone Age flakes. The soil is a black clay-like soil and deep; thus there is no archaeological deposit.

Significance: The site is of low significance

Mitigation: No direct mitigation is required; however, the area around the boulders should be noted as a sensitive area. If this area will be quarried, then the vegetation will need to be cleared and the koppie re-inspected for potential graves.

A destruction permit for the archaeological site will be required if the hill is quarried.

FIG. 9: ARTEFACTS AT NTAB01



FIG.10: ALLEGED CEMETERY AT NTAB02



NTAB02

NTAB02 is located near the Pentlands house, and is on the border of the study area. According to an informant, this is the area where migrant workers were buried, approximately 30 years ago. The area is currently used as a vegetable garden.

Significance: If this area is a cemetery then it is of high significance

Mitigation: No further mitigation is required as the area falls outside of the study area. However, if any access roads are created near the alleged cemetery, then this area will need to be fenced off and have a 20m buffer from the access road.

NTAB03

NTAB03 is located on the northern side of a hill and amongst granite boulders. The area was densely vegetated as with other koppies (fig. 11). This koppie is related to A3 from the 1937 aerial photographs. No artefacts were observed on the hill; however, there is a cement/concrete structure that was presumably a base for a water tank. There is a mango tree (yellow arrow in fig. 11) that is higher than the other trees on the koppie. This suggests that there had a human settlement on the hill a few decades ago. According to an informant, this is the hill where migrant workers lived ~30 years ago (see NTAB02).

I could not find evidence for human occupation on this hill predating 1937

Significance: The vegetation was too dense to make a proper assessment; however, the area does appear to be of low archaeological significance

Mitigation: The site will need to be reassessed after vegetation clearance, if it will be affected by quarry activity

FIG. 11: DENSE VEGETATION AT NTAB03



NTAB04

NTAB04 is a group of farm labourers' houses on the eastern side of the study area. The houses appear to be older than 60 years in age; however while one house is shown on the 1937 aerial photograph, no houses are shown on the 1983 topographical map. It is unlikely that the quarry will affect the houses.

Significance: Buildings need professional assessment

Mitigation: If the houses are affected in any manner by the quarry development, then they will need to be assessed by a qualified architect historian.

FIG. 12: BUILDINGS AT NTAB04



PALAEONTOLOGY

“Due to the age, volcanic and metamorphic characteristics of the rocks of the Natal Structural and Metamorphic Province, no fossils will occur. There are no recorded fossils from the red sands of the Berea Formation and it is unlikely that any fossils will be encountered” (PIA desktop assessment – see Appendix B).

MANAGEMENT PLAN

If the local community claims that, there are ancestral remains in the study area, and if these remains will be affected, then a social impact assessment will need to be undertaken. Currently the community has not confirmed the presence/absence of ancestral remains.

Any built structure that will be affected by the quarry will need to be assessed by an architect historian, especially if they are over 60 years in age. Permits will need to be issued for their (partial) destruction.

A permit will be required from Amafa KZN for the destruction of the site NTAMB01, if the quarry will affect the site.

All hills with granite outcrops need to be re-assessed if they will be affected by the quarry and related infrastructure. AN assessment can only be undertaken after vegetation clearance has occurred. This will be to note any human graves and/or built structures within these areas of dense vegetation.

CONCLUSION

A heritage survey was undertaken for the proposed Pentlands quarry. The Ndabayakhe community may have ancestral remains in the study area, although this needs to be confirmed by them. Graves were noted from an informant; however, these appear to be from migrant labourers and are outside of the study area.

One archaeological site was noted during the survey. It is of low significance and requires no further mitigation.

APPENDIX A
PALAEONTOLOGICAL IMPACT ASSESSMENT

**DESKTOP PALAEOLOGICAL
ASSESSMENT OF
THE PENTLANDS STUDY AREA,
KWA-ZULU NATAL
FOR
Umlando**

DATE: 14 September 2013

By

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EXECUTIVE SUMMARY

Gideon Groenewald was appointed to undertake a desktop survey, assessing the potential palaeontological sensitivity of the Pentlands Study area. The study area is situated to the south of Empangeni, Kwa-Zulu Natal

This Palaeontological Assessment forms part of the Heritage Impact Assessment (HIA) and complies with the requirements of the South African National Heritage Resource Act No 25 of 1999. In accordance with Section 38 (Heritage Resources Management), a HIA is required to assess any potential impacts to palaeontological heritage within the development footprint.

The study area is mainly underlain by Namibian aged metamorphic and igneous rocks of the Natal Structural and Metamorphic Province, with a small section in the south-west corner underlain by Quaternary aged sand deposits of the Berea Formation.

Due to the age and metamorphic/igneous character of the rocks of the Natal Structural and Metamorphic Province as well as the absence of recorded fossils from the Berea Formation, the study area is allocated a low Palaeontological Sensitivity. It is unlikely that any fossils will be encountered within the study area and no further palaeontological mitigation is required.

INTRODUCTION

Gideon Groenewald was appointed to undertake a desktop survey, assessing the potential palaeontological sensitivity of the Pentlands Study area. The study area is situated to the south of Empangeni, Kwa-Zulu Natal (Figure 1).

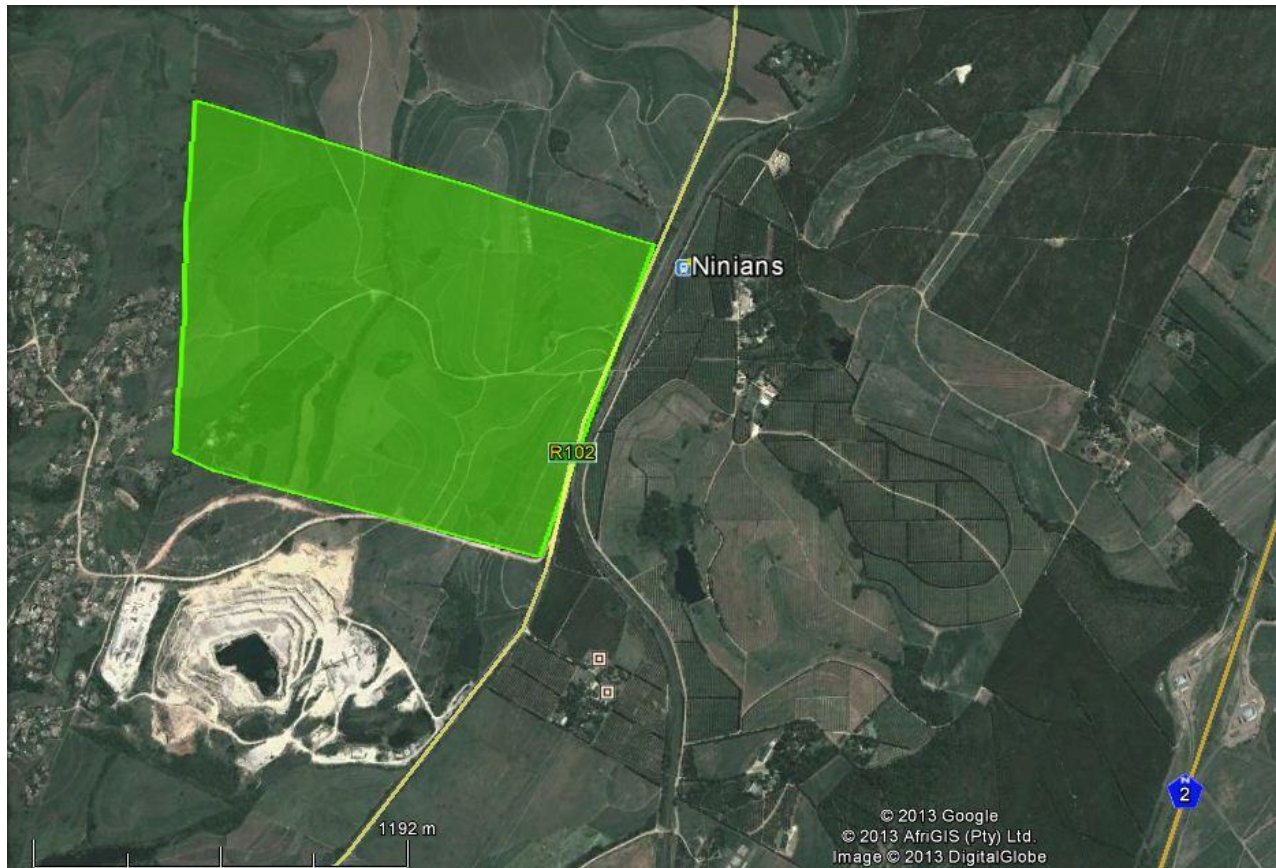


Figure 1 Location of the study area

SOUTH AFRICAN NATIONAL HERITAGE RESOURCE ACT NO 25/1999

This Palaeontological Assessment forms part of the Heritage Impact Assessment (HIA) and complies with the requirements of the South African National Heritage Resource Act No 25 of 1999. In accordance with Section 38 (Heritage Resources Management), a HIA is required to assess any potential impacts to palaeontological heritage within the development footprint.

Categories of heritage resources recognised as part of the National Estate in Section 3 of the Heritage Resources Act, and which therefore fall under its protection, include:

- geological sites of scientific or cultural importance;
- objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
- objects with the potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage.
-

METHODOLOGY

Following the "SAHRA APM Guidelines: Minimum Standards for the Archaeological & Palaeontological Components of Impact Assessment Reports" the aims of the palaeontological impact assessment are:

- to identify exposed and subsurface rock formations that are considered to be palaeontologically significant;
- to assess the level of palaeontological significance of these formations;
- to comment on the impact of the development on these exposed and/or potential fossil resources and
- to make recommendations as to how the developer should conserve or mitigate damage to these resources.

In preparing a palaeontological desktop study the potential fossiliferous rock units (groups, formations etc) represented within the study area are determined from geological maps and Google Earth imagery. The known fossil heritage within each rock unit is inventoried from the published scientific literature, previous palaeontological impact studies in the same region and the author's field experience.

The likely impact of the proposed development on local fossil heritage is determined on the basis of the palaeontological sensitivity of the rock units concerned and the nature and scale of the development itself, most notably the extent of fresh bedrock excavation envisaged. The different sensitivity classes used are explained in Table 1 below.

Table 1 Palaeontological sensitivity analysis outcome classification

Sensitivity	Description
Low Sensitivity	Areas where there is likely to be a negligible impact on the fossil heritage. This category is reserved largely for areas underlain by igneous rocks. However, development in fossil bearing strata with shallow excavations or with deep soils or weathered bedrock can also form part of this category.
Moderate Sensitivity	Areas where fossil bearing rock units are present but fossil finds are localised or within thin or scattered sub-units. Pending the nature and scale of the proposed development the chances of finding fossils are moderate. A field-based assessment by a professional palaeontologist is usually warranted.
High Sensitivity	Areas where fossil bearing rock units are present with a very high possibility of finding fossils of a specific assemblage zone. Fossils will most probably be present in all outcrops and the chances of finding fossils during a field-based assessment by a professional palaeontologist are very high. Palaeontological mitigation measures need to be incorporated into the Environmental Management Plan

When rock units of moderate to high palaeontological sensitivity are present within the development footprint, a field-based assessment by a professional palaeontologist is usually warranted.

The key assumption for this desktop study is that the existing geological maps and datasets used to assess site sensitivity are correct and reliable. However, the geological maps used were not intended for fine scale planning work and are largely based on aerial photographs alone, without ground-truthing.

These factors may have a major influence on the assessment of the fossil heritage significance of a given development and, without supporting field assessments, may lead to either:

- an underestimation of the palaeontological significance of a given study area due to ignorance of significant recorded or unrecorded fossils preserved there, or
- an overestimation of the palaeontological sensitivity of a study area, for example when originally rich fossil assemblages inferred from geological maps have in fact been destroyed by weathering, or are buried beneath a thick mantle of unfossiliferous “drift” (soil, alluvium etc).

GEOLOGY

The study area is mainly underlain by Namibian Age intrusive rocks known as Ngoye Gneiss (Nng) of the Natal Structural and Metamorphic Province. This unit typically consists of magnetite micro-granite gneiss, riebeckite-bearing granite gneiss, muscovite-biotite granite gneiss, biotite-hornblende granite gneiss, quartz-monzonite gneiss and biotite-granite gneiss. The north-eastern corner of the study area is underlain by Namibian Age amphibolite of the Endlovini Formation (Ne), Tugela Group, Natal Structural and Metamorphic Province. A small section in the south-western corner of the study area is underlain by brownish-red dune cordon sand of the Quaternary Berea Formation (Qbe) (Figure 2) (Council for Geoscience, 1988).

PALAEONTOLOGY

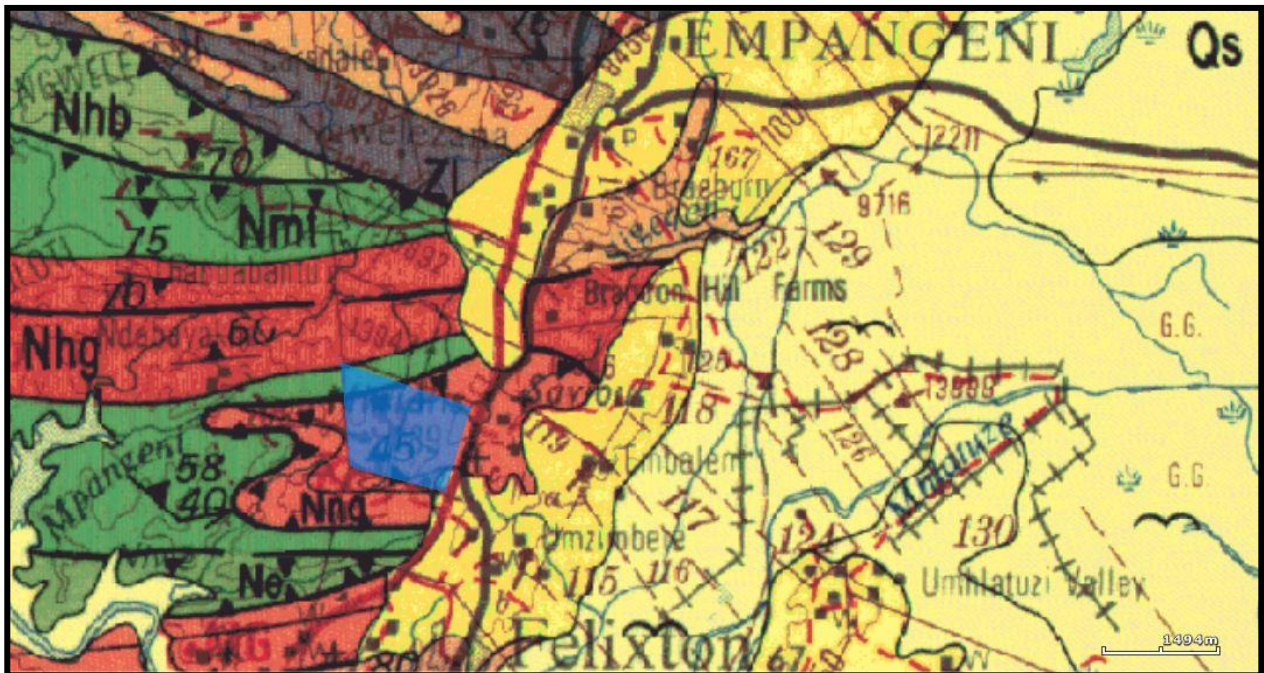
Due to the age, volcanic and metamorphic characteristics of the rocks of the Natal Structural and Metamorphic Province, no fossils will occur. There are no recorded fossils from the red sands of the Berea Formation and it is unlikely that any fossils will be encountered.

DISCUSSION

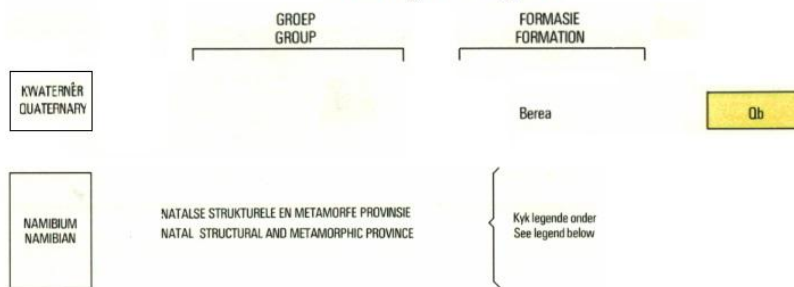
The predicted palaeontological impact of the development is based on the initial mapping assessment and literature reviews. The palaeontological significance of the geological units found within the Pentlands study area is summarised in Table 2 below.

Table 2 Palaeontological significance of geological units on site

Geological Unit	Rock Type and Age	Fossil Heritage	Vertebrate Biozone	Palaeontological Sensitivity
Berea Formation	Brownish-red clayey sand QUATERNARY	None recorded	None	Low sensitivity
Natal Structural and Metamorphic Province	Various forms of metamorphic and intrusive rocks comprised mainly of granite, gneiss, and amphibolite NAMIBIAN	None	None	Low sensitivity



Geological Legend



NATAL STRUCTURAL AND METAMORPHIC PROVINCE
(Structural sequence, in ascending order from left to right)

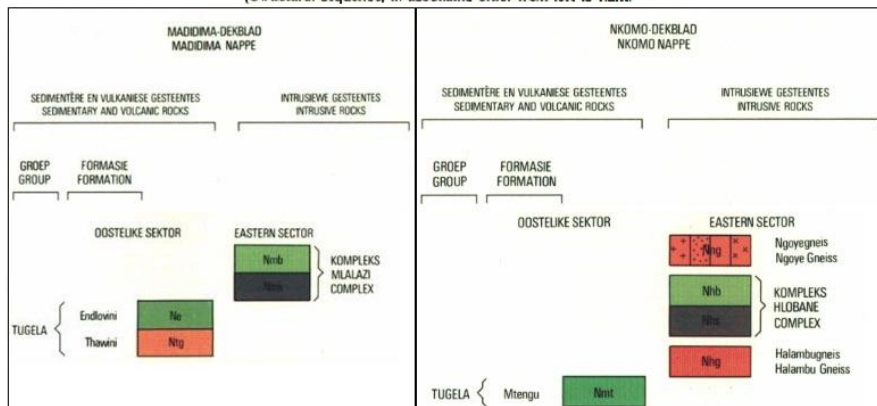


Figure 2 Geology of the Pentlands study area (2830 Dundee 1:250 000 Geological map)

MANAGEMENT PLAN

The likely impact of the proposed development on local fossil heritage is determined on the basis of the palaeontological sensitivity of the rock units concerned and the nature and scale of the development itself, most notably the extent of fresh bedrock excavation envisaged. The different sensitivity classes used are explained in Table 1 above.

The palaeontological sensitivity of the development is related to the specific geology that underlies the development footprints. Due to the age, and volcanic/metamorphic character of the rocks in the study area, no fossils will be found. There are also no recorded fossils from the Berea Formation and the

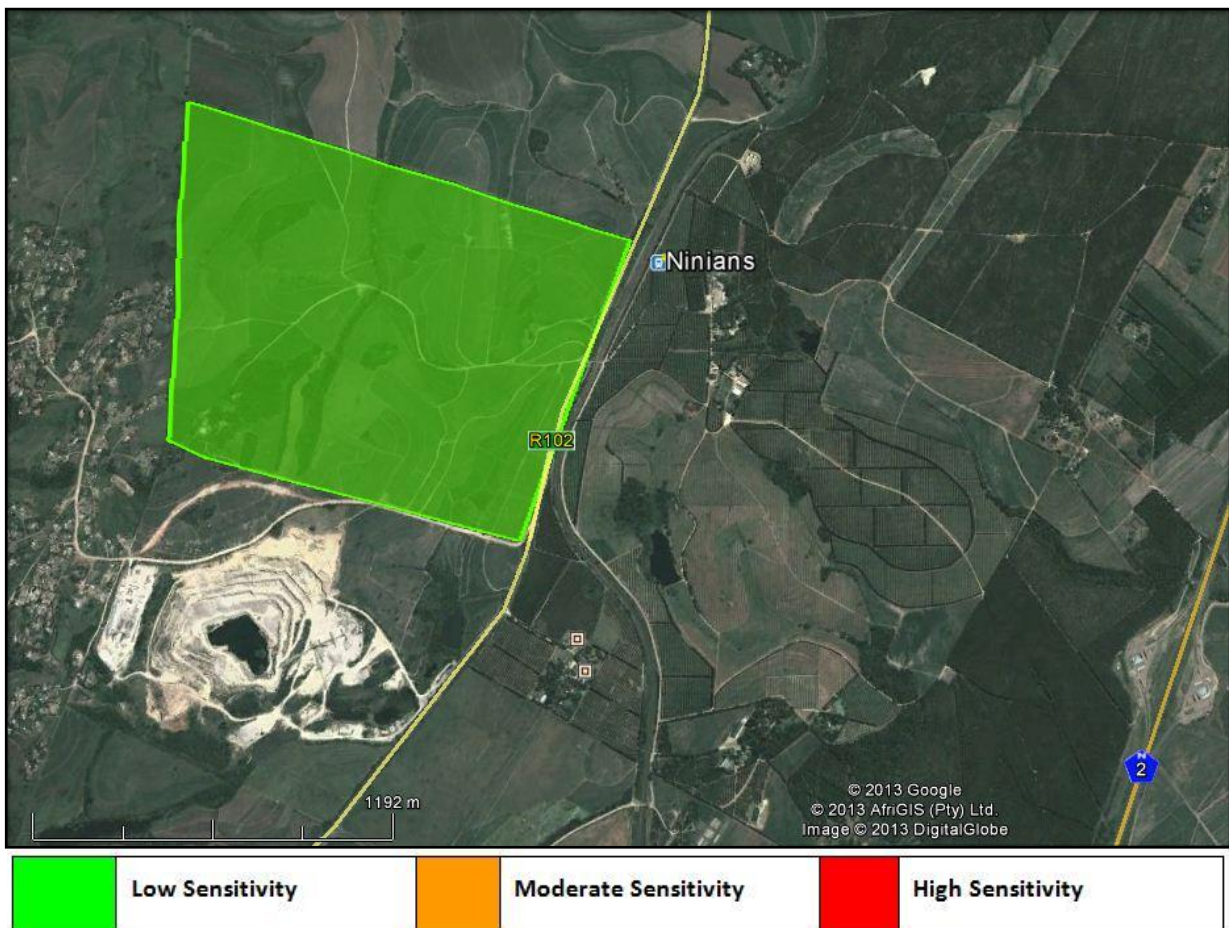


Figure 3 Palaeontological sensitivity of the study area

chances of fossils being encountered are low. The study area is allocated a low palaeontological sensitivity because of this.

CONCLUSION

The study area is mainly underlain by Namibian aged metamorphic and igneous rocks of the Natal Structural and Metamorphic Province, with a small section in the south-west corner underlain by Quaternary aged sand deposits of the Berea Formation.

Due to the age and metamorphic/igneous character of the rocks of the Natal Structural and Metamorphic Province as well as the absence of recorded fossils from the Berea Formation, the study area is allocated a low Palaeontological Sensitivity. It is unlikely that any fossils will be encountered within the study area and no further palaeontological mitigation is required.

REFERENCES

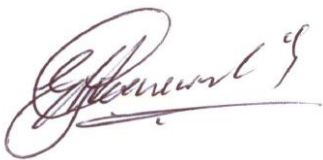
Council for Geoscience. 1988. 2830 Dundee 1:250 000 Geological map. Council for Geoscience, Pretoria

QUALIFICATIONS AND EXPERIENCE OF THE AUTHOR

Dr Gideon Groenewald has a PhD in Geology from the University of Port Elizabeth (Nelson Mandela Metropolitan University) (1996) and the National Diploma in Nature Conservation from Technicon RSA (the University of South Africa) (1989). He specialises in research on South African Permian and Triassic sedimentology and macrofossils with an interest in biostratigraphy, and palaeo-ecological aspects. He has extensive experience in the locating of fossil material in the Karoo Supergroup and has more than 20 years of experience in locating, collecting and curating fossils, including exploration field trips in search of new localities in the southern, western, eastern and north-eastern parts of the country. His publication record includes multiple articles in internationally recognized journals. Dr Groenewald is accredited by the Palaeontological Society of Southern Africa (society member for 25 years).

DECLARATION OF INDEPENDENCE

I, Gideon Groenewald, declare that I am an independent specialist consultant and have no financial, personal or other interest in the proposed development, nor the developers or any of their subsidiaries, apart from fair remuneration for work performed in the delivery of palaeontological heritage assessment services. There are no circumstances that compromise the objectivity of my performing such work.



Dr Gideon Groenewald
Geologist

**APPENDIX B
SITE RECORD FORMS**

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

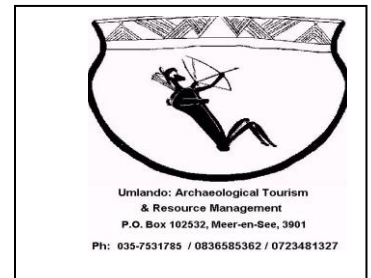
SITE CATEGORY: (X where applicable)

Stone Age: LSA?

Early Iron Age:

Late Iron Age: x

Historical Period: x



Recorder's Site No.: NTAB01

Official Name: 16453

Local Name: Pentlands

Map Sheet: 2831DD Felixton

GPS reading: S28 48 01.4 E31 52 53.7

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

In Empangeni, at the Grantham Highway/ R102 intersection, get onto the R102 and drive south for 2.5km. Turn right onto an unpaved road. NTAB01 is located 1.4km from here, on the top of a hill with granite boulders.

SITE DESCRIPTION:

Type of Site: LIA/ HP Pottery, and LSA

Merits conservation: No direct mitigation is required; however, the area around the boulders should be noted as a sensitive area. If this area will be quarried, then the vegetation will need to be cleared and the koppie re-inspected for potential graves. The site is of low significance.

Threats: Yes

What threats: THE PROPOSED PENTLANDS QUARRY, EMPANGENI

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings:

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: 10/09/2013

Owner: D Bell

Description of site and artefactual content.

There is dense vegetation around the boulders with a gentle slope on the southern side. The sugar cane area around the boulders had been recently cleared, and allowed for good archaeological visibility. Several pottery sherds were noted on the southern side of the koppie. The pottery is thin-walled and undecorated. This means that it can date anywhere from 1100ACE to 1936 ACE. One bone fragment was noted; however, it had been cut with an electric blade and is thus modern. Some quartz flakes occur on the surface; however, these are probably a result of agricultural activity on the granite rocks, than proper Stone Age flakes. The soil is a black clay-like soil and deep; thus there is no archaeological deposit.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

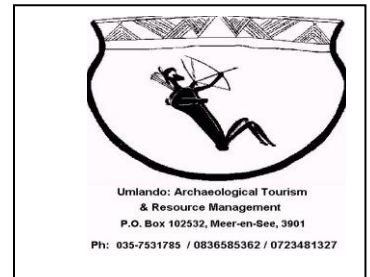
SITE CATEGORY: (X where applicable)

Stone Age:

Early Iron Age:

Late Iron Age

Historical Period: x



Recorder's Site No.: NTAB02

Official Name: 16453

Local Name: Pentlands

Map Sheet: 2831DD Felixton

GPS reading: S28 48 26.1 E31 52 43.0

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

In Empangeni, at the Grantham Highway/ R102 intersection, get onto the R102 and drive south for 3.2km before turning right onto the P569. After 647m the road splits, keep to the right. NTAB02 is located 750m from here, near the Pentlands house, and is on the border of the study area.

SITE DESCRIPTION:

Type of Site: Recent graves

Merits conservation: If this area is a cemetery then it is of high significance. No further mitigation is required as the area falls outside of the study area. However, if any access roads are created near the alleged cemetery, then this area will need to be fenced off and have a 20m buffer from the access road.

Threats: Yes

What threats: **THE PROPOSED PENTLANDS QUARRY, EMPANGENI**

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings:

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

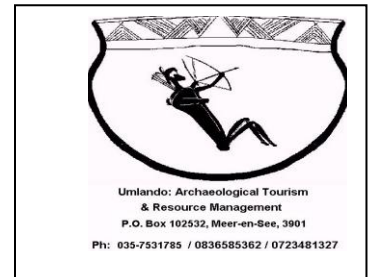
Date: 10/09/2013

Owner: D Bell

Description of site and artefactual content.

According to an informant, this is the area where migrant workers were buried, approximately 30 years ago. The area is currently used as a vegetable garden.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM



SITE CATEGORY: (X where applicable)

Stone Age:
Early Iron Age:
Late Iron Age
Historical Period: x

Recorder's Site No.: NTAB03
Official Name: 16453
Local Name: Pentlands
Map Sheet: 2831DD Felixton
GPS reading: S28 48 15.7 E31 53 07.9

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

In Empangeni, at the Grantham Highway/ R102 intersection, get onto the R102 and drive south for 2.5km. Turn right onto an unpaved road. NTAB03 is located 771m from here, on the northern side of a hill and amongst granite boulders. The area was densely vegetated as with other koppies. This koppie is related to A3 from the 1937 aerial photographs.

SITE DESCRIPTION:

Type of Site: Recent settlement

Merits conservation: The vegetation was too dense to make a proper assessment; however, the area does appear to be of low archaeological significance. The site will need to be reassessed after vegetation clearance, if it will be affected by quarry activity

Threats: Yes

What threats: **THE PROPOSED PENTLANDS QUARRY, EMPANGENI**

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings:

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: 10/09/2013

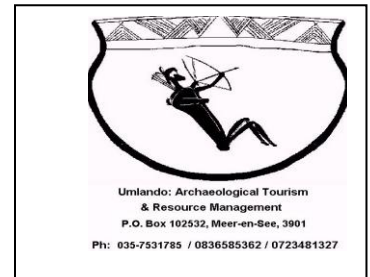
Owner: D Bell

Description of site and artefactual content.

No artefacts were observed on the hill; however, there is a cement/concrete structure that was presumably a base for a water tank. There is a mango tree that is higher than the other trees on the koppie. This suggests that there had a human settlement on the hill a few decades ago. According to an informant, this is the hill where migrant workers lived ~30 years ago (see NTAB02).

I could not find evidence for human occupation on this hill predating 1937

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM



SITE CATEGORY: (X where applicable)

Stone Age:

Early Iron Age:

Late Iron Age

Historical Period: x

Recorder's Site No.: NTAB04

Official Name: 16453

Local Name: Pentlands

Map Sheet: 2831DD Felixton

GPS reading: S28 48 14.2 E31 53 26.6

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

In Empangeni, at the Grantham Highway/ R102 intersection, get onto the R102 and drive south for 2.5km. Turn right onto an unpaved road. NTAB04 is located 302m from here, on the eastern side of the study area.

SITE DESCRIPTION:

Type of Site: Historical Buildings

Merits conservation: The buildings need professional assessment. If the houses are affected in any manner by the quarry development, then they will need to be assessed by a qualified architect historian.

Threats: Yes

What threats: **THE PROPOSED PENTLANDS QUARRY, EMPANGENI**

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings:

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: 10/09/2013

Owner: D Bell

Description of site and artefactual content.

NTAB04 is a group of farm labourers' houses on the eastern side of the study area. The houses appear to be older than 60 years in age; however while one house is shown on the 1937 aerial photograph, no houses are shown on the 1983 topographical map. It is unlikely that the quarry will affect the houses.