

**HERITAGE SURVEY OF THE TRUSTFEED BULK
WATER SUPPLY**

FOR AFZELIA ENVIRONMENTAL

DATE:

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Abbreviations

HP	Historical Period
IIA	Indeterminate Iron Age
LIA	Late Iron Age
EIA	Early Iron Age
ISA	Indeterminate Stone Age
ESA	Early Stone Age
MSA	Middle Stone Age
LSA	Late Stone Age
HIA	Heritage Impact Assessment
PIA	Palaeontological Impact Assessment

INTRODUCTION

Umgungundlovu District Municipality, have commenced with an application in terms of R 543 of the National Environmental Management Act (107 of 1998) and section 21 of the National Water Act (36 of 1998) for the establishment of formal sanitation infrastructure to service a proposed 3000 low income housing units on the Remainder of Portions of the Farm Camel Hoek No. 1320 and the existing settlement of Trustfeed. The area in question is situated approximately 7 km North West of Wartburg. The affected area falls within the Sterkspruit River catchment, a tributary of the Mgeni River,. The appointed environmental assessment practitioners are Siyazama Consulting.

The proposed infrastructure includes the following:

- A Waste Water Treatment Works (WWTW) with a capacity of 2 MI/d. The plant will utilise the activated sludge treatment process.
- A main sewer pipe to serve Camel Hoek (4.8 km) and Trustfeed (6.6 km). Pipe diameter will vary between 160 mm and 250 mm
- Pump stations may be required at strategic points.

Umlando was appointed by Afzelia environmental consultants to undertake the heritage survey of the Trsustfeeds WWTW and pipeline

Figures 1 – 4 show the location of the project.

FIG. 1 GENERAL LOCATION OF THE STUDY AREA

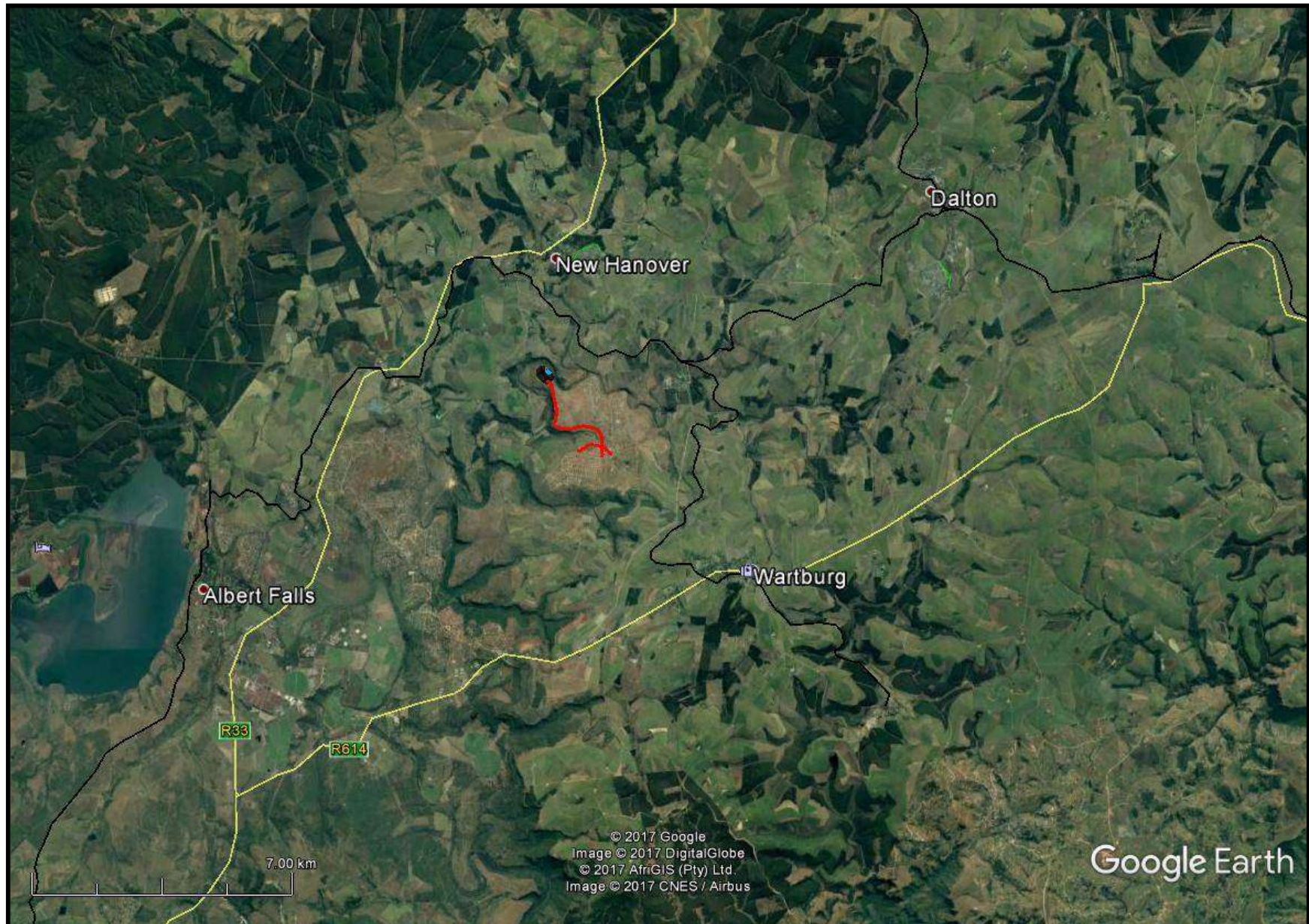


FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA



FIG. 3: TOPOGRAPHICAL OVERVIEW OF THE STUDY AREA

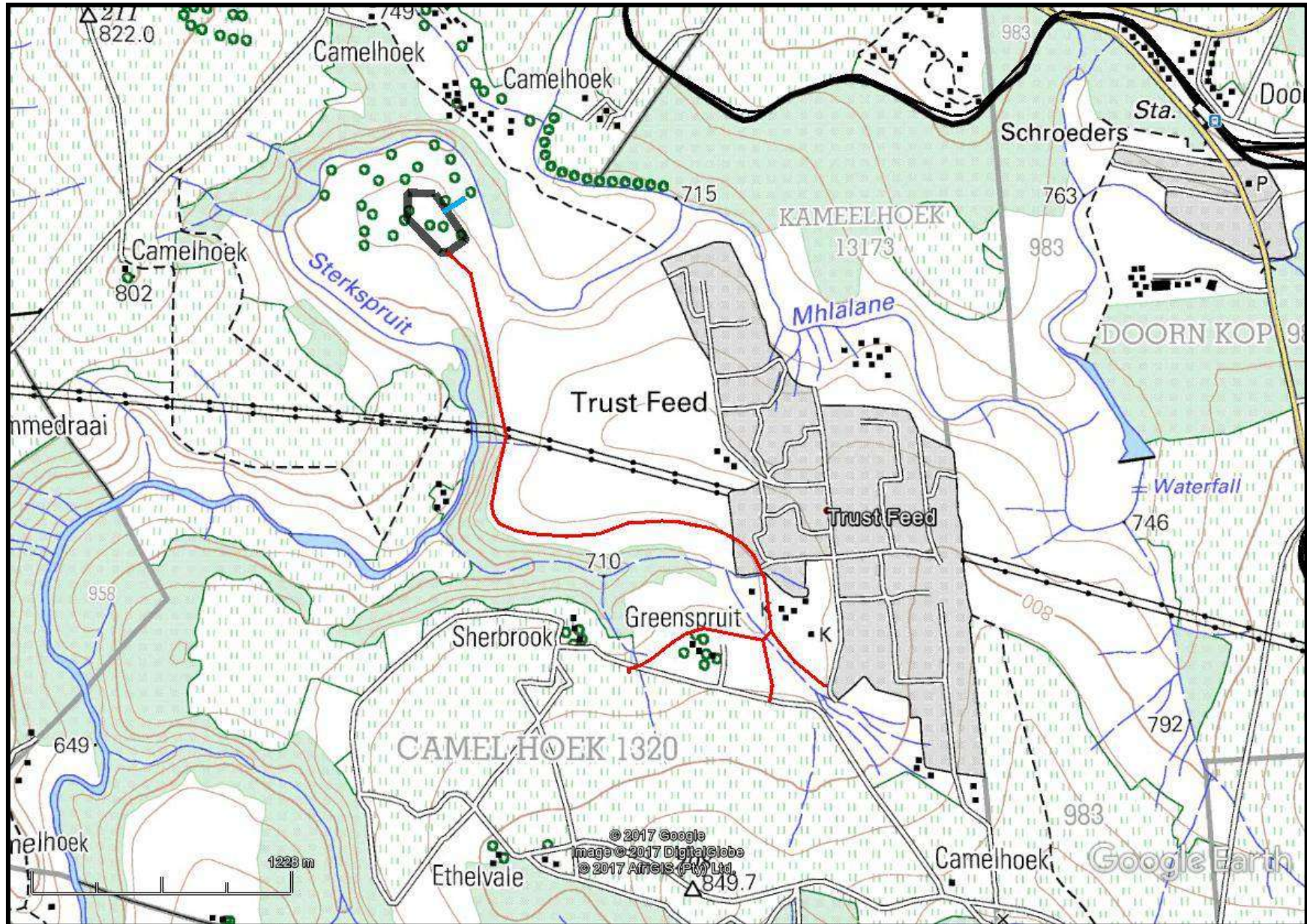


FIG. 4: SCENIC VIEWS OF THE PIPELINE ROUTE



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. These 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.

The above significance ratings allow one to grade the site according to SAHRA's grading scale. This is summarised in Table 1.

TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES

SITE SIGNIFICANCE	FIELD RATING	GRADE	RECOMMENDED MITIGATION
High Significance	National Significance	Grade 1	Site conservation / Site development
High Significance	Provincial Significance	Grade 2	Site conservation / Site development
High Significance	Local Significance	Grade 3A / 3B	
High / Medium Significance	Generally Protected A		Site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B		Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C		On-site sampling monitoring or no archaeological mitigation required prior to or during development / destruction

VEGETATION

The area is currently used for grazing of goats and cattle, collection of firewood and subsistence agriculture in areas that are less rocky. The study site falls within Quaternary catchment U20F. The project area falls within two vegetation types, namely Ngongoni Veld and Kwazulu-Natal Hinterland Thornveld. The Kwazulu-Natal Hinterland Thornveld was associated with the Sterkspruit River valley, while the Ngongoni Veld occurred on the elevated sandstone plateau around Trustfeed.

The Ngongoni Veld consisted of a mixture of pure *junctiformis* grassland and a more diverse mosaic of grassland and bush clumps. The latter was more common west of Trustfeed in the vicinity of the proposed package plant site. Species noted on site included *Combretum molle*, *Searsia pentheri*, *Acacia sieberiana*, *Aloe arborescens*, *Hypoxus argentea* and a variety of grasses and sedges.

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 LIA and HP sites. No known sites occur in the study area. Active Heritage (2016) undertook the original survey and they noted some features in the general area.

No national monuments, battlefields, or historical cemeteries are known to occur in the study area.

The 1937 aerial photographs indicate much of the land has remained grasslands until the present, with some of the area being cultivated (fig. 6). This

was part of the farm Camel Hoek 1320. The aerial photographs do not clearly show any houses, although the stone walled cattle byre is visible in retrospect. The 1968 topographical map indicates that the area is similar to 1937 (fig. 7).

PALAEONTOLOGICAL IMPACT ASSESSMENT

The SAHRIS palaeontological sensitivity map indicates that the area is of low significance. No further mitigation is required.

FIG. 9: PALAEONTOLOGICAL SENSITIVITY MAP



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

FIG. 5: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA

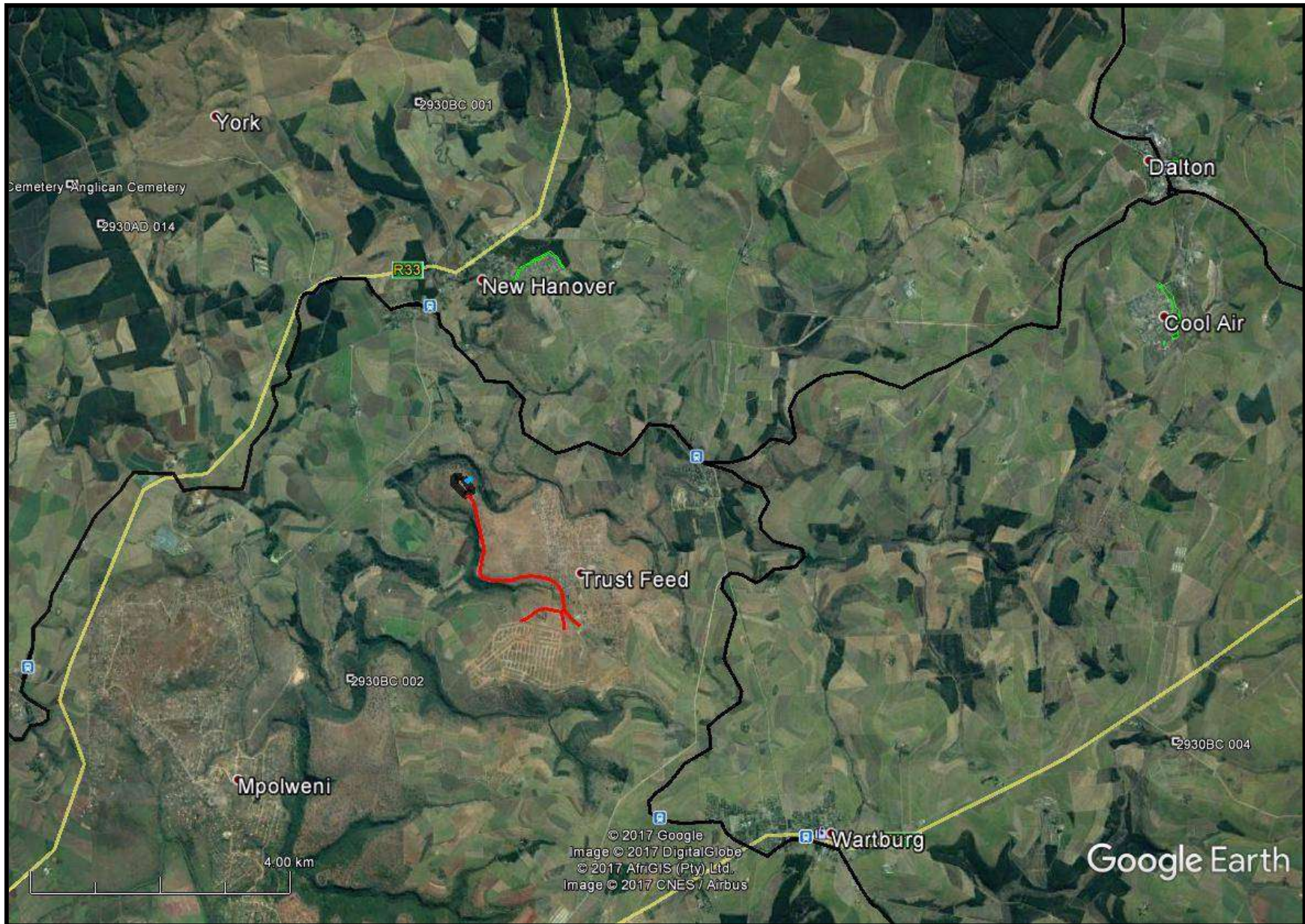


FIG. 7: STUDY AREA IN 1937



PALAEONTOLOGICAL IMPACT ASSESSMENT

The SAHRIS palaeontological sensitivity map indicates that the area is of low significance. No further mitigation is required.

FIG. 9: PALAEONTOLOGICAL SENSITIVITY MAP



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

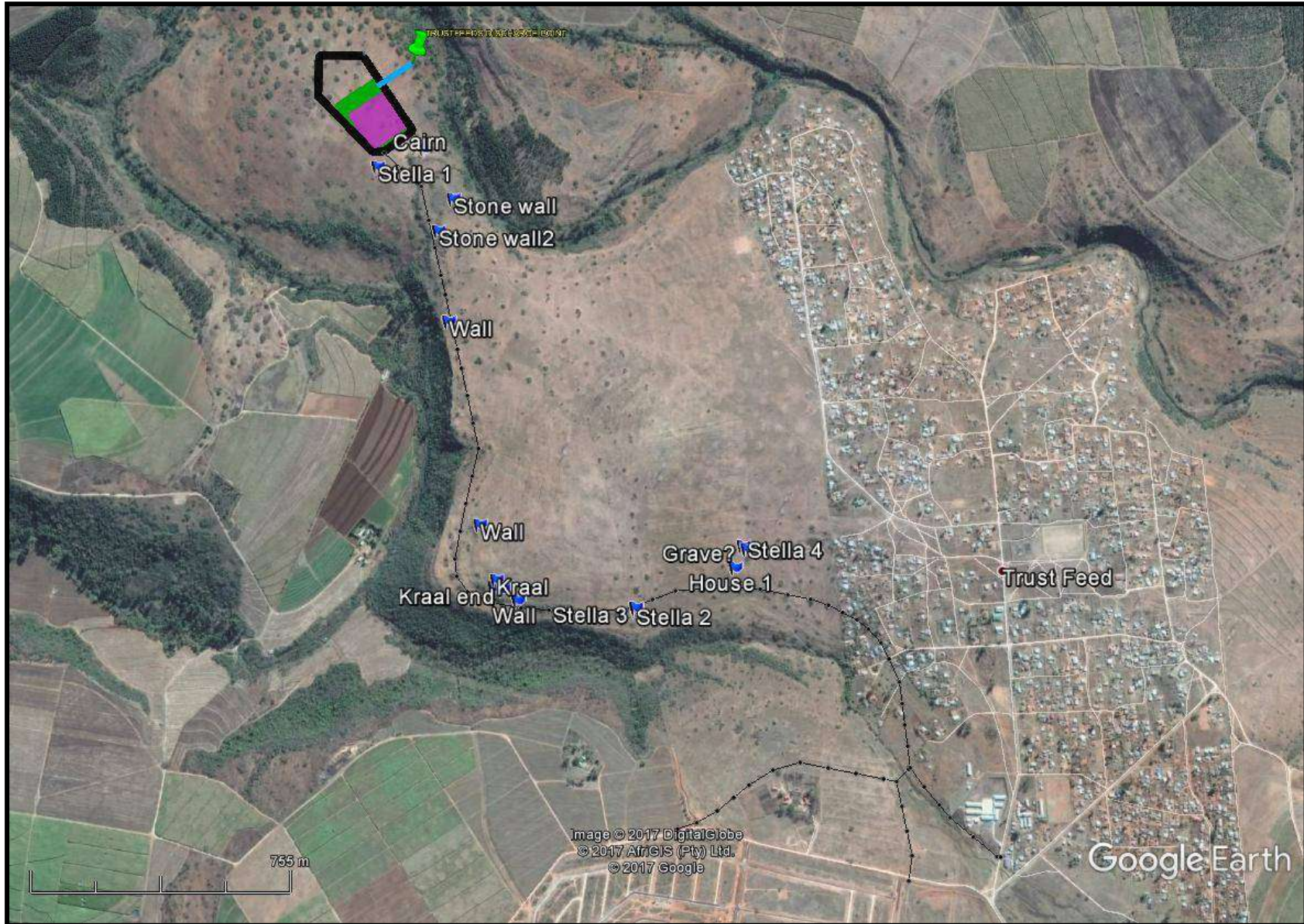
FIELD SURVEY

A field survey was undertaken on 3 July 2017. Much of the area had been recently burnt and visibility was very good. Figure 10 shows the location of recorded finds, and these are tabulated in Table 2.

NAME	LATITUDE	LONGITUDE	DESCRIPTION
Cairn	-29.387213000	30.525147000	
Grave?	-29.397408000	30.534525000	
Graves X4? (TFE01)	-29.398464000	30.527259000	
House 1	-29.397961000	30.534295000	
Kraal (TFE0 1)	-29.398274000	30.527325000	
Kraal end (TFE01)	-29.398515000	30.527513000	
Stelae 1	-29.387678000	30.523774000	
Stelae 2	-29.399045000	30.531403000	
Stelae 3	-29.398989000	30.531394000	
Stelae 4	-29.397477000	30.534642000	
Stone wall	-29.388514000	30.526013000	
Stone wall	-29.389346000	30.525584000	
Stone Wall	-29.391662000	30.525872000	
Stone Wall	-29.398803000	30.527944000	
Stone Wall	-29.396871346	30.526837061	

Only one archaeological site was recorded near the proposed pipeline (TFE01). The other recordings are single features on the landscape. All require some form of mitigation if they are to be damaged in any manner.

FIG. 10: LOCATION OF RECORDED SITES AND FINDS



CAIRN

A small stone cairn occurs near the current access road to the proposed buildings (fig. 11). The cairn is 1.5m x 1m in size. It does not appear to be a grave; however, it should be treated as such until further examination has occurred.

Significance: The cairn is of high significance until proven that it is not a grave. This can only be undertaken by excavations.

Mitigation: The cairn should be fenced off before construction begins. There should be a 5m buffer between the cairn and the fence. The demarcation should be clearly visible.

FIG. 11: STONE CAIRN



STONE WALL

A stone wall runs along the entire area. It varies in size along the length and in some areas, it has disappeared (fig.'s 12 - 13). The wall does not appear to have been used as a cattle byre and it is probably a demarcator for agricultural activity. The wall follows a natural ridge along the landscape. The age of the wall is unknown but it could relate to the site TFE01. Fig, 14 shows the location of the walling in relation to the pipeline

Significance: The wall is of low significance however, it is still a feature on the landscape.

Mitigation: The footprint of the pipeline should be reduced whenever it crosses the wall, or comes near the wall. The pipe will cross the wall in two areas. I suggest that the walling in these two areas is systematically removed before construction occurs, and rebuilt afterwards. The walls need to be clearly demarcated before construction begins and a 'spotter' should be employed to ensure that heavy motorised equipment does not damage the walling. Some form of demarcation will be required in those areas where the footprint occurs within 20m of the wall. The demarcation, etc. should be supervised by a qualified archaeologist. This can be finalised once the final footprint has been established. A permit to damage the wall will be required.

FIG. 12: NORTHERN BEGINNING OF STONE WALL



FIG. 13: STONE WALLING



FIG. 14: LOCATION OF WALLING IN RELATION TO THE PIPELINE¹



¹ Yellow line = wall; red line = pipeline

STELAE

Several stelae were noticed near the proposed line (fig. 14). These are parts of the original fencing markers. The stelae have several grooves that are patinated indicating their age. The stelae, as with the walling, forms part of the cultural landscape. They probably date to when the farm was bought and dates after Wartburg was formed (1850s), i.e. late 19th century.

Stela 1 will not be affected by the proposed construction (fig. 15). Stelae 2 and 3 will occur within the pipeline footprint.

Significance: The stelae form part of the cultural landscape and have been standing in their places for at least a century.

Mitigation: The stelae should not be removed for the sake of the pipeline. There are two options:

1. The pipeline is moved away from the stelae 2 and 3 and these are clearly demarcated; or,
2. The stelae are recorded with the assistance of a surveyor and are then removed. The stelae are then replaced in the same place after the pipeline has been completed. This will be supervised by an archaeologist.

A permit will be required to remove the stelae.

FIG. 15: STELA 1



FIG 16: STELA 2 AND STELA 3



HOUSE 1

House 1 is the remains of the foundations of a house (fig. 17) and a sunken stone cairn ~50m to the northeast (fig. 18). The cairn may or may not be a grave. These two features are outside of the footprint.

Significance: The cairn should be treated as a grave until proven otherwise. It is thus of high significance.

Mitigation: No mitigation is required; however, if cairn should be demarcated during construction phase in case vehicles drive over it.

TFE01

TFE01 is located ~75m from the edge of the hill and ~35m from the centre point of the pipeline. There is a natural ridge between the site and the pipeline. The main part of the site consists of a large stone walled cattle byre with secondary walling (fig. 19). The cattle byre is ~30m in diameter. There are three (possibly four) graves ~7m to the southwest of the cattle byre. The graves are sunken and not well preserved (fig. 20). The graves are in an east-west orientation.

To the north of the cattle byre, i.e. uphill, are several open areas that could be the location of (wattle and daub) houses. One pottery shard was noted in this area (fig. 21).

The low stone walling and sunken graves suggest that the site might date to the Late Iron Age.

Significance: The site is of high significance due to the graves and rarity of so-far recorded LIA sites in the area.

Mitigation: The site may not be disturbed in any manner. There must be clear demarcation between the site and the footprint before construction starts.

FIG. 19: STONE WALLED CATTLE BYRE



FIG. 20: GRAVES AT TFE01



FIG. 21: POTTERY SHERD AT TFE01



MANAGEMENT PLAN

Four types of heritage features were noted during the survey and they all require some form of mitigation:

1. Cairns
2. Stone walling
3. Stelae
4. Archaeological sites

Most of the mitigation involves clear demarcations of the features before construction begins. The current route can change so that it misses the walling, or that it crosses the area of walling where there is minimal walling. Alternatively, the walling will need to be systematically removed before construction and then rebuilt after construction. The same applies for the stelae. I would suggest the footprint is moved further east where Stela 2 and 3 occur.

I suggest that an on-site meeting occurs with the RE, ECO and heritage practitioner where demarcation is discussed and shown. I also suggest that the final pipeline layout is reanalysed at a desktop level so that it can pinpoint, and double check, the location of areas that require mitigation.

CONCLUSION

Umlando was requested by Afzelia Environmental Consultants to undertake an HIA of the proposed Trustfeed bulk water pipeline. This aim of the survey was to confirm that features noted by the report of Active Heritage (2016) were not affected by the current pipeline proposal. The survey noted several new features, and an archaeological site, of which some will require a management plan. These features require either that the pipeline be realigned or that the features are systematically removed before construction and then rebuilt afterwards.

A final desktop, followed by site meeting, will need to occur before construction begins.

REFERENCES

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2930BC New Hanover 1968, 2000

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SAHRIS Database

Umlando Database

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EXPERIENCE OF THE HERITAGE CONSULTANT

Gavin Anderson has a M. Phil (in archaeology and social psychology) degree from the University of Cape Town. Gavin has been working as a professional archaeologist and heritage impact assessor since 1995. He joined the Association of Professional Archaeologists of Southern Africa in 1998 when it was formed. Gavin is rated as a Principle Investigator with expertise status in Rock Art, Stone Age and Iron Age studies. In addition to this, he was worked on both West and East Coast shell middens, Anglo-Boer War sites, and Historical Period sites.

DECLARATION OF INDEPENDENCE

I, Gavin Anderson, 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 heritage assessment services. There are no circumstances that compromise the objectivity of my performing such work.

A handwritten signature in black ink, appearing to read 'G Anderson', with a horizontal line underneath.

Gavin Anderson
Archaeologist/Heritage Impact Assessor