

**DESKTOP HERITAGE SURVEY OF THE PROPOSED
GROYNES ON THE MKHONUZANA RIVER , SANI
PASS, KZN**

**FOR HANSLAB ENVIORONMENTAL
CONSULTANTS**

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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

“In 2007, a joint venture consisting of SSI Engineers and Environmental Consultants (SSI), Ndizani Civil Works (Ndizani) and Semanya Furumele Consulting (SFC) was awarded Phase 2 of the upgrading of road P318. This involved the redesign, partial realignment and surfacing of 19 km of existing gravel road extending to the top of Sani Pass on the Lesotho Border.

The Mkonozana River drains the valley leading down from the Sani Pass and runs parallel to the Sani Pass road P318 for several kilometres. A Gabion retaining wall is required between chainage 13900 m and 14800 m to ensure stability of the road fill. The main river bed channel is very close to this longitudinal structure, and detailed hydraulic analysis (ARQ 2017) indicated extremely high flow velocities against the proposed wall. Combined with a high impinging angle onto the proposed wall, the potential scour at the wall was estimated as severe and cannot be adequately managed with the mere introduction of reno mattresses.

The introduction of groynes was consequently proposed. These groynes will decrease the velocity and impinging angle on the gabion wall by effectively directing the main river flow away from the proposed gabion wall” (ARQ 2018:1).

Umlando was requested to undertake an assessment of the proposed development. Figures 1 – 3 show the location of the development.

FIG. 1 GENERAL LOCATION OF THE PROPOSED DEVELOPMENT

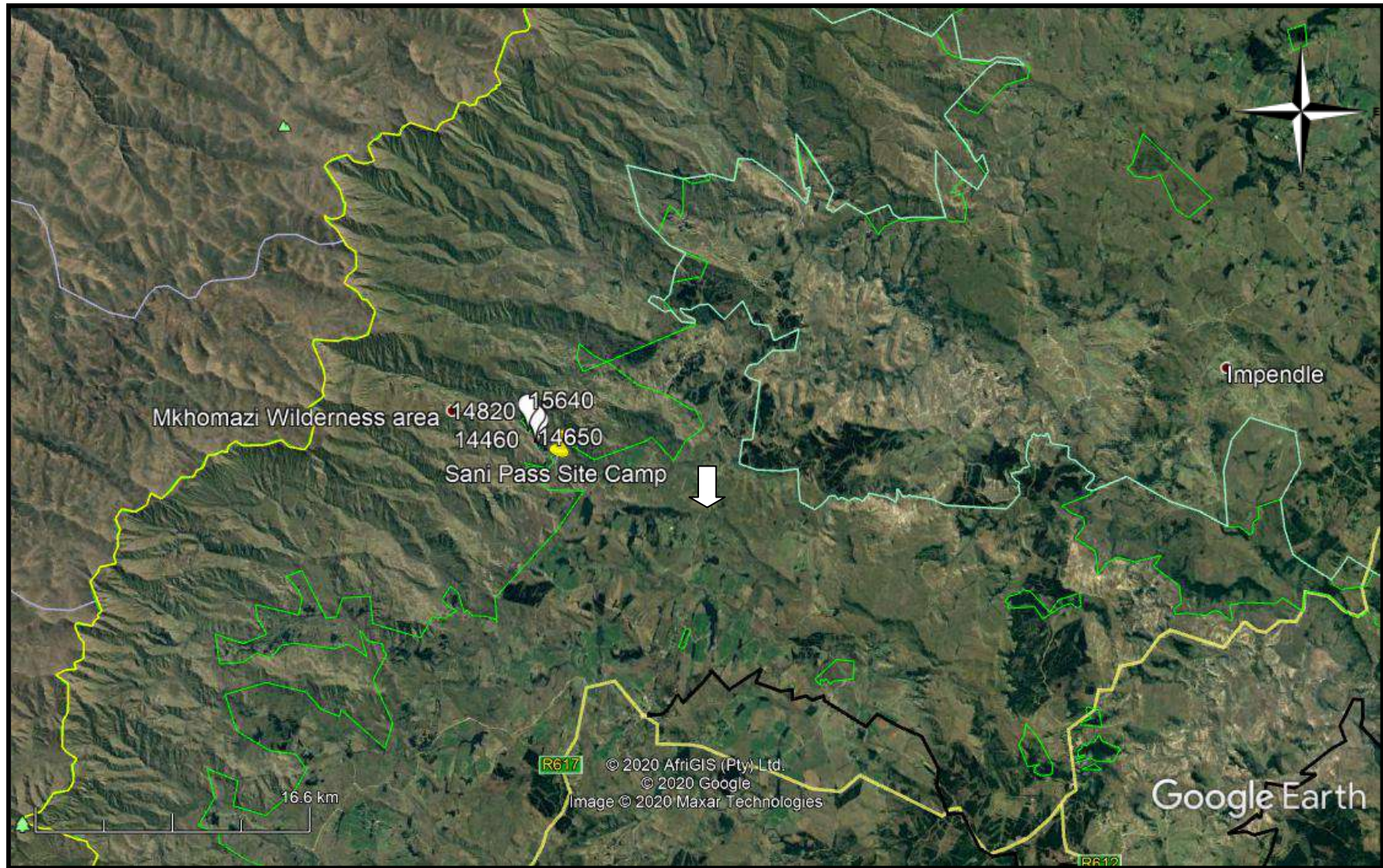


FIG. 2: AERIAL OVERVIEW OF THE PROPOSED DEVELOPMENT

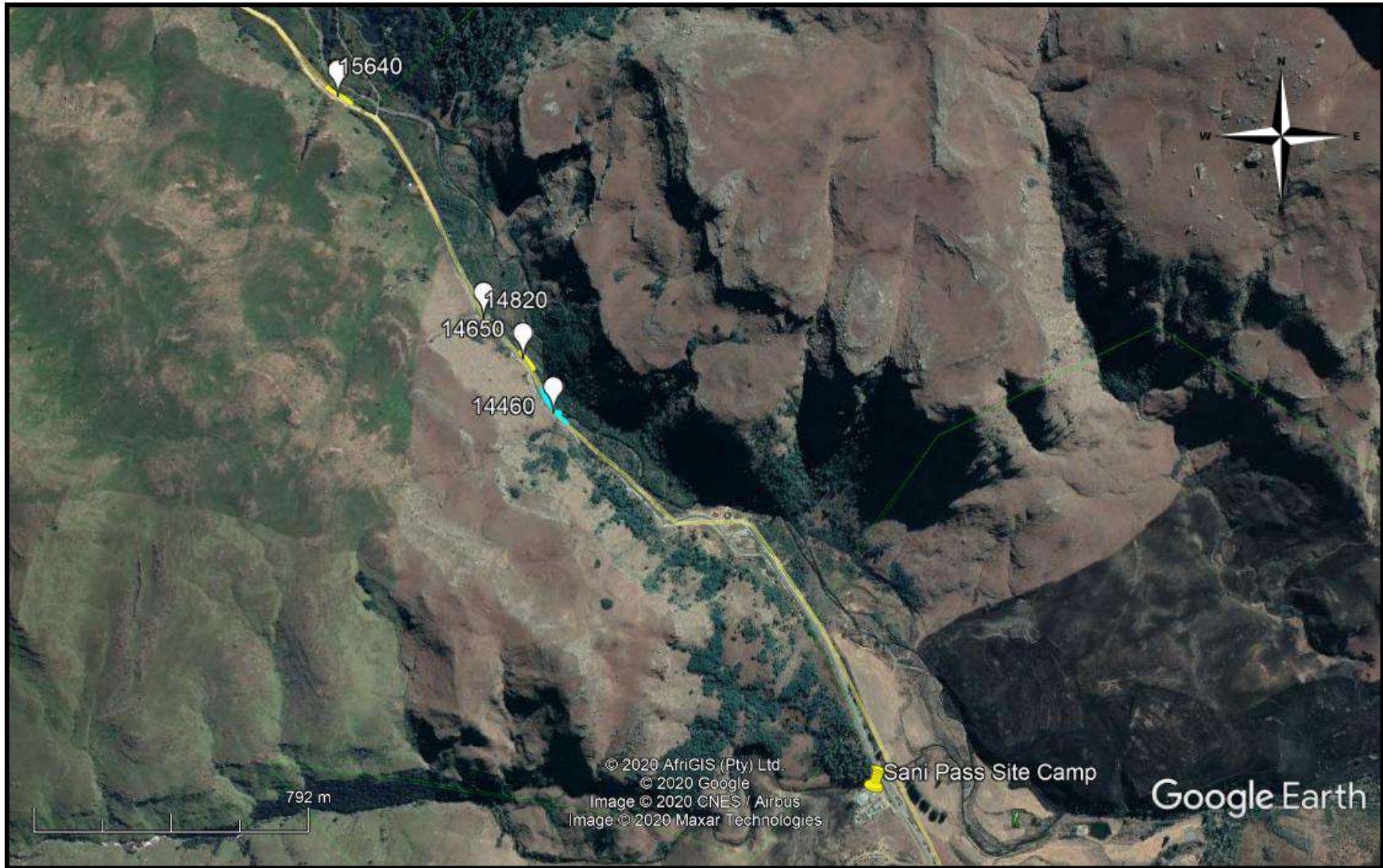
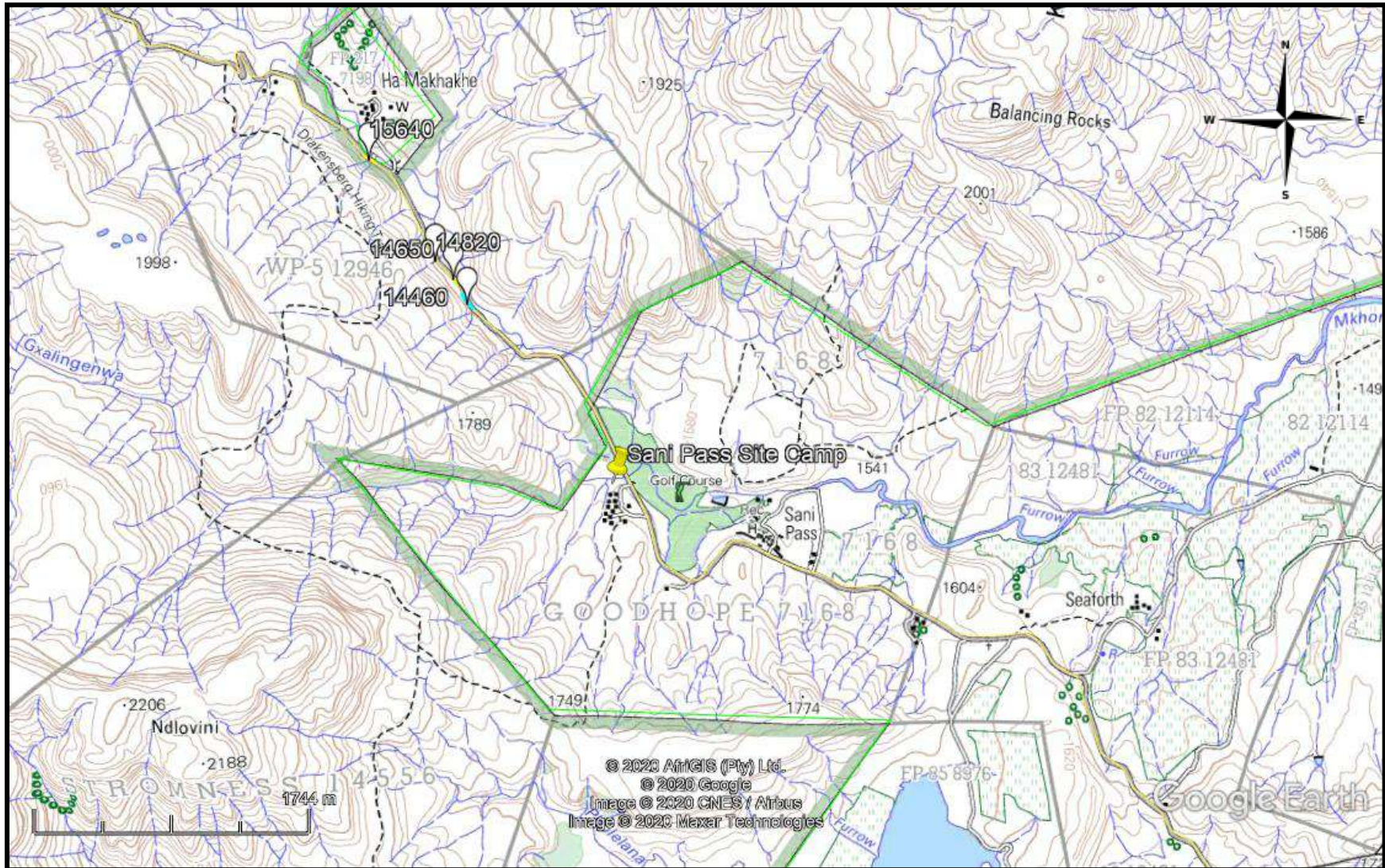


FIG. 3: TOPOGRAPHICAL MAP OF THE PROPOSED DEVELOPMENT (2002)



KWAZULU NATAL AMAFA AND RESEARCH INSTITUTE, ACT 05, 2018

“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.”

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. Table 1 lists the grading system.

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

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. Many archaeological sites occur in the general area. The archaeological sites tend to be open Stone Age scatters of low significance, Overhangs with Rock Paintings, Late Iron Age walling, and Historical Period structures (fig. 4).

Nzumbululo Heritage Solutions undertook a heritage survey of the Sani Pass in 2009. The area of the groynes was covered by this survey. No heritage sites were recorded during the survey in the vicinity of the groynes and camp site.

The 1972 topographical map indicates that there are no settlements in the general area (fig. 5).

FIG. 4: LOCATION OF KNOWN HERITAGE SITES IN THE GENERAL AREA

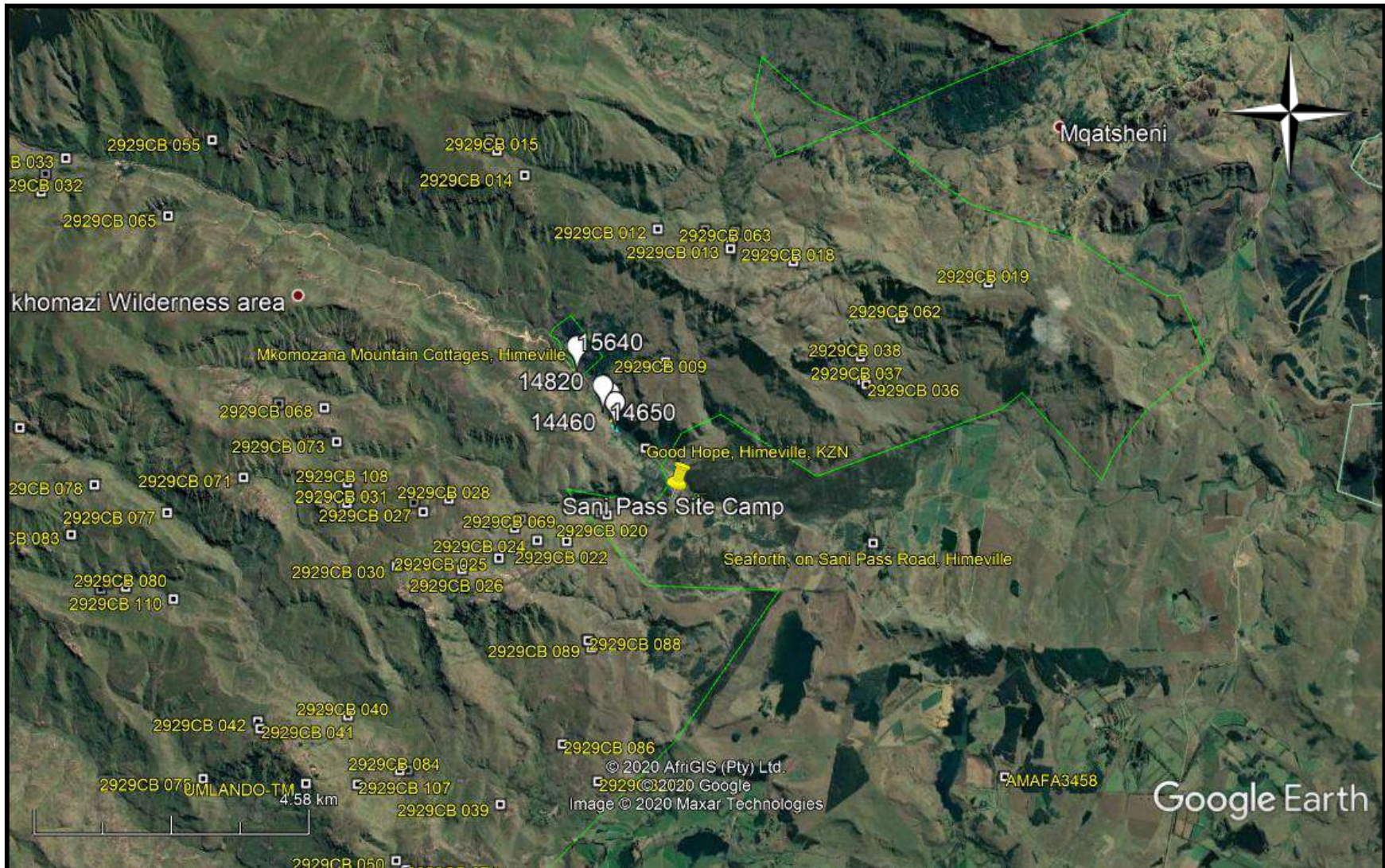
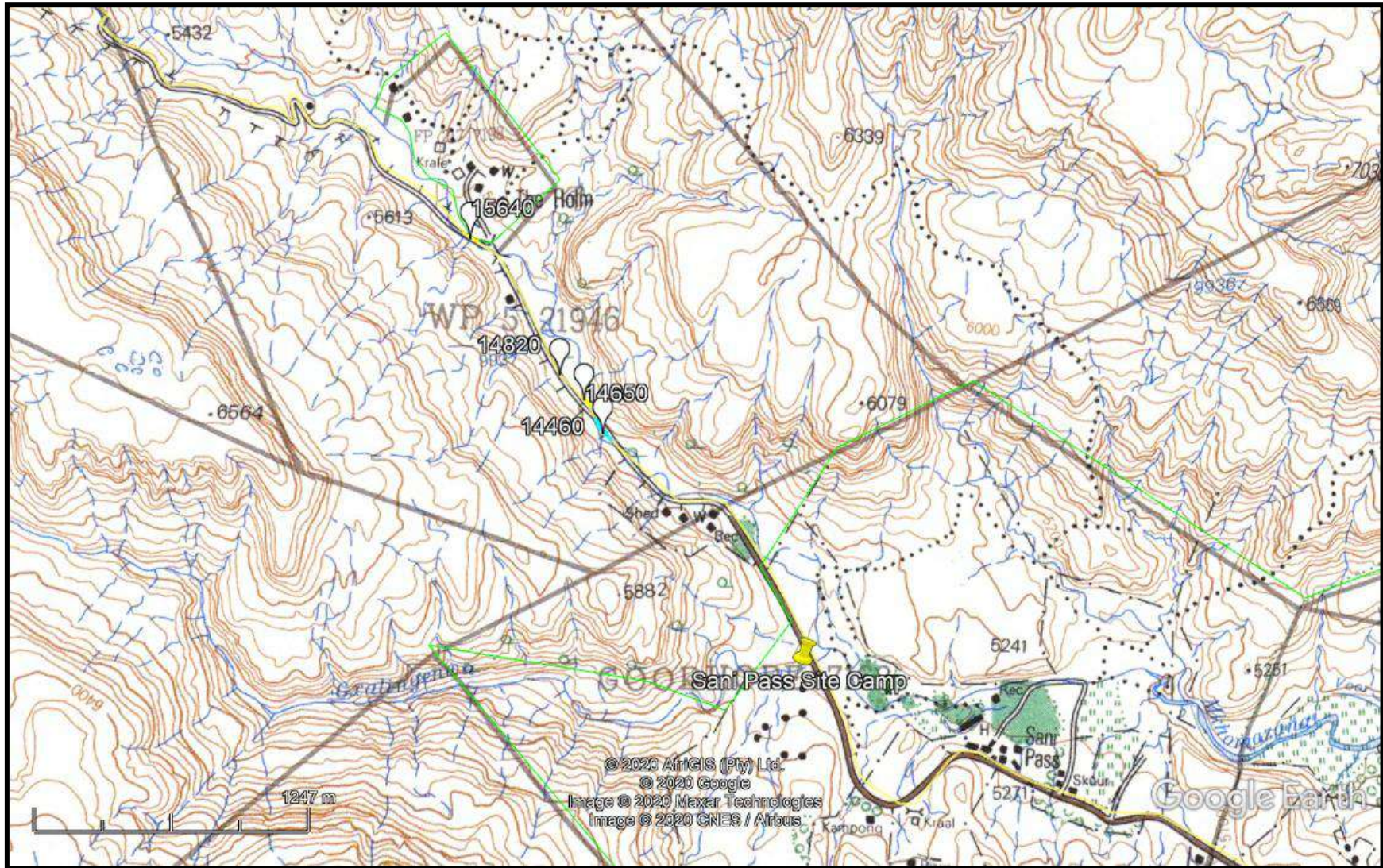


FIG. 5: TOPOGRAPHICAL MAP OF THE PROPOSED DEVELOPMENT (1972)



PALAEONTOLOGICAL SENSITIVITY

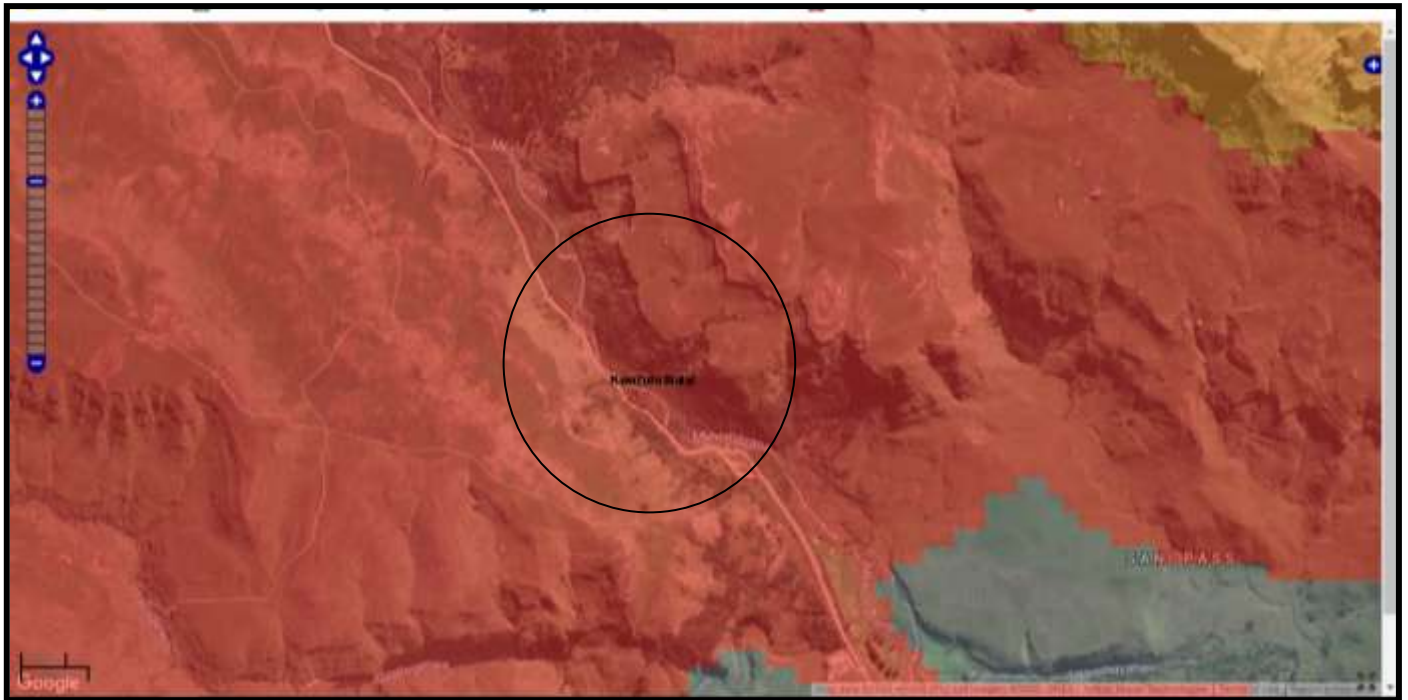
The area is in an area of very high palaeontological sensitivity (fig. 6). The fossils were reported by Nzumbululo Heritage Solutions (2009).

“The entire uKhahlamba-Drakensburg Mountain range region is an outstanding geological formation which is acknowledged in the UNESCO World Heritage Site listing. The Sani Pass road route traverse through the southern section of this universally valued natural landscape. The imposing Drakensberg escarpment is the product of millions of years of sculpting by the elements. The foundations of the mountain range reach back billions of years. Its formation provides a fascinating geological history. Millions of years of formation left different geological as glistening quartz crystals trapped between the sand grains that characterise the southern uKhahlamba-Drakensburg. These even molten layers provided the surfaces that were to be used by the San hunter-gatherers as painting surfaces. These layers also contain early dinosaur fossils. The footprints of these early creatures can be found in the sandstone caves of the Drakensberg foothills, often exposed on the ceilings where the softer sediment layers below them have been worn away (Truswell, 1970)

Some fossilised sea shells were observed on some loose rocks on the river bed of the Mkomazana River whose valley the Sani Pass follows. It was determined that the fossils shells identified on the river bed at the crossing of were not *in situ*. Since they were recorded on rocks on the river bed, it means they originated elsewhere from upstream. However, these serve as an indication that the rock formations within the vicinity of the road servitude have potential to yield fossil remains (Nzumbululo Heritage Solutions 2009:30)”

The fossils were located downstream of the proposed groynes.

FIG. 6: PALAEOANTHROPOLOGICAL SENSITIVITY MAP



The proposed groynes will not affect any potential palaeontological deposits.

RECOMMENDATIONS

No heritage sites have been recorded in the study area. The project should be exempt from further HIA mitigation.

CONCLUSION

A desktop heritage survey was undertaken for the proposed groynes on the Mkhonozana River. No heritage sites are known to occur in the study area. The project should be exempt from further heritage mitigation.

REFERENCES

ARQ Consulting Engineers. 2019. Sani Pass Road - Design Of Groynes At Mkonozana River Chainage 14 380 To 14 520

Nzumbululo Heritage Solutions 2009. Archaeological And Heritage Impact Assessment Of The Sani Pass For The Proposed Sani Pass Road Upgrade Project In The Ukhanhlamba/Drakensberg Park UNESCO World Heritage Site, Kwazulu-Natal Province. Report For Arcus Gibb.

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