

HERITAGE IMPACT ASSESSMENT OF THE PROPOSED RIVER CROSSINGS TO ACCESS THE PARLOCK-UMGENI POWER LINE, KZN

eThekwini Electricity

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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

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1 INTRODUCTION

eThekweni Electricity propose the construction of four river crossings, which are required for maintenance vehicles to access the overhead power line towers in the Clermont / Reservoir Hills area of Durban, KwaZulu-Natal. The river crossings are required for access by eThekweni Electricity to the towers of 3 lines, namely Parlock-Umgeni (ex Umgeni-Durban North), Umgeni-Avooca and Umgeni-Reservoir Hills. Access is required for routine inspections (estimated at twice per year), occasional maintenance and repairs.

During the construction phase of the towers, access routes were constructed together with gabion river crossing structures, which were subsequently washed away during rainy seasons and floods. Hence the requirement for the construction of new river crossings for continued access to these towers.

The proposed construction includes reinforced concrete low level crossings at four positions along the Aller River within the Clermont / Reservoir Hills valley. The valley is zoned as D'MOSS (Durban Metropolitan Open Space System) in terms of the eThekweni Spatial Development Framework (eThekweni, 2012). As the structures must be durable and able to withstand high waters and flooding, a concrete structure would be suitable. Each of the structures is proposed to be 4m wide and designed to accommodate a fully loaded 6x6 all-wheel Actros Mercedes-Benz truck. Construction will cover an area of more than 50m² within and on either side of the river at each of the four crossing positions.

The structural system will consist of reinforced concrete abutments on each side of the river, reinforced concrete piers in the centre of the river and a suspended slab / beam system on the top. Guide blocks of 300mm will be provided on top of the slab. These guide blocks are proposed to also act as a water depth indicator, in that when water rises over the blocks, road users will be made aware that the crossing is not safe to use.

Some removal or depositing of soil may be required within the watercourse at the positions of the river crossings, depending on ground conditions at the time of construction. Some repair construction works, including cutting and shaping, will be required on existing gravel access routes to the crossings and road access to Crossing 1 will need to be created by clearing of vegetation and grading for 4x4 vehicle access.

Umlando was contracted by EcoLink Consulting (Pty) Ltd undertake the heritage survey of the proposed Parlock-Umgeni line river crossings and access roads.

Figures 1 – 4 show the location of the development.



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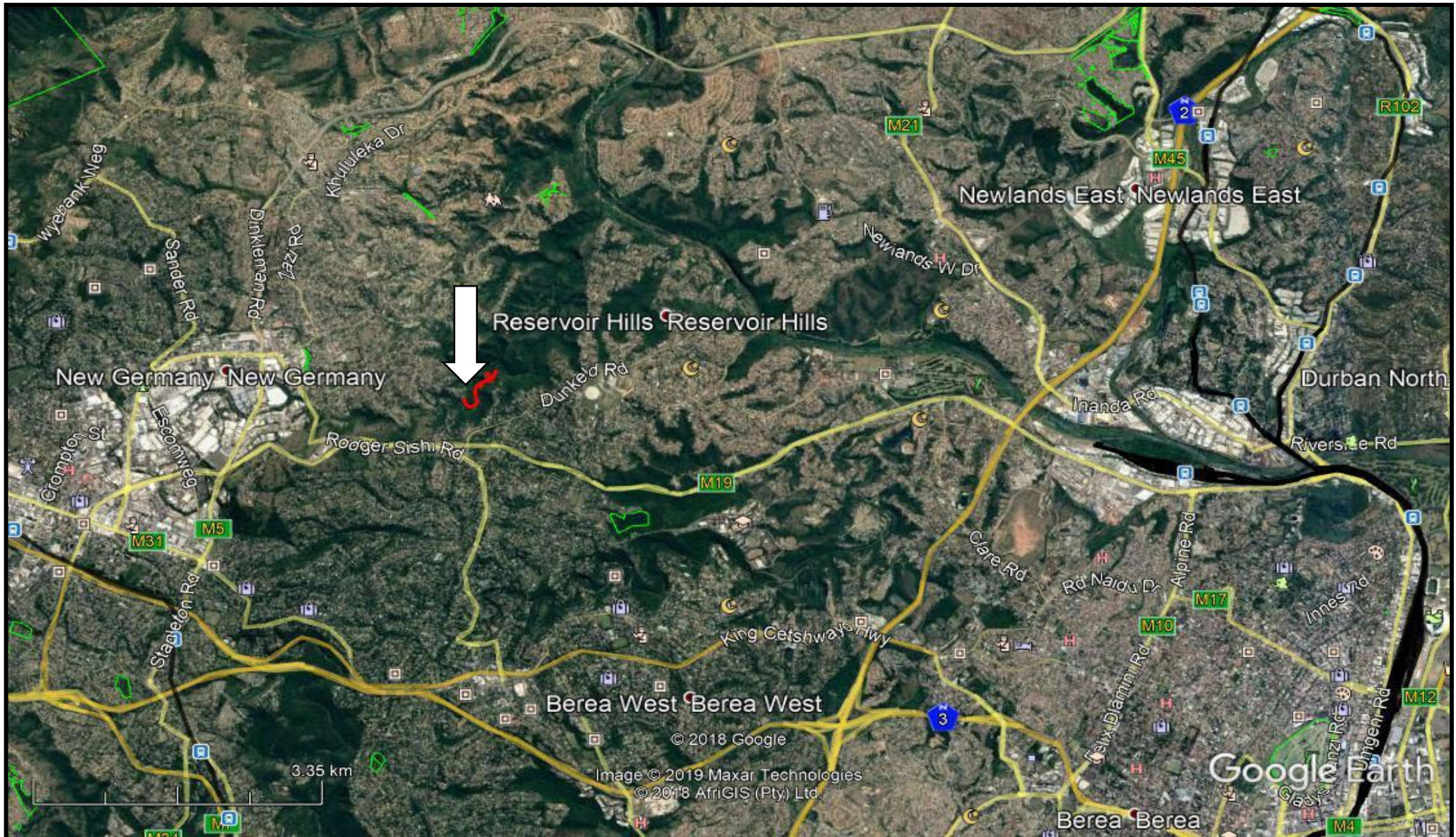


Figure 1: General location of the proposed development



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Figure 2: Aerial overview of the proposed development of Erf 1703



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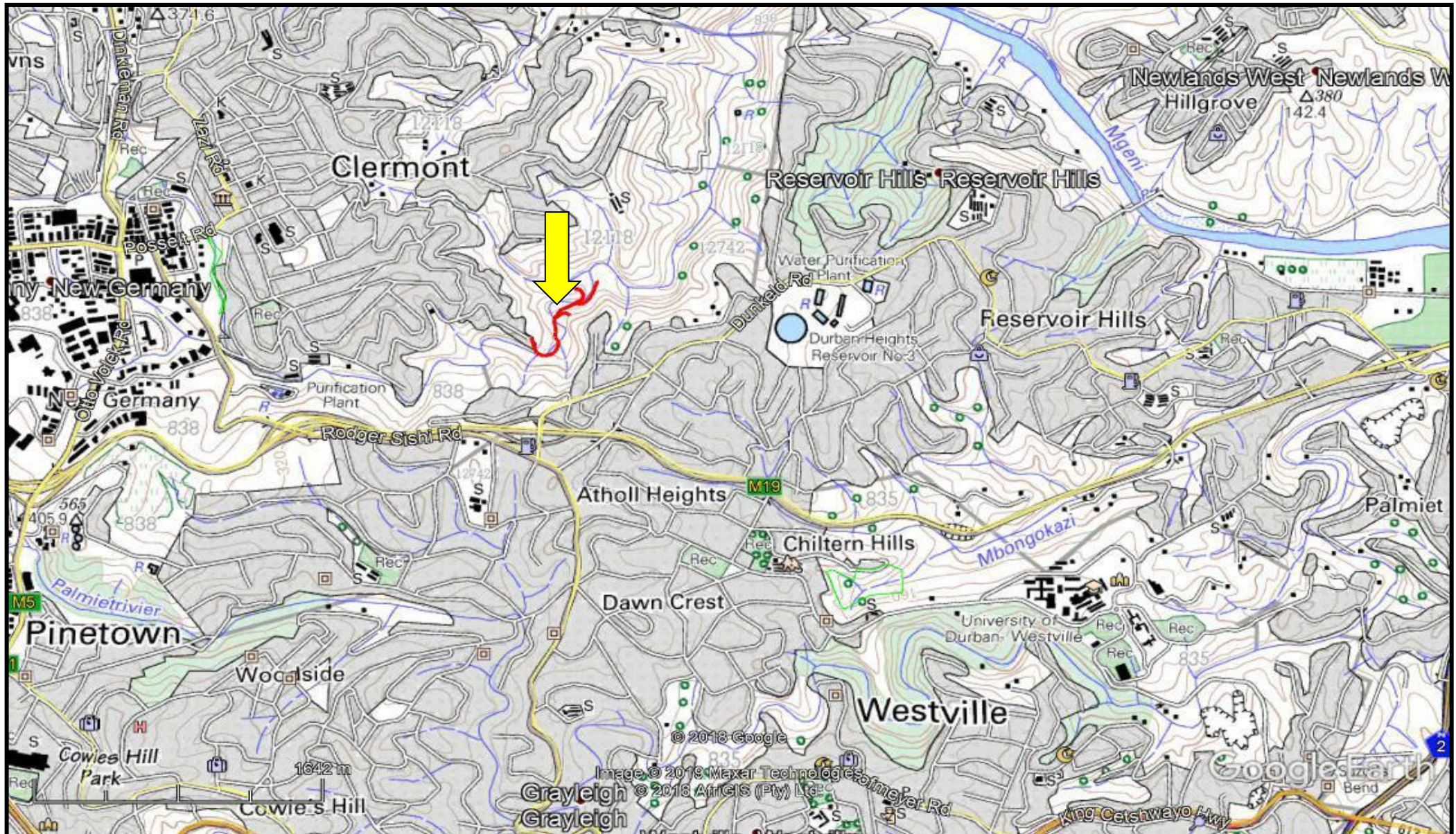


Figure 3: Topographical map of the proposed development



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Figure 4: Scenic views of the study area



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“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.”

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3 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 database 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.

3.1 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:

- Organic remains:
 - Faunal
 - Botanical
- Rock art
- Walling
- Presence of a cultural deposit
- Features:
 - Ash Features
 - Graves
 - Middens
 - Cattle byres
 - Bedding and ash complexes

(2) Spatial arrangements:

- Internal housing arrangements
- Intra-site settlement patterns
- Inter-site settlement patterns

(3) Features of the site:



- Are there any unusual, unique or rare artefacts or images at the site?
- Is it a type site?
- Does the site have a very good example of a specific time period, feature, or artefact?

(4) Research:

- Providing information on current research projects
- Salvaging information for potential future research projects

(5) Inter- and intra-site variability

- Can this particular site yield information regarding intra-site variability, i.e. spatial relationships between various features and artefacts?
- Can this particular site yield information about a community's social relationships within itself, or

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between other communities?

(6) Archaeological Experience:

- 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:

- Does the site have the potential to be used as an educational instrument?
- Does the site have the potential to become a tourist attraction?
- The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.

(8) Other Heritage Significance:

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

The more a site can fulfil 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.

4 RESULTS

4.1 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. There have been no prior surveys in the study area. The archaeological sites tend to be open Stone Age scatters of low significance (fig. 5).

The 1935 (Figure 6) and 1943 (Figure 7) maps indicate that there are no features within the development footprint.



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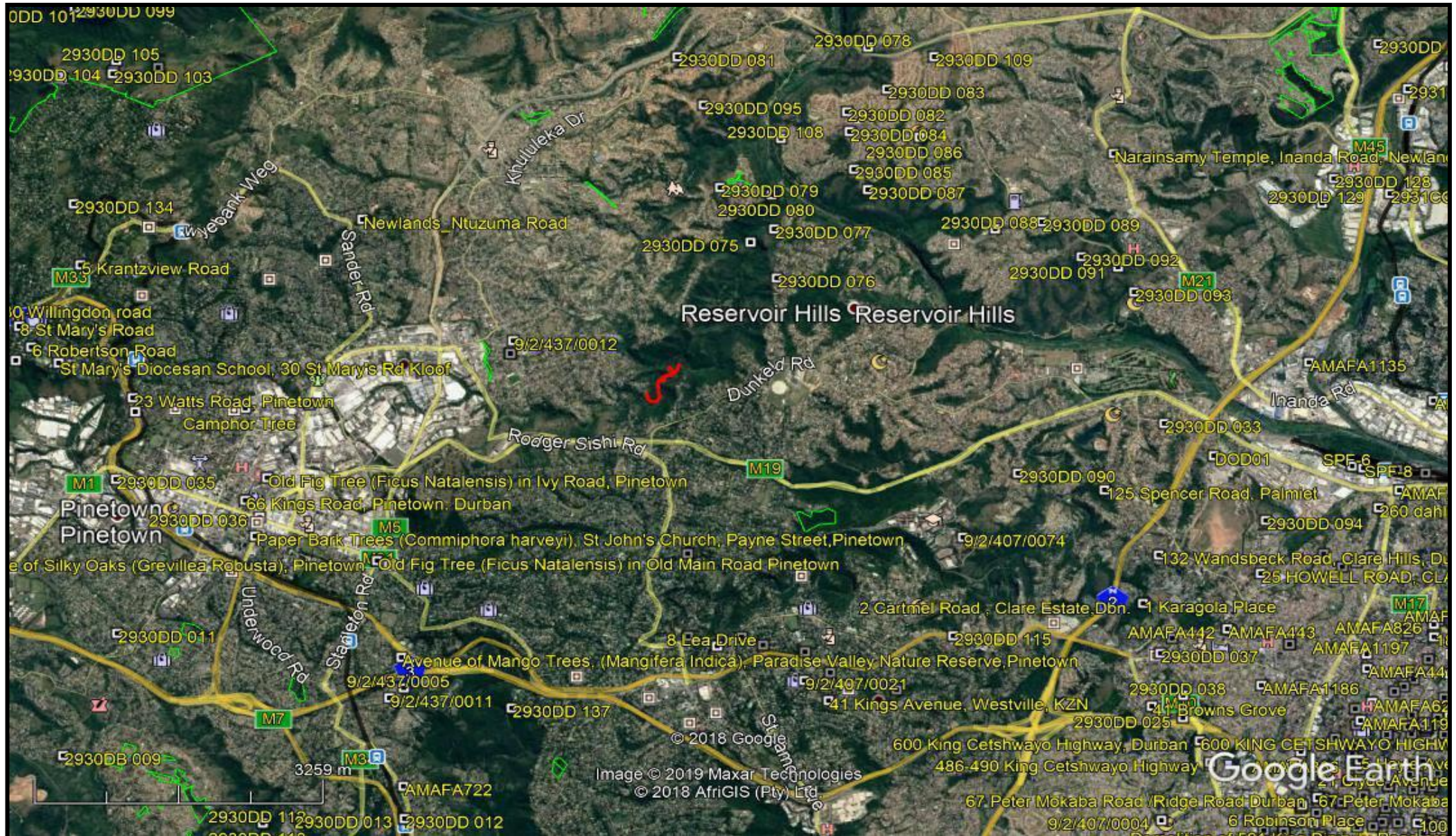


Figure 5: Location of known heritage sites in the general area



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Figure 6: Location of proposed development in 1937



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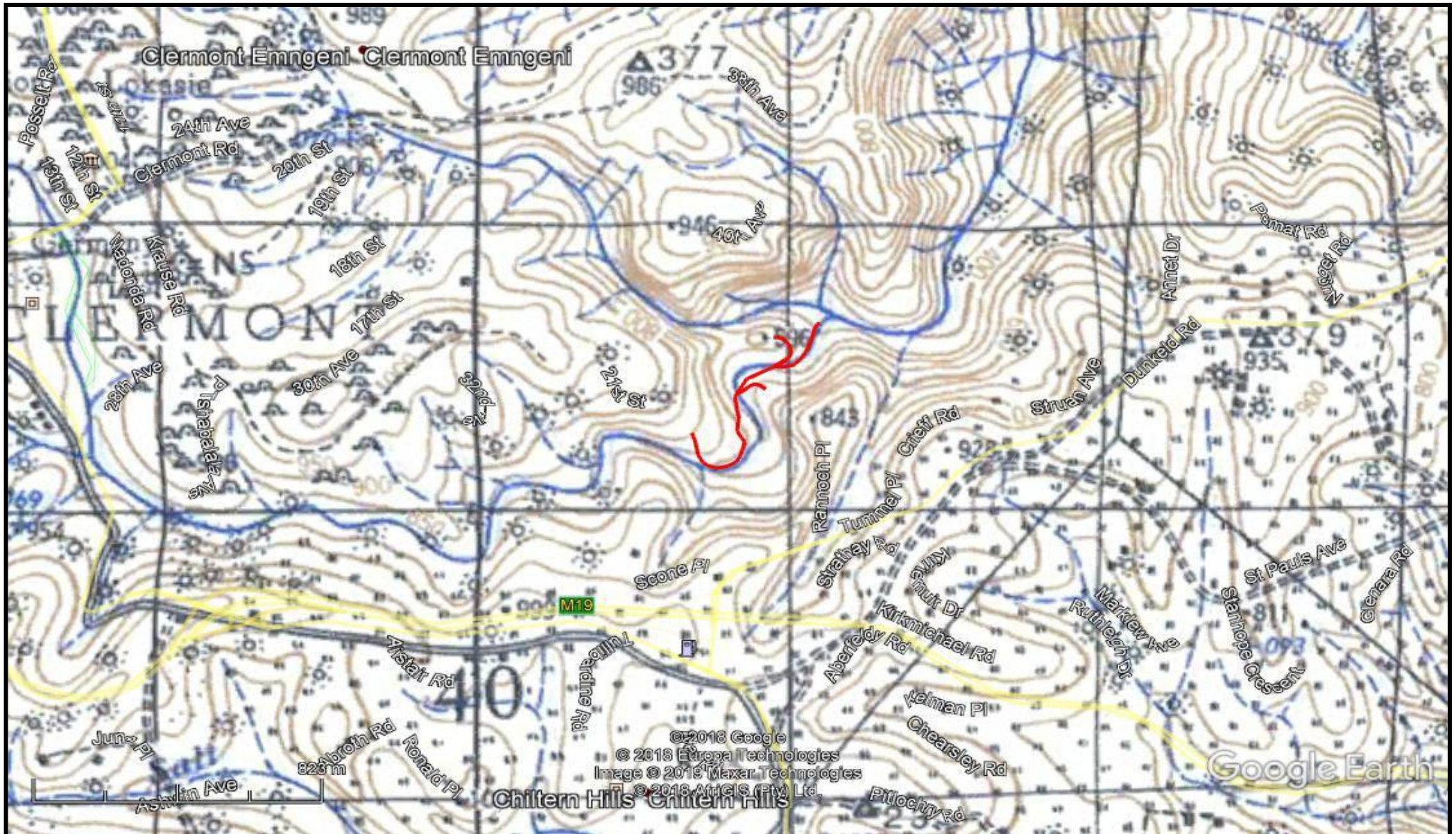




Figure 7: Location of proposed development in 1968

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4.1.1 Palaeontological Sensitivity

The site is in an area of low/no palaeontological sensitivity (Figure 8). No further Palaeontological Impact Assessment mitigation is required.

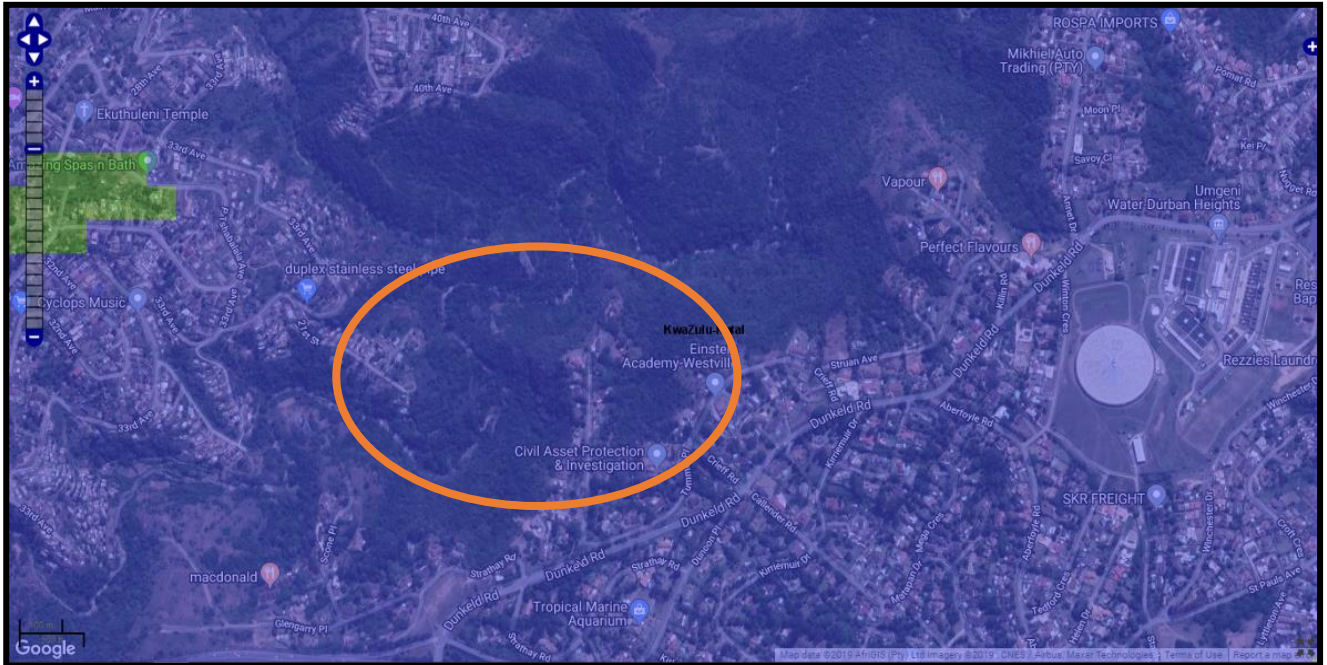


Figure 8: Palaeontological sensitivity map

4.2 Field Survey Results

A field survey was undertaken in the 11 December 2019. I was accompanied by members of the department who have traversed the route before. The proposed route occurs on an existing road that is overgrown and requires maintenance in a few areas.

The bridge crossings occur in small streams that would not have heritage features.

The main areas of concern were near the pylons. Two of the three pylons were accessed, and no heritage features were noted. The third pylon, on the east could not be accessed due to dense vegetation. However, since surveying the area, I believe it should be exempt from further HIA studies.

5 CONCLUSION

A heritage survey was undertaken for the upgrade of the access roads along the Aller River in the Clermont/Reservoir Hills valley. The upgrade is for the existing roads to four pylons, and gabions that were swept away in floods. A heritage survey was undertaken as two of the hills appeared to be sensitive for LIA and/or HP sites. The survey noted that no sites occurred in the study area, even though one pylon could not be accessed due to dense vegetation.

No further HIA mitigation is required.



6 REFERENCES

Maps:

- [1] 2930DD_2931CC Durban, 1940, 2000
- [2] 117B_048_36587

Databases:

- [3] KZN Museum Database
- [4] SAHRIS Database
- [5] Umlando Database

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7 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.

8 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.



Gavin Anderson
Archaeologist/Heritage Impact Assessor