

**PROPOSED CONSTRUCTION OF OFF TAKE 5B
POTABLE WATER PIPELINE AS PART OF THE
LOWER THUKELA BULK WATER SUPPLY AT HYDE
PARK, ILEMBE DISTRICT MUNICIPALITY, KZN**

FOR TRIPLO4 SUSTAINABLE SOLUTIONS

DATE: 9 DECEMBER 2014

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INTRODUCTION

“The proposed construction for Off Take 5B forms part of the Lower Thukela Bulk Water Supply Scheme, project initiated by iLembe District Municipality and co-funded by the Department of Water Affairs & Sanitation. The construction of Off Take 5B is part of the sections of the potable water pipeline that forms part of the broader Bulk Water Supply Scheme in the lower Thukela Region. The proposed pipeline is located immediately outside the road reserve and is approximately 1.7km in length with an outside diameter of approximately 315 mm. The project makes provision for Bulk Supply of Potable water to communities that currently do not have access to reticulated potable water in the Lower Thukela Region” (Triplo4 BID 2014). The proposed development falls within the KwaDukuza Local Municipality and iLembe District Municipality.

The site is located ~8km north-northeast of Stanger and 1km - 2km north of Princes Grant Estate in Northern KwaZulu-Natal (Figures 1 – 3). The study area has been under sugarcane cultivation for over 80 years. The soils are relatively shallow, especially on the top of the various hills.

The heritage survey was undertaken in November 2014.

FIG. 1 GENERAL LOCATION OF THE STUDY AREA

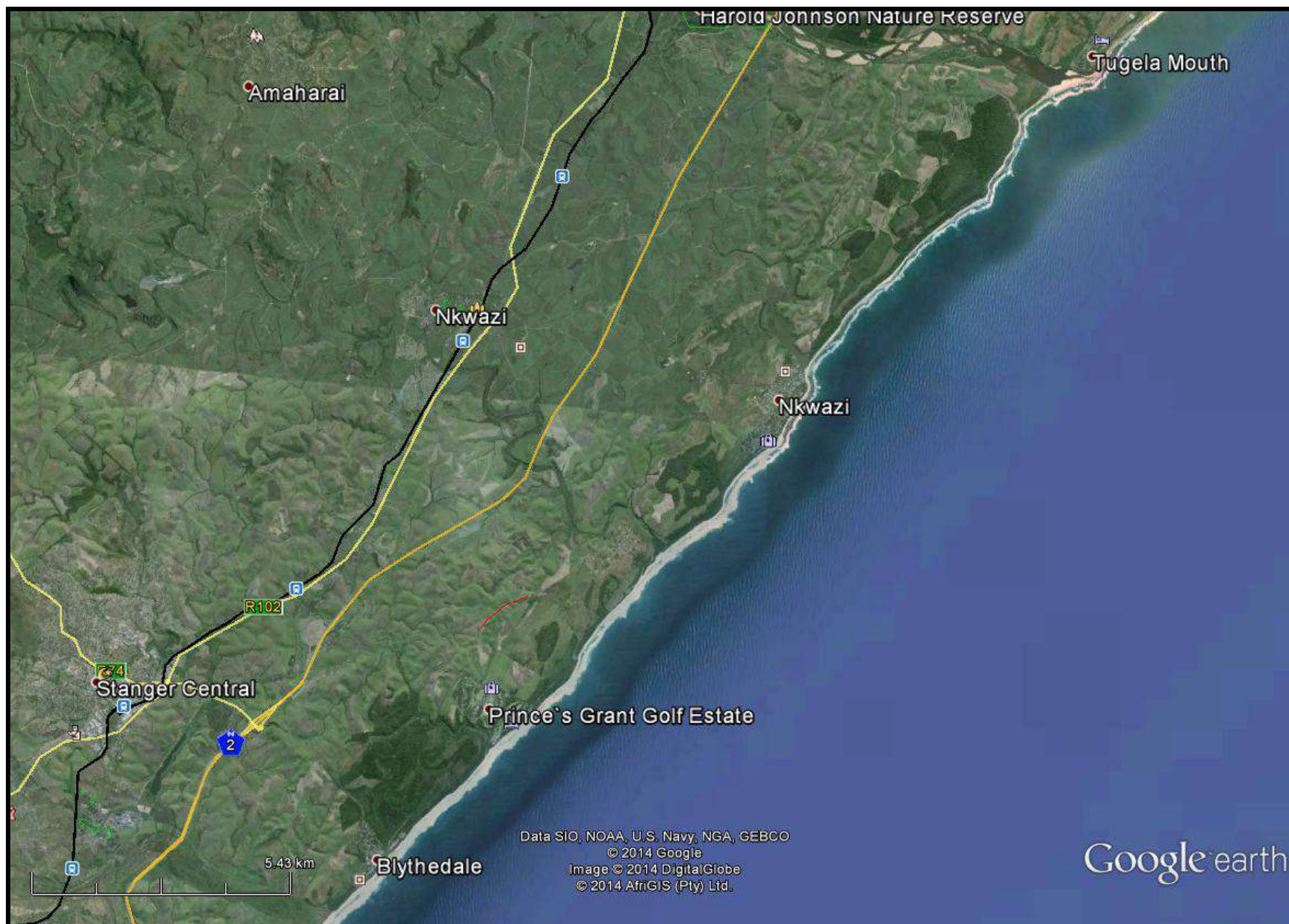
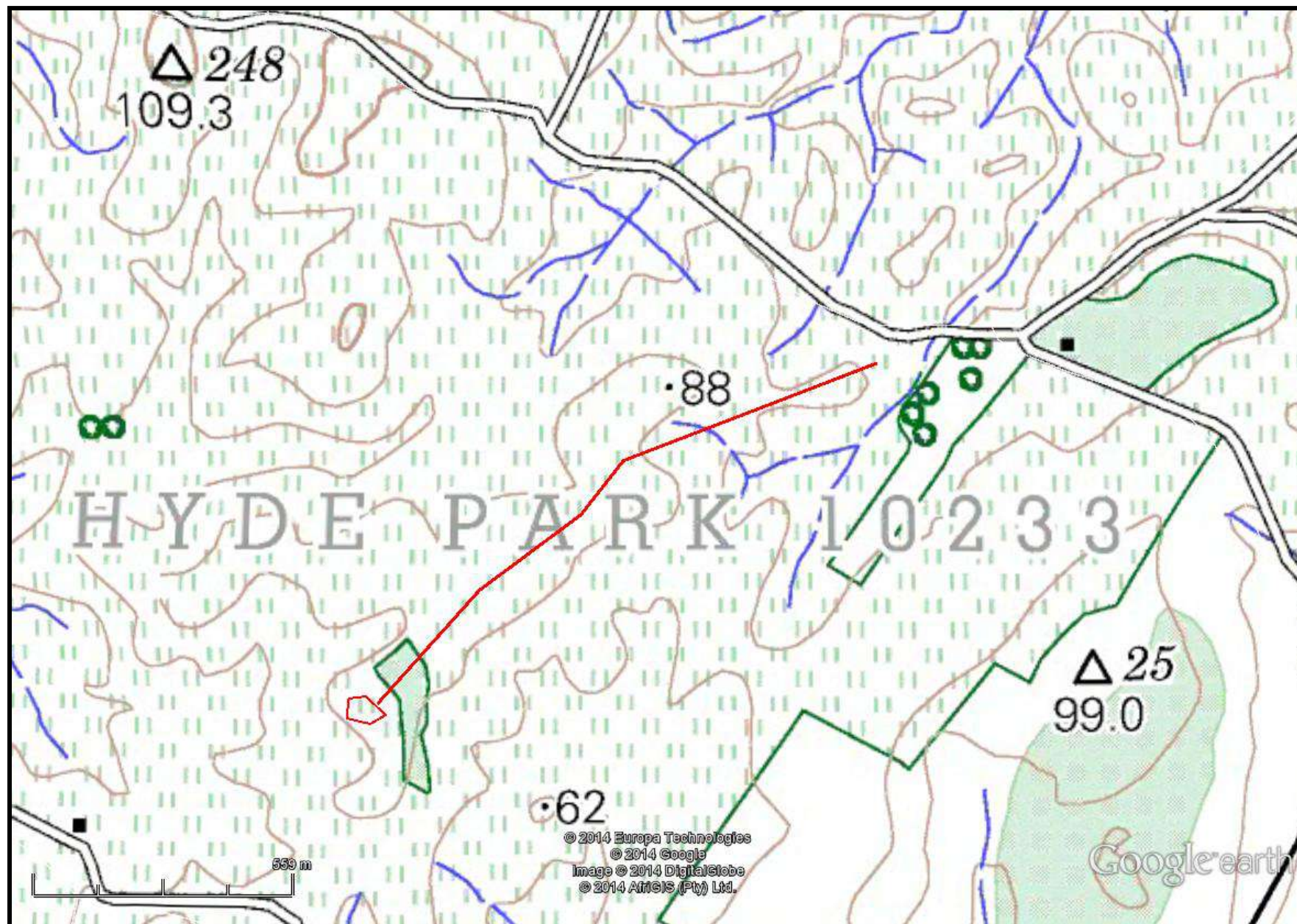


FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA



FIG. 3: TOPOGRAPHICAL MAP OF THE STUDY AREA



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.

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. 4). 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 earliest Surveyor General maps indicate the farm was first surveyed in 1906. No buildings are indicated on the 1906 and 1928 diagrams (fig. 5)

The 1937 aerial photographs indicate that the land was under cultivation from at least 1937, and that there are no buildings or settlements in the study area (fig. 6).

The 1968 1:50 000 indicates that the study area is under sugar cane cultivation, and that no buildings occur therein (fig. 7).

The area is in a non-palaeontological sensitive zone, and no PIA report is required (SAHRIS PIA map). There are sensitive areas to the north and south of the study area however, these will not be effected.

FIG. 4: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA

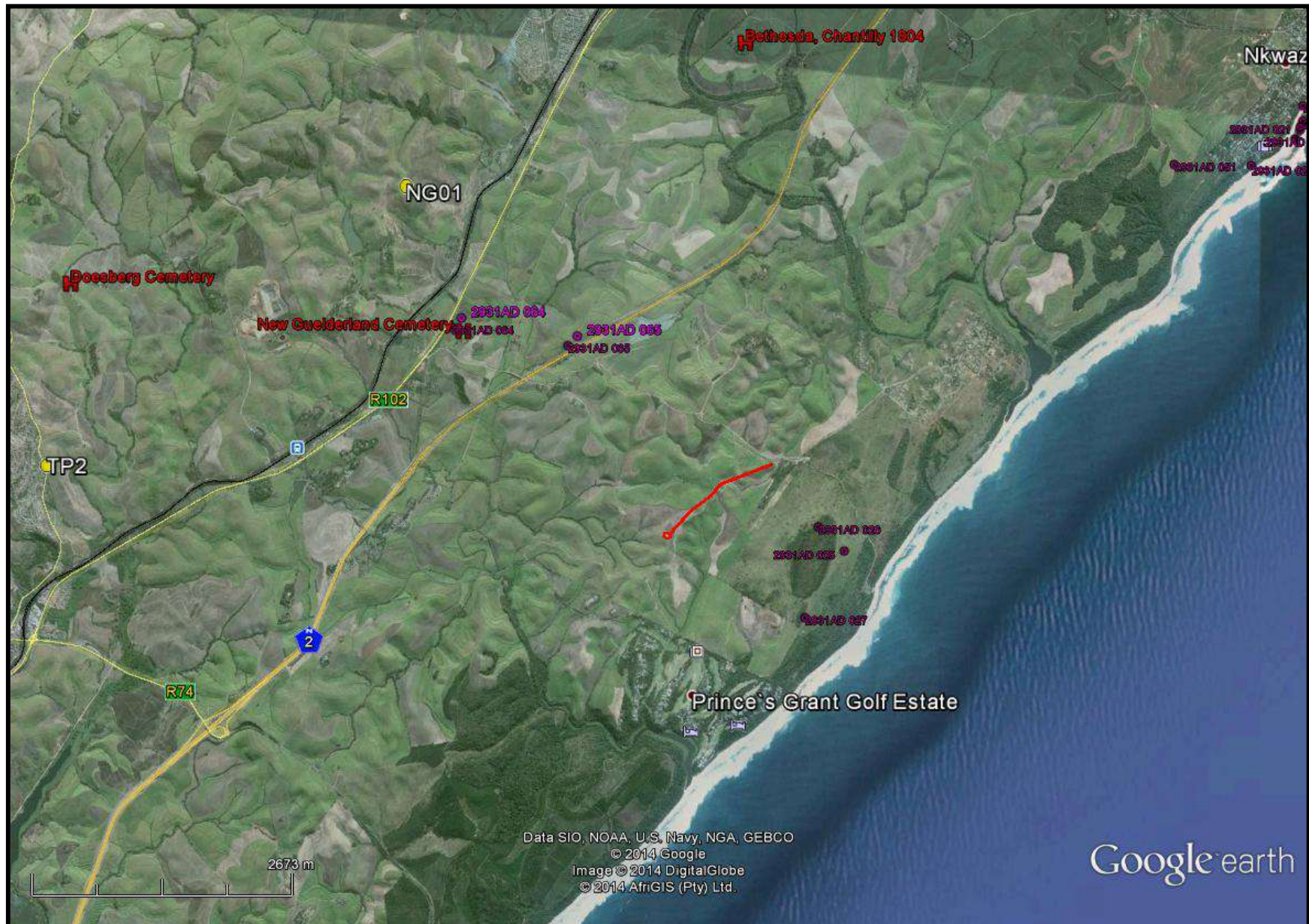


FIG. 5: SURVEYOR GENERAL MAPS FROM 1906 AND 1923

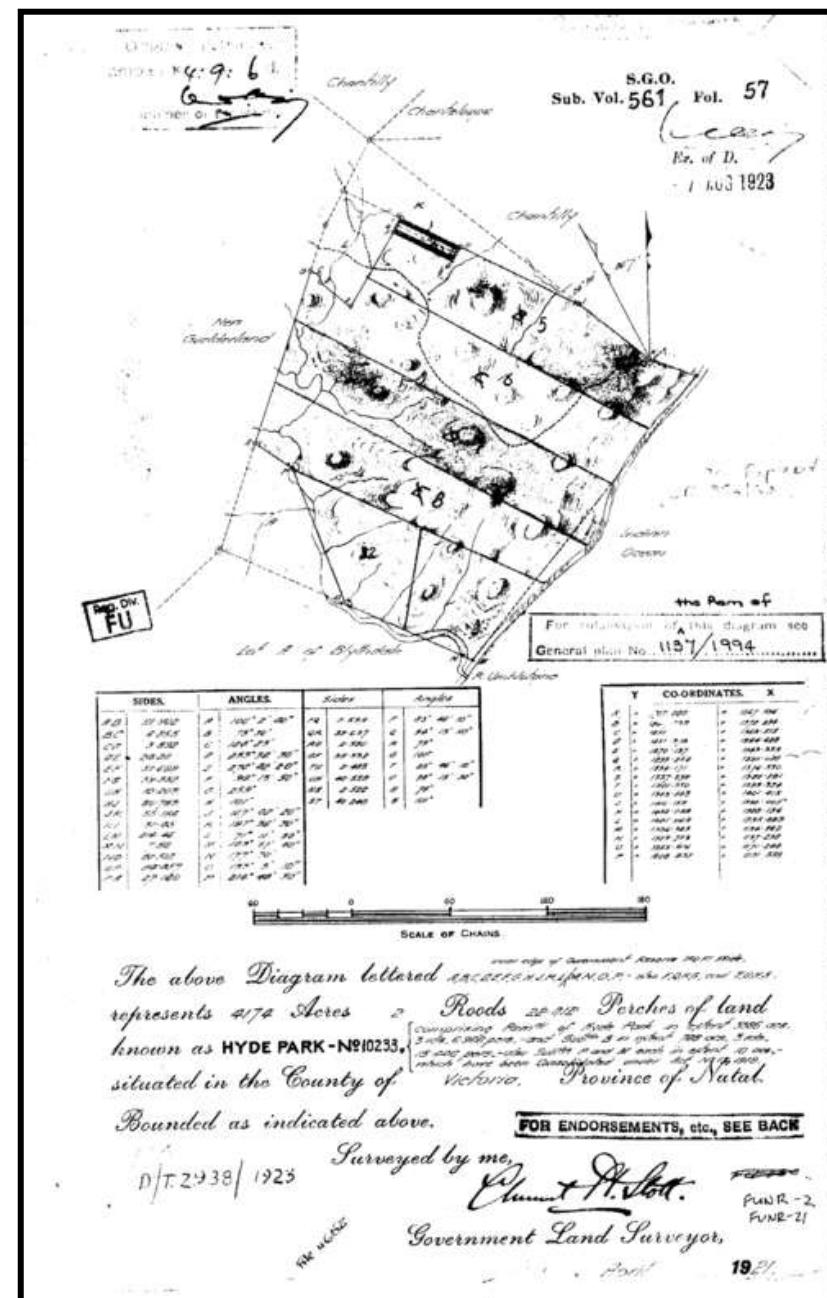
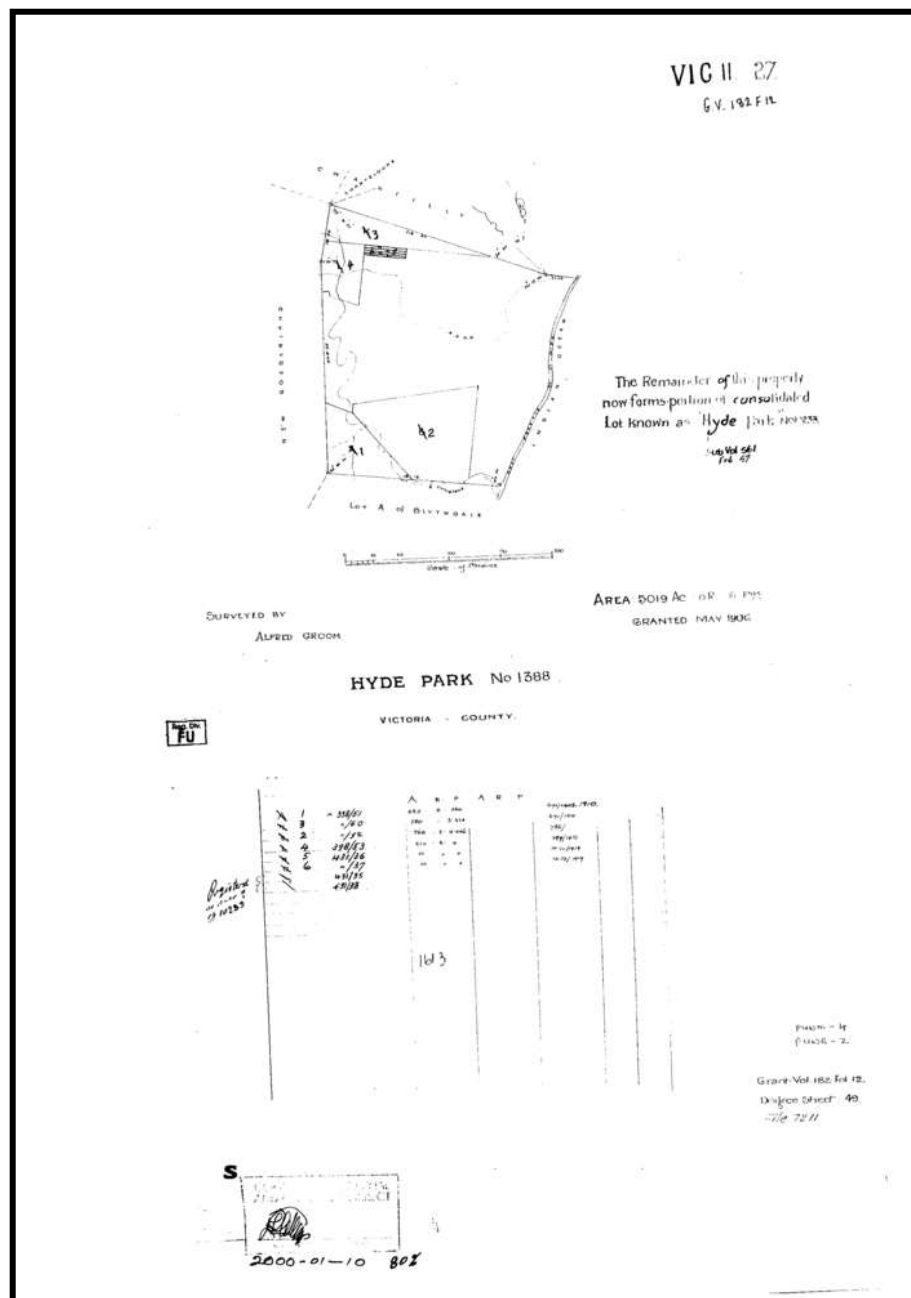


FIG. 6: STUDY AREA IN 1937

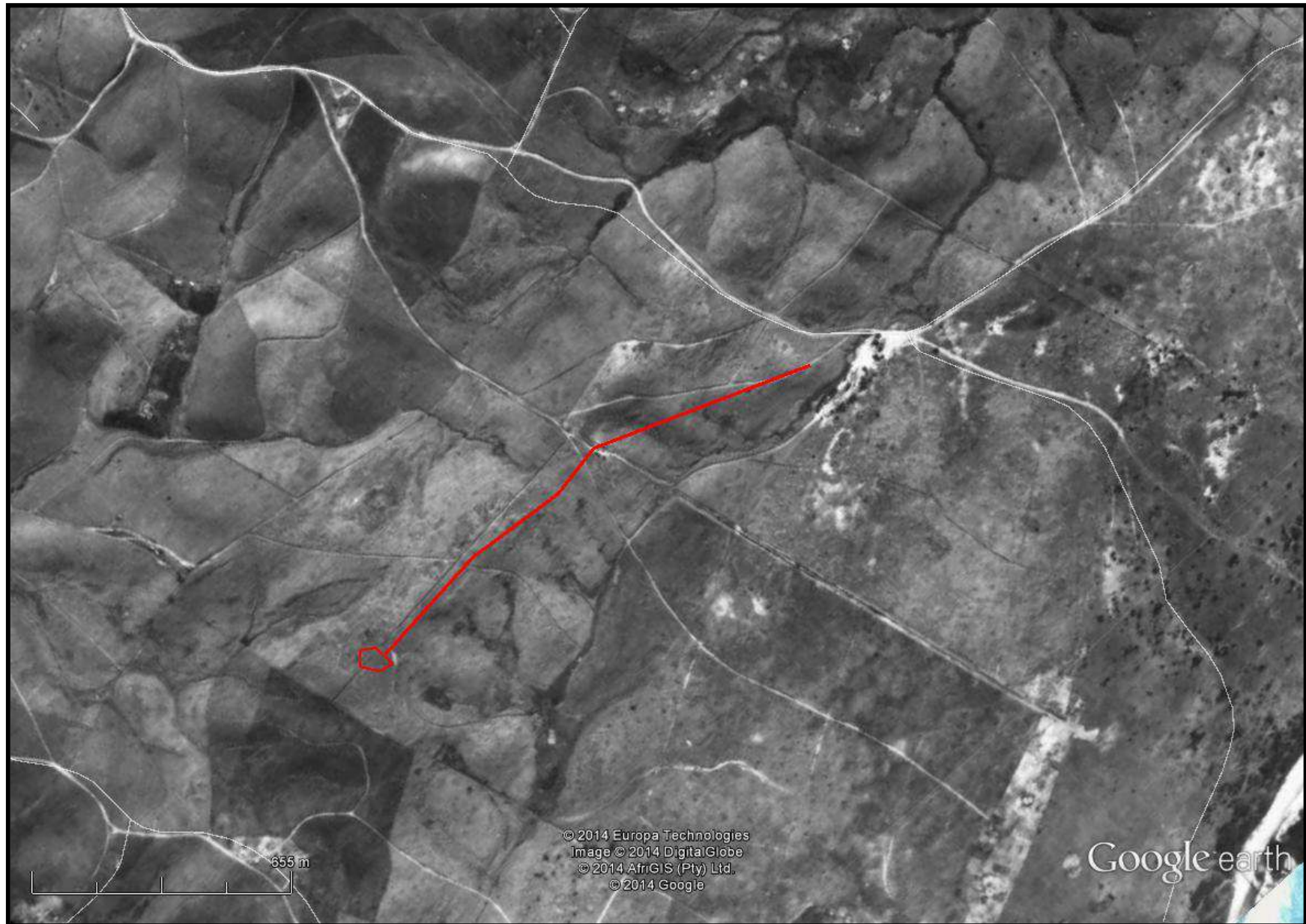
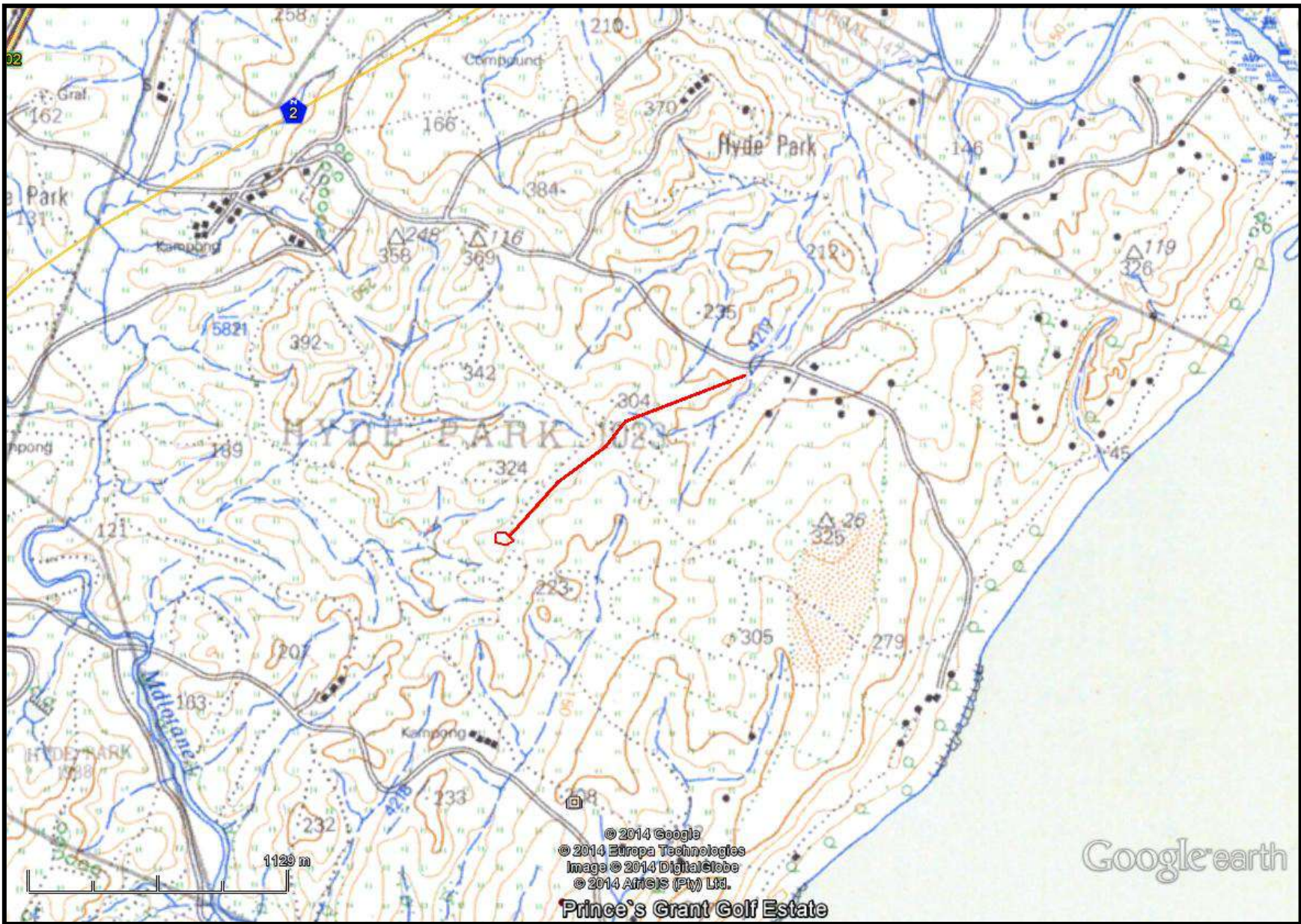


FIG. 7: STUDY AREA IN 1968



FIELD SURVEY

The field survey was undertaken in November 2014. The result of the survey are shown in figure 8 and tabled in Table 1. The sugar cane fields had been sprayed with a poison in two areas and thus I surveyed by driving along the route. Artefacts will still observed in this manner.

TABLE 1: RECORDED HERITAGE SITES IN THE STUDY AREA

NAME	LATITUDE	LONGITUDE	ALTITUDE (M)	DESCRIPTION	REQUIRES MITIGATION
HYP1	-29.322281000	31.381441000	65.6	Pottery scatter	No
HYP2	-29.325922000	31.374450000	97.5	Pottery scatter	No
HYP3	-29.328622000	31.371542000	92.7	Pottery scatter	No

FIG. 8: LOCATION OF RECORDED SITES ALONG OFFTAKE 5B



HYP01

HYP01 is located on a small hill overlooking the river to the east. The soil is shallow and has been repeatedly farmed for over 50 years, thus destroying any possible archaeological deposit. The site consists of an ephemeral scatter of pottery sherds and a few lower grinding stones (fig. 9). The sherds are thin-walled, undecorated and various shades of red-brown in colour. The sherds appear to date to the Late Iron Age, or Historical Period. The upper grinding stones are river pebbles that have been smoothed on at least one side. The site covers an area of ~200m x 60m. The pipeline will pass through the middle of the site.

Significance: The site is of low significance.

Mitigation: No further mitigation is required. A permit for the partial damage to the site will be required.

SAHRA Rating: 3C

HYP02

HYP02 is located on a small hill ~500m west-southwest of HYP01. This field had been recently treated with poisonous chemicals, and thus only the specific footprint was covered from the vehicle, as opposed to a survey of the entire hill. This is also the reason for no scale in the photographs. The soil is shallow and has been repeatedly farmed for over 50 years, thus destroying any possible archaeological deposit. The site consists of an ephemeral scatter of pottery sherds (fig. 10). The sherds are thin-walled, undecorated and various shades of red-brown in colour. The sherds appear to date to the Late Iron Age, or Historical Period. The site covers a length of ~300m. The pipeline will pass through the middle of the site.

Significance: The site is of low significance.

Mitigation: No further mitigation is required. A permit for the partial damage to the site will be required.

SAHRA Rating: 3C

FIG. 9: THE VIEW OF HYP01 AND RELATED ARTEFACTS



FIG. 10: THE VIEW OF HYP02 AND RELATED ARTEFACTS



HYP03

HYP03 is located on a small hill ~300m west-southwest of HYP01 (fig. 11). Parts of the field had been recently treated with poisonous chemicals, and thus only the parts of the footprint were covered from the vehicle, as opposed to a survey of the entire hill. This is representative of the rest of the hill. The soil is shallow and has been repeatedly farmed for over 50 years, thus destroying any possible archaeological deposit. The site consists of an ephemeral scatter of pottery sherds with a lower density than at HYP02. More sherds probably exist outside of the footprint. The sherds are thin-walled, undecorated and various shades of red-brown in colour. The sherds appear to date to the Late Iron Age, or Historical Period. The site covers an area of ~100m x 100m. The reservoir will be placed on the site.

Significance: The site is of low significance.

Mitigation: No further mitigation is required. A permit for the partial damage to the site will be required.

SAHRA Rating: 3C

FIG. 11: THE VIEW OF HYP03 AND LOCATION OF THE RESERVOIR



MANAGEMENT PLAN

All of the sites are of low significance due to the highly disturbed nature of the deposit. No further mitigation is required. There is always a possibility of human remains occurring on archaeological sites. These are difficult, if not impossible, to observe unless they are marked by cairns. Amafa KZN and a registered heritage practitioner need to be informed immediately, if any human remains are uncovered during construction activity.

All archaeological sites require a permit from Amafa KZN if they are to be damaged. This is required regardless of the intensity of the impact and the significance of the site. The client will need to obtain this permit before construction activity begins. This permit will not cover any human remains that could be uncovered by construction.

CONCLUSION

A heritage survey was undertaken for the proposed Offtake 5b potable water pipeline in November 2014. The line is located east-southeast of Stanger and ~2km west of the ocean, and ~1km north of Prince's Grant Gold Estate. The land has been under sugarcane cultivation for over 80 years and thus the shallow soils are highly disturbed.

The archaeological sites were noted during the survey. These sites consisted of small scatters of pottery sherds across the top of the hills. The sites are all of low significance and require no further mitigation. The client will require a permit to (partially) damage all of the sites.

APPENDIX A
ARCHAEOLOGICAL SITE RECORD FORM

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY:

Stone Age	ESA:		MSA		ESA		ISA	
Rock Art	Paintings		Engravings		Other			
Iron Age	EIA:		LIA?		IAI			
Historical	Historical Period:	?	Recent Past (last 60 yrs):					

Recorder's Site No.: HYP01, HYOP02, HYP03

Official Name: Hyde Park 10233

Local Name:

Map Sheet: 2931AD Stanger

GPS reading:

Altitude:

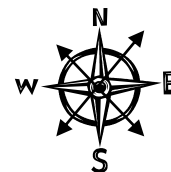
HYP1 -29.322281000 31.381441000 65.6

HYP2 -29.325922000 31.374450000 97.5

HYP3 -29.328622000 31.371542000 92.7

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION

From N2 drive towards Stanger. At the R74/R102 intersection, turn right and drive for 5.1km to the unpaved road. Turn right and take 1st left at 36m. Follow this unpaved road for 1.9km. At the intersection turn right for 1.2km. Take next right for 950m. Hyp01 is on 1st hill next to the river on the right hand side (driving towards ocean). HYP02 is located 665m to the west, and HYP03 is located 1.2km to the west.



SITE DESCRIPTION:

Type of Site: Open

Merits conservation: No

Threats: Yes

What threats: pipeline and reservoir

RECORDING:

Digital pictures #: Yes

Tracings :

Drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: 29 November 2014

Owner: Private

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

Three hills next to each other. Each hill has a small to ephemeral scatter of thin-walled, undecorated pottery sherds. These are probably LIA, but could be HP as well. The sites have upper grindingstones from local river pebbles. If there is a deposit it is very disturbed.