



# DESKTOP HERITAGE ASSESSMENT

**for the Proposed Isihlengeni Prospecting Right Application on the Farms Isihlengeni 689, Toovernaars Rust 518, Misty Valley 831, Demoina 830 and Weltevrede 540 between Vryheid and Nongoma in the KwaZulu-Natal Province**

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**Desktop Heritage Assessment for the Proposed Isihlengeni Prospecting Right Application on the Farms Isihlengeni 689, Toovernaars Rust 518, Misty Valley 831, Demoina 830 and Weltevrede 540 between Vryheid and Nongoma in the KwaZulu-Natal Province**

Project Ref: Isihlengeni PRA  
Report No: NE-2907251  
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I, Tobias Coetzee, declare that –

- I act as the independent specialist;
- I am conducting any work and activity relating to the proposed Isihlengeni Prospecting Right application in an objective manner, even if this results in views and findings that are not favourable to the client;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have the required expertise in conducting the specialist report and I will comply with legislation, regulations and any guidelines that have relevance to the proposed activity;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this declaration are true and correct.

  
T. Coetzee



## Executive Summary

Agri Civils Geo-Tech & Heritage was appointed by Niara Environmental Consultants (Pty) Ltd to undertake a Desktop Heritage Assessment for the proposed Isihlengeni Prospecting Right application for coal, pseudo-coal, and torbanite/oil shale on the Farms Isihlengeni 689, Toovernaars Rust 518, Misty Valley 831, Demoina 830 and Weltevrede 540 between Vryheid and Nongoma in the KwaZulu-Natal Province. The aim of this report is to contextualise the general study area in terms of heritage resources and will provide the developers with general information regarding potentially sensitive areas. This will provide insight into what to expect during a Phase 1 Heritage Impact Assessment and assist in identifying suitable prospecting locations.

The project area is considered sensitive from a heritage perspective due to the presence of multiple indicators of cultural and historical significance. Numerous potentially historical homesteads and rural settlements are situated across the landscape, some of which could be associated with both marked and unmarked burial sites.

Although portions of the area have been cultivated and may appear disturbed, such zones are often historically linked to settlement activity. Cultivated land can obscure subsurface heritage features, including graves, foundations, and other archaeological traces, thereby warranting careful assessment. The majority of the project area also seems to have been impacted by the establishment of commercial plantations, which may have altered the physical landscape but cannot be presumed to have eliminated heritage potential. These areas should still be evaluated for underlying archaeological or cultural resources, especially given their association with historical settlement patterns. In addition, the broader region may contain Stone Age sites, rock art, Later Iron Age settlements, and Anglo-Zulu War sites.

Based on historical topographical maps and aerial imagery, ninety-eight areas associated with potentially historical and contemporary infrastructure, as well as a grave site were identified. Buildings, structures, graves, as well as Stone Age and Iron Age sites, however, are not always indicated on topographical maps and are not necessarily visible on aerial imagery. Therefore, additional sites might exist within the demarcated prospecting area.

Contemporary satellite imagery indicates that 56 infrastructure areas appear to have been demolished, while intact infrastructure is present at 42 of the localities. The status of the identified grave site, however, is unknown. Under the KwaZulu-Natal Amafa and Research Institute Act (Act No. 05 of 2018), historical infrastructure older than 60 years is protected, while graves are protected by the Human Tissues Act (Act No. 65 of 1983), the Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925), and if older than 60 years, by the KwaZulu-Natal Amafa and Research Institute Act (Act No. 05 of 2018).



Since the proposed prospecting activities exceed 0.5 Ha, a Phase 1 Heritage Impact Assessment inclusive of a site inspection is recommended.

## List of Abbreviations

**AIA** – Archaeological Impact Assessment  
**CRM** – Cultural Resource Management  
**DMR** – Department of Mineral Resources and Energy  
**EA** – Environmental Authorisation  
**EAP** – Environmental Assessment Practitioner  
**EIA** – Environmental Impact Assessment  
**ESA** – Early Stone Age  
**GNR** – Government Notice Regulation  
**Ha** – Hectare  
**HIA** – Heritage Impact Assessment  
**km** – Kilometre  
**LIA** – Late Iron Age  
**LSA** – Later Stone Age  
**m** – Metre  
**MPRDA** – Mineral and Petroleum Resources Development Act  
**NEMA** – National Environmental Management Act  
**mamsl** – Metres Above Mean Sea Level  
**MSA** – Middle Stone Age  
**NHRA** – National Heritage Resources Act  
**PR** – Prospecting Right  
**PHRA** – Provincial Heritage Resources Authority  
**PRA** – Prospecting Right Application  
**SAHRA** – South African Heritage Resources Agency  
**SAHRIS** – South African Heritage Resources Information System  
**ZAR** – Zuid-Afrikaansche Republiek



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# 1. Project Background

## 1.1 Introduction

Niara Environmental Consultants (Pty) Ltd appointed Agri Civils Geo-Tech & Heritage to undertake a Desktop Heritage Assessment for the proposed Isihlengeni Prospecting Right application for coal, pseudo-coal, and torbanite/oil shale on the Farms Isihlengeni 689, Toovernaars Rust 518, Misty Valley 831, Demoina 830 and Weltevrede 540 in the Zululand District Municipality in KwaZulu-Natal. The study area is located roughly 38 km west of Nongoma and 50 km east of Vryheid (**Figure 1**). The purpose of this study is to contextualise the demarcated study area in order to determine the scope of heritage resources that might be encountered during the prospecting phase and subsequent heritage studies, as well as to provide recommendations for the safeguarding of heritage resources during prospecting. The aim of this report is to provide the developer with information regarding heritage resources in the vicinity of the study area based on results from previous studies, written historical information and historical topographical maps and aerial photographs.

In the following report, a broad overview of the proposed prospecting right application is provided, and the study area is contextualised in terms of heritage resources. The legislation section included serves as a guide towards the effective identification and protection of heritage resources and will apply to any such material encountered during the prospecting phase.





## 1.2 Legislation

In terms of the Kwa-Zulu Natal Heritage Act (Act 14 of 2018) cultural heritage resources are generally protected under Sections 37, 38, 39, 40 and 41 as follows:

### 37. General protection: Structures

(1) (a) 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 Institute having been obtained on written application to the Institute.

(b) Where the Institute does not grant approval, the Institute must consider special protection in terms of sections 44,45, 46, 47 and 49 of Chapter 9.

(2) The Institute may, by notice in the *Gazette*, exempt-

(a) a defined geographical area; or

(b) defined categories of sites within a defined geographical area, from the provisions of subsection (1) where the Institute is satisfied that heritage resources falling in the defined geographical area or category have been identified and are adequately protected in terms of sections 44, 45, 46, 47 and 49 of Chapter 9.

(3) A notice referred to in subsection (2) may, by notice in the *Gazette*, be amended or withdrawn by the Institute.

### 38. Graves of victims of conflict

No person may damage, alter, exhume, or remove from its original position-

(a) the grave of a victim of conflict;

(b) a cemetery made up of such graves; or

(c) any part of a cemetery containing such graves, without file prior written approval of the Institute having been obtained on written application to the Institute and in terms of the Regulations to this Act

### 39. General protection: Informal and private burial grounds

(1) No grave or burial ground older than 60 years, or deemed to be of heritage significance by a heritage authority –

(a) not otherwise protected by this Act; and



(b) not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, inundated, removed from its original position, or otherwise disturbed without the prior written approval of the Institute having been obtained on written application to the Institute.

(2) The Institute may only issue written approval once it is satisfied that –

(a) the applicant has provided evidence of efforts to consult with communities or descendants who may have an interest in the grave, using the guidelines and criteria for consultation set out in regulations; and

(b) the applicant and the relevant communities or descendants have reached agreement regarding the grave.

**40. Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites**

(1) 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 Institute having been obtained on written application to the Institute.

(2) 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 Institute without delay.

(3) The Institute 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 Institute to be inappropriate within 50 metres of a rock art site.

(4) 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 Institute having been obtained on written application to the Institute.

(5) 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 Institute having been obtained on written application to the Institute.



- (6) (a) 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, vests in the Provincial Government and the Institute is regarded as the custodian on behalf of the Provincial Government.
- (b) The Institute may establish and maintain a provincial repository or repositories for the safekeeping or display of –
- (i) archaeological objects;
  - (ii) palaeontological material;
  - (iii) ecofacts;
  - (iv) objects related to battlefield sites;
  - (v) material cultural artefacts; or
  - (vi) meteorites.
- (7) The Institute may, subject to such conditions as the Institute may determine, loan any object or material referred to in subsection (6) to a national or provincial museum or institution.
- (8) No person may, without the prior written approval of the Institute having been obtained on written application to the Institute, trade in, export or attempt to export from the Province-
- (a) any category of archaeological object;
  - (b) any palaeontological material;
  - (c) any ecofact;
  - (d) any object which may reasonably be regarded as having been recovered from a battlefield site;
  - (e) any material cultural artefact; or
  - (f) any meteorite.
- (9) (a) A person or institution in possession of an object or material, referred to in paragraphs (a) - (f) of subsection (8), must submit full particulars of such object or material, including such information as may be prescribed, to the Institute.
- (b) An object or material referred to in paragraph (a) must, subject to paragraph (c) and the directives of the Institute, remain under the control of the person or institution submitting the particulars thereof.
- (c) The ownership of any object or material referred to in paragraph (a) vests in the Provincial Government and the Institute is regarded as the custodian on behalf of the Provincial Government.



#### 41. Heritage resources management

- (1) Any person who intends to undertake a development categorised as –
- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
  - (b) the construction of a bridge or similar structure exceeding 50 m in length;
  - (c) any development or other activity which will change the character of a site –
    - (i) exceeding 5 000 m<sup>2</sup> in extent;
    - (ii) Involving three or more existing erven or subdivisions thereof;
    - (iii) involving three or more erven or divisions thereof, which have been consolidated within the past five years; or
    - (iv) the costs of which will exceed a sum set in terms of regulations;
  - (d) the rezoning of a site exceeding 10 000 m<sup>2</sup> in extent; or
  - (e) any other category of development provided for in regulations, must, at the very earliest stages of initiating such a development, notify the Institute and furnish it with details regarding the location, nature and extent of the proposed development.
- (2) The Institute must, within 14 days of receipt of a notification in terms of subsection(1) –
- (a) If there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report: Provided that such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the Institute with relevant qualifications and experience and professional standing in heritage resources management; or
  - (b) notify the person concerned that this section does not apply.
- (3) The Institute must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included –
- (a) the identification and mapping of all heritage resources in the area affected;
  - (b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in regulations;



- (c) an assessment of the impact of the development on such heritage resources;
  - (d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
  - (e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
  - (f) the consideration of alternatives, if heritage resources will be adversely affected by the proposed development; and
  - (g) plans for mitigation of any adverse effects during and after the completion of the proposed development.
- (4) The report must be considered timeously by the Institute which must, after consultation with the person proposing the development, decide –
- (a) whether or not the development may proceed;
  - (b) any limitations or conditions to be applied to the development;
  - (c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
  - (d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and
  - (e) whether the appointment of specialists is required as a condition of approval of the proposal.
- (5) The Institute must not make any decision under subsection (4), with respect to any development which impacts on a heritage resource protected at national level, unless it has consulted the heritage resources authority.
- (6) The applicant may appeal against the decision of the Institute to the responsible Member of the Executive Council, who –
- (a) must consider the views of both parties; and;



- (b) may, at his or her discretion –
- (i) appoint a committee to undertake an independent review of the impact assessment report and the decision of the Institute; and
  - (ii) consult the National Heritage Resources Agency; and
- (c) must uphold, amend or overturn such decision.
- (7) The provisions of this section do not apply to a development described in subsection (1) affecting any heritage resource formally protected by the National Heritage Resources Agency unless the Institute decides otherwise.
- (8) The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that –
- (a) the evaluation fulfils the requirements of the Institute in terms of subsection (3); and
  - (b) any comments and recommendations of the Institute with regard to such development have been taken into account prior to the granting of the consent
- (9) The Institute, with the approval of the responsible Member of the Executive Council, may, by notice in the Provincial Gazette, exempt from the requirements of this section any place specified in the notice.

Any person who has complied with the decision of the Institute in subsection (4) or of the responsible Member of the Executive Council in terms of subsection (6) or other requirements referred to in subsection (8), is exempted from compliance with all other protections in terms of this Part, but any existing heritage agreements made in terms of section 42 continue to apply.



## 2. Study Area and Project Description

### 2.1 Location & Physical Environment

The proposed Isihlengeni PRA area is situated on the land parcels listed in Table 1 and is illustrated in Figures 3 & 4.

**Table 1:** Land parcels & coordinates.

No	Farm Portion	Parent Farm	Map Reference (1:50 000)	Lat (y)	Lon (x)	Estimated Extent (Ha)
1	0/689	Isihlengeni 689	2731CD	-27.823376	31.329994	1465.3
2	0/540	Weltevrede 540	2731CC & CD	-27.893807	31.252893	1111.0
3	0/830	Demoina 830	2731CD	-27.870551	31.318214	468.7
4	RE/518	Toovernaars Rust 518	2731CD	-27.827874	31.285275	706.1
5	2/518	Toovernaars Rust 518	2731CD	-27.823576	31.301169	36.2
6	3/518	Toovernaars Rust 518	2731CD	-27.815602	31.290884	256.5
7	4/518	Toovernaars Rust 518	2731CD	-27.839593	31.274498	607.3
8	5/518	Toovernaars Rust 518	2731CD	-27.833266	31.301038	45.1
9	6/518	Toovernaars Rust 518	2731CD	-27.834130	31.276190	90.9
10	RE/831	Misty Valley 831	2731CC & CD	-27.785275	31.270345	1105.6
11	1/831	Misty Valley 831	2731CC & CD	-27.804124	31.263812	954.2
12	1/518	Toovernaars Rust 518	2731CD	-27.819939	31.268245	8.7
<b>Estimated PR area:</b>						<b>± 5257</b>
<b>Estimated Impact Area</b>						<b>± 15</b>

Nongoma is located roughly 38 km to the east of the proposed PR area, while Vryheid is located 50 km to the west, and Louwsburg 21 km to the north. The demarcated project area falls within the Abaqulusi Local Municipality and the Zululand District Municipality in the KwaZulu-Natal Province. The R618 Secondary Road runs in a NE-SW direction through the project area.

The project area falls within the summer rainfall region, and the average annual rainfall is roughly 804 mm. The average annual temperature is 17.4 °C. The average summer temperature is 21.1 °C, while the winter temperature averages 12.6 °C (Climate-data.org accessed 26/07/2025).

The project area falls within in the W22E, W31B and W31C quaternary catchments of the Pongola-Mtamvuna Water Management Area (WMA). Several perennial and non-perennial rivers intersect the project area.



When the surrounding environment is considered, the region is associated with plantations, crop cultivation, and grazing veldt for cattle/small stock. Access to the study area appears to be via local roads turning from the R618 Secondary Road intersecting the PR area (**Figures 3 & 4**). On a local scale, the demarcated project area appears to be characterised by plantations, and previously cultivated land. Shilengeni village is also located within the proposed PR area.



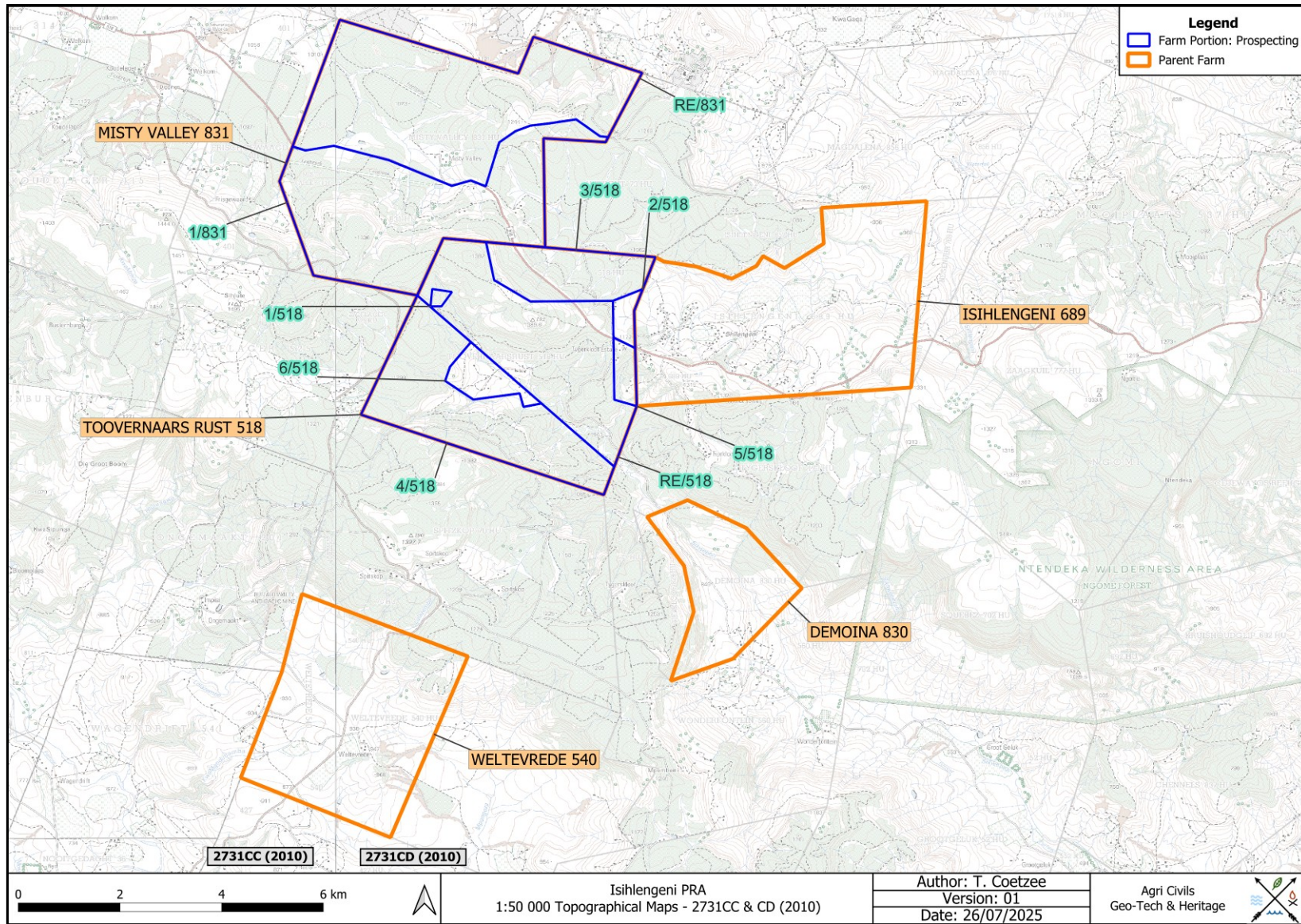


Figure 2: Segments of the 1:50 000 topographical maps 2731CC & CD (2010) indicating the study area.



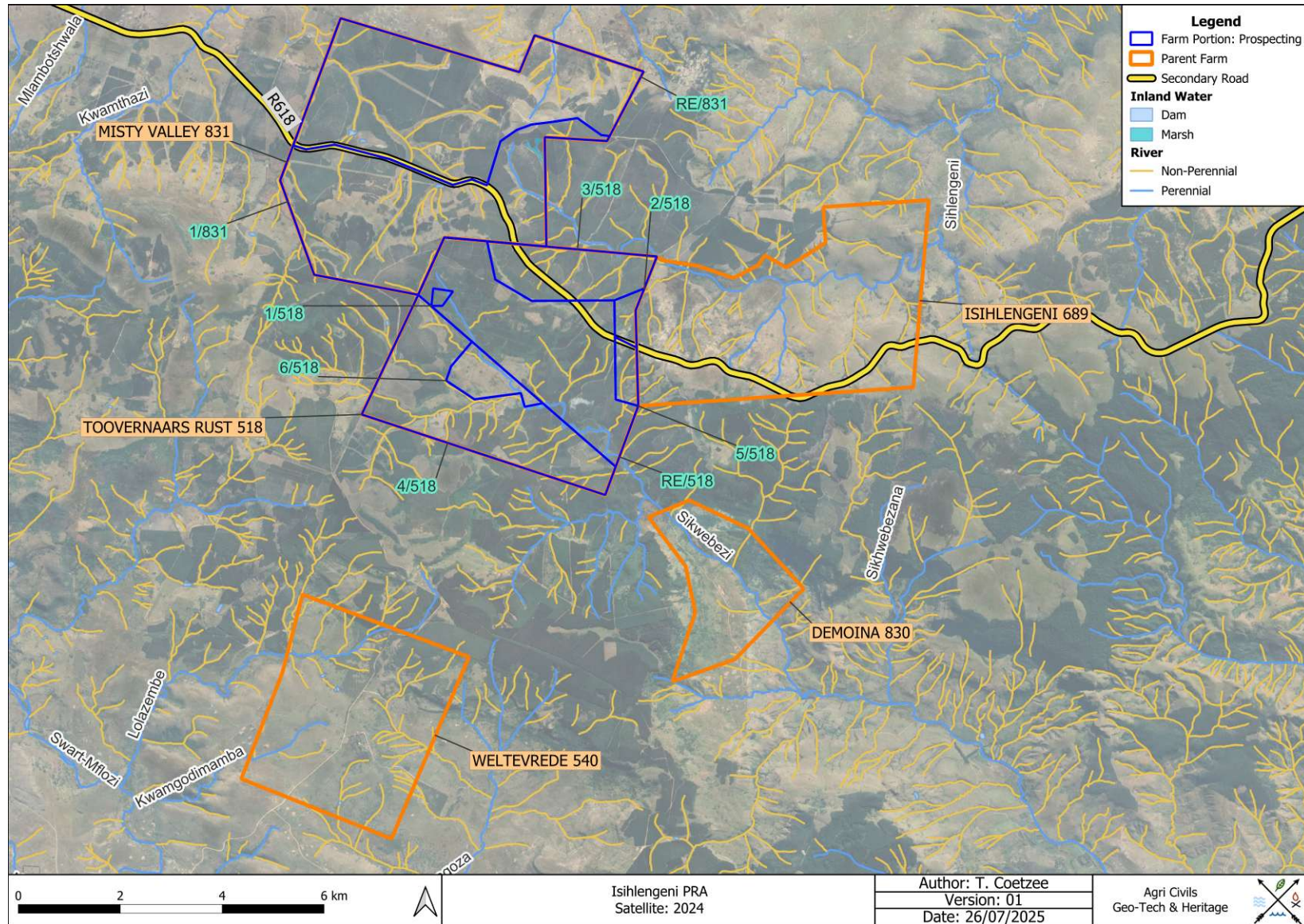


Figure 3: Proposed prospecting area portrayed on a 2024 satellite image.



## 2.2 Project Description

The following project description was provided by Niara Environmental Consultants (2025):

Niara Minerals (Pty) Ltd is applying for a Prospecting Right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), for the exploration of coal, pseudo-coal, and torbanite/oil shale. The application area spans various farm portions, namely the Remaining Extent of Isihlengi No. 689; the Remaining Extent of Demoina; Portion 1 of Weltevrede No. 540; Portion 1 of Misty Valley No. 831; and Portions 0, 3, 4, and 6 of Toovernaars Rust No. 518. The proposed prospecting area is located within the Abaqulusi Local Municipality, under the Amajuba District Municipality in the KwaZulu-Natal Province, covering a total area of approximately 15 hectares. The project area is situated approximately 3 km south of Ngenetseni and about 23 km south of Louwsburg.

Niara Minerals (Pty) Ltd has appointed Temvelo Consultants (Pty) Ltd as the independent Environmental Assessment Practitioner (EAP) to conduct the environmental authorisation process. The proposed prospecting activities will include both non-invasive and invasive techniques. The planned invasive activities will entail the drilling of boreholes to obtain sub-surface geological samples for analysis.

A total of approximately 10–15 boreholes are proposed, with each borehole expected to disturb a small surface footprint. The precise location of these boreholes will be determined following the completion of a desktop study, field mapping, and geophysical surveys. The boreholes will be strategically located within the designated 15-hectare prospecting area to ensure minimal environmental impact and to provide representative sampling across the application area.

The aim of drilling is to determine the presence, depth, thickness, and quality of the targeted mineral formations. Borehole drilling will be undertaken using rotary core drilling rigs and associated equipment, with support by small trucks and mobile water tanks. Drilling will be performed by a qualified drilling contractor in compliance with relevant safety and environmental standards.

The prospecting programme will be executed over four (4) phases within a total period of 60 months (five years). The prospecting right may be renewed for an additional three (3) years if the programme is not completed within the initial term.

The proposed prospecting project triggers activities listed in Listing Notice 1 of the National Environmental Management Act (NEMA), and therefore a Basic Assessment process in terms of Government Notice Regulation (GNR) 982 (as amended) is required. The environmental impacts of the proposed activities were assessed by identifying environmental aspects and conducting an environmental sensitivity analysis



to determine significant issues. The environmental impact assessment covers all project phases, including site establishment, drilling operations, rehabilitation, and closure. A structured impact rating system was applied to evaluate the potential environmental effects and the effectiveness of proposed mitigation measures.

### **Site Establishment**

- Limited clearing of vegetation will be conducted to create access routes and establish operational zones at borehole locations.
- A bulldozer or equivalent light machinery will be used to clear the minimum footprint necessary for drilling.
- Temporary facilities may include:
  - Equipment laydown areas
  - Portable sanitation units
  - Temporary water storage tanks
  - A mobile site office or control point if needed

### **Access Roads**

- Existing access roads will be used wherever possible to limit additional surface disturbance.
- Where new access routes are unavoidable, they will be sited based on environmental sensitivity assessments to avoid ecologically sensitive or protected areas.
- New roads, if required, will be constructed using best environmental practices, including erosion control, proper drainage, and minimal compaction

### **Borehole Drilling and Sampling**

- Approximately 10 to 15 boreholes will be drilled within the prospecting area.
- Each borehole site will require a disturbance footprint of approximately 25 m × 20 m (500 m<sup>2</sup>), including space for the rig, support vehicles, drill cuttings containment, and operational safety zones.
- The total disturbed area from boreholes is estimated at 0.5 to 0.75 hectares, with the remainder of the 15-hectare area allocated for access and support infrastructure.
- Boreholes may reach depths of up to 120 meters, depending on geological conditions.
- Drilling will utilise rotary core rigs to obtain continuous core samples.
- Borehole casing and grouting will be applied where necessary to maintain borehole integrity and prevent aquifer contamination.
- Water for drilling will be sourced locally or supplied via mobile tanks. Water use will be monitored



to avoid overuse or spillage.

- Drill cuttings and wastewater will be managed in lined pits or tanks and disposed of per the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).
- Borehole locations will be finalised after desktop and field studies to optimise resource targeting and minimise environmental impact.

### **Environmental Management and Rehabilitation**

- All prospecting activities will comply with the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998) and its associated Environmental Impact Assessment (EIA) Regulations.
- Environmental management will be guided by the following legal frameworks:
  - MPRDA, 2002 (Act No. 28 of 2002) – specifically Sections 38 and 41 requiring environmental protection and financial provision for rehabilitation.
  - NEMA: Waste Act, 2008 (Act No. 59 of 2008) – in relation to proper handling and disposal of drilling waste.
  - National Water Act, 1998 (Act No. 36 of 1998) – to safeguard water resources from pollution and over-extraction during operations.

Rehabilitation will include:

- Sealing and decommissioning of all boreholes, using appropriate grouting or capping methods to prevent contamination or future hazards.
- Removal of all equipment and temporary infrastructure, and reshaping of disturbed ground where necessary.
- Reapplication of topsoil, followed by revegetation using locally adapted, indigenous species to encourage ecological restoration.
- Erosion control measures to stabilise soil in disturbed areas.
- Progressive rehabilitation will be carried out throughout the project where feasible, rather than only at closure.
- A rehabilitation monitoring programme will be implemented, with corrective actions taken if rehabilitation targets are not achieved.



### 3. Methodology

Archaeological reconnaissance of the study area was conducted by means of inspecting historical aerial imagery and topographical maps (**Appendix A**), as well as consulting written sources and previous heritage studies conducted in the area. The historical topographical datasets dating to 1969, 1986, 1999, 2000, and 2010, as well as the historical aerial images dating to 2005, and satellite imagery dating 2024 proved useful in terms of providing an indication of potential heritage sites and past and present land uses associated with the project area. Ninety-eight areas associated with infrastructure, and one grave were identified within the demarcated boundary using these data sources (**Table 2; Figure 4**). It is important to note that the prefixes '2731CD-IGI-' and '2731CC-IGI-' are omitted when referring to the site names for brevity, but it is recorded in this format in **Tables 2** and **8**. Also, the demarcated sites represent areas that are, or were, associated with buildings and structures rather than isolated features. This provides an indication that the area was extensively settled and is likely sensitive from a heritage perspective. Based on contemporary satellite imagery, 56 of the areas appear to be no longer associated with infrastructure (**Figure 5**). The total area inspected was approximately 5257 Ha. Since heritage resources are often associated with water sources, such as perennial and non-perennial rivers/streams/pans, these water sources were buffered by 500 m, indicating a potentially sensitive area (**Figure 17**). The areas previously/currently associated with cultivated land were traced and plotted as shown on topographical maps and aerial imagery (**Figure 17**).



**Table 2: Potential Sites.**

Site No	Off. Site No	Type	Parent Farm	Farm Portion	Current Status	Age	Estimated Extent (Ha)	Lat (y)	Lon (x)
B01	2731CD-IGI-B01	Building/Structure	Isihlengeni 689	0/689	Demolished	Potentially Historical	19.0	-27.828449	31.342221
B02	2731CD-IGI-B02	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Potentially Historical	16.1	-27.834498	31.332266
B03	2731CD-IGI-B03	Building/Structure	Isihlengeni 689	0/689	Demolished	Potentially Historical	9.7	-27.820903	31.343928
B04	2731CD-IGI-B04	Building/Structure	Isihlengeni 689	0/689	Demolished	Potentially Historical	47.7	-27.824355	31.331648
B05	2731CD-IGI-B05	Building/Structure	Isihlengeni 689	0/689	Demolished	Potentially Historical	7.6	-27.815478	31.333574
B06	2731CD-IGI-B06	Building/Structure	Isihlengeni 689	0/689	Demolished	Potentially Historical	9.7	-27.811664	31.337999
B07	2731CD-IGI-B07	Building/Structure	Isihlengeni 689	0/689	Demolished	Potentially Historical	11.6	-27.820889	31.32577
B08	2731CD-IGI-B08	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Potentially Historical	40.9	-27.82675	31.317664
B09	2731CD-IGI-B09	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Potentially Historical	15.2	-27.820572	31.313504
B10	2731CD-IGI-B10	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Potentially Historical	3.0	-27.826299	31.308217
B11	2731CD-IGI-B11	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Potentially Historical	5.6	-27.816332	31.305837
B12	2731CD-IGI-B12	Building/Structure	Isihlengeni 689 & Toovernaars Rust 518	0/689_2/518	Infrastructure	Potentially Historical	53.7	-27.832213	31.304744
B13	2731CD-IGI-B13	Building/Structure	Toovernaars Rust 518	RE/518	Demolished	Potentially Historical	8.4	-27.826789	31.29652
B14	2731CD-IGI-B14	Building/Structure	Toovernaars Rust 518	3/518	Demolished	Potentially Historical	8.2	-27.814452	31.294926
B15	2731CD-IGI-B15	Building/Structure	Toovernaars Rust 518	3/518	Demolished	Potentially Historical	8.8	-27.813161	31.287794
B16	2731CD-IGI-B16	Building/Structure	Misty Valley 831	1/831	Infrastructure	Potentially	4.4	-27.804247	31.281953



Site No	Off. Site No	Type	Parent Farm	Farm Portion	Current Status	Age	Estimated Extent (Ha)	Lat (y)	Lon (x)
						Historical			
B17	2731CD-IGI-B17	Building/Structure	Misty Valley 831	RE/831	Infrastructure	Potentially Historical	24.5	-27.796242	31.269243
B18	2731CD-IGI-B18	Building/Structure	Misty Valley 831	RE/831	Demolished	Potentially Historical	2.3	-27.794753	31.259305
B19	2731CD-IGI-B19	Building/Structure	Misty Valley 831	1/831	Demolished	Potentially Historical	26.3	-27.807263	31.261955
B20	2731CD-IGI-B20	Building/Structure	Toovernaars Rust 518	RE/518	Demolished	Potentially Historical	29.6	-27.82366	31.271313
B21	2731CD-IGI-B21	Building/Structure	Toovernaars Rust 518	4/518	Demolished	Potentially Historical	3.9	-27.821969	31.264342
B22	2731CD-IGI-B22	Building/Structure	Toovernaars Rust 518	6/518	Demolished	Potentially Historical	24.0	-27.832017	31.274727
B23	2731CD-IGI-B23	Building/Structure	Toovernaars Rust 518	4/518	Demolished	Potentially Historical	12.9	-27.841474	31.271918
B24	2731CD-IGI-B24	Building/Structure	Toovernaars Rust 518	4/518	Demolished	Potentially Historical	2.9	-27.839932	31.278503
B25	2731CD-IGI-B25	Building/Structure	Toovernaars Rust 518	4/518	Demolished	Potentially Historical	8.6	-27.848476	31.290698
B26	2731CD-IGI-B26	Building/Structure	Toovernaars Rust 518	RE/518	Demolished	Potentially Historical	1.8	-27.846593	31.298952
B27	2731CD-IGI-B27	Building/Structure	Toovernaars Rust 518	RE/518	Demolished	Potentially Historical	6.3	-27.833363	31.289867
B28	2731CD-IGI-B28	Building/Structure	Toovernaars Rust 518	RE/518	Demolished	Potentially Historical	3.8	-27.829774	31.286493
B29	2731CD-IGI-B29	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Potentially Historical	4.1	-27.83184	31.319588
B30	2731CD-IGI-B30	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Potentially Historical	2.0	-27.831556	31.308275
B31	2731CD-IGI-B31	Building/Structure	Demoina 830	0/830	Demolished	Potentially Historical	1.8	-27.858026	31.312414
B32	2731CD-IGI-B32	Building/Structure	Demoina 830	0/830	Demolished	Potentially Historical	25.4	-27.860665	31.316145



Site No	Off. Site No	Type	Parent Farm	Farm Portion	Current Status	Age	Estimated Extent (Ha)	Lat (y)	Lon (x)
B33	2731CD-IGI-B33	Building/Structure	Demoina 830	0/830	Demolished	Potentially Historical	11.5	-27.867271	31.315316
B34	2731CD-IGI-B34	Building/Structure	Demoina 830	0/830	Demolished	Potentially Historical	5.9	-27.870968	31.330725
B35	2731CD-IGI-B35	Building/Structure	Demoina 830	0/830	Demolished	Potentially Historical	2.5	-27.873547	31.327085
B36	2731CD-IGI-B36	Building/Structure	Demoina 830	0/830	Demolished	Potentially Historical	1.9	-27.870148	31.323473
B37	2731CD-IGI-B37	Building/Structure	Demoina 830	0/830	Demolished	Potentially Historical	10.6	-27.873967	31.315964
B38	2731CD-IGI-B38	Building/Structure	Demoina 830	0/830	Infrastructure	Potentially Historical	16.8	-27.880027	31.317799
B39	2731CD-IGI-B39	Building/Structure	Weltevrede 540	0/540	Infrastructure	Potentially Historical	4.8	-27.899313	31.254915
B40	2731CD-IGI-B40	Building/Structure	Weltevrede 540	0/540	Infrastructure	Potentially Historical	9.1	-27.892071	31.252619
B41	2731CD-IGI-B41	Building/Structure	Weltevrede 540	0/540	Demolished	Potentially Historical	1.2	-27.885236	31.258148
B42	2731CC-IGI-B42	Building/Structure	Weltevrede 540	0/540	Demolished	Potentially Historical	18.3	-27.896118	31.241982
B43	2731CC-IGI-B43	Building/Structure	Weltevrede 540	0/540	Demolished	Potentially Historical	2.0	-27.90118	31.239751
B44	2731CD-IGI-B44	Building/Structure	Isihlengeni 689	0/689	Demolished	Potentially Historical	0.6	-27.838781	31.303449
B45	2731CD-IGI-B45	Building/Structure	Misty Valley 831	RE/831	Demolished	Contemporary	2.8	-27.796164	31.263429
B46	2731CD-IGI-B46	Building/Structure	Misty Valley 831	RE/831	Demolished	Contemporary	2.0	-27.7844	31.265922
B47	2731CD-IGI-B47	Building/Structure	Misty Valley 831	1/831	Demolished	Contemporary	22.2	-27.807702	31.283364
B48	2731CD-IGI-B48	Building/Structure	Toovernaars Rust 518	6/518	Demolished	Contemporary	7.5	-27.836678	31.274278
B49	2731CD-IGI-B49	Building/Structure	Isihlengeni 689	0/689	Demolished	Contemporary	3.7	-27.830932	31.327467
B50	2731CD-IGI-B50	Building/Structure	Isihlengeni 689	0/689	Demolished	Contemporary	11.9	-27.827763	31.324547
B51	2731CD-IGI-B51	Building/Structure	Isihlengeni 689	0/689	Demolished	Contemporary	3.0	-27.821781	31.322743



Site No	Off. Site No	Type	Parent Farm	Farm Portion	Current Status	Age	Estimated Extent (Ha)	Lat (y)	Lon (x)
B52	2731CD-IGI-B52	Building/Structure	Isihlengeni 689	0/689	Demolished	Contemporary	4.6	-27.818523	31.338125
B53	2731CD-IGI-B53	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	10.5	-27.823697	31.313619
B54	2731CD-IGI-B54	Building/Structure	Toovernaars Rust 518	2/518	Demolished	Contemporary	2.4	-27.821401	31.299221
B55	2731CD-IGI-B55	Building/Structure	Demoina 830	0/830	Demolished	Contemporary	3.0	-27.861778	31.320619
B56	2731CD-IGI-B56	Building/Structure	Demoina 830	0/830	Infrastructure	Contemporary	1.4	-27.86875	31.317943
B57	2731CD-IGI-B57	Building/Structure	Demoina 830	0/830	Infrastructure	Contemporary	7.3	-27.872134	31.318344
B58	2731CD-IGI-B58	Building/Structure	Demoina 830	0/830	Demolished	Contemporary	1.7	-27.883037	31.319341
B59	2731CD-IGI-B59	Building/Structure	Demoina 830	0/830	Demolished	Contemporary	4.1	-27.877338	31.317198
B60	2731CC-IGI-B60	Building/Structure	Weltevrede 540	0/540	Demolished	Contemporary	4.1	-27.905575	31.241009
B61	2731CC-IGI-B61	Building/Structure	Weltevrede 540	0/540	Demolished	Contemporary	0.8	-27.897154	31.240191
B62	2731CC-IGI-B62	Building/Structure	Weltevrede 540	0/540	Infrastructure	Contemporary	4.5	-27.899022	31.23687
B63	2731CC-IGI-B63	Building/Structure	Weltevrede 540	0/540	Demolished	Contemporary	3.5	-27.894878	31.237798
B64	2731CD-IGI-B64	Building/Structure	Weltevrede 540	0/540	Demolished	Contemporary	2.2	-27.896486	31.26684
B65	2731CD-IGI-B65	Building/Structure	Toovernaars Rust 518	4/518	Demolished	Contemporary	1.7	-27.849798	31.287252
B66	2731CD-IGI-B66	Building/Structure	Isihlengeni 689	0/689	Demolished	Contemporary	2.7	-27.824482	31.328154
B67	2731CD-IGI-B67	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	20.8	-27.822928	31.308135
B68	2731CD-IGI-B68	Building/Structure	Demoina 830	0/830	Infrastructure	Contemporary	14.1	-27.879319	31.322294
B69	2731CD-IGI-B69	Building/Structure	Toovernaars Rust 518	RE/518_6/518	Infrastructure	Contemporary	31.4	-27.834546	31.282211
B70	2731CD-IGI-B70	Building/Structure	Toovernaars Rust 518	6/518	Demolished	Contemporary	2.5	-27.83576	31.276956
B71	2731CD-IGI-B71	Building/Structure	Toovernaars Rust 518	2/518	Demolished	Contemporary	2.4	-27.836544	31.30161
B72	2731CD-IGI-B72	Building/Structure	Misty Valley 831	1/831	Infrastructure	Contemporary	12.9	-27.803184	31.273574
B73	2731CD-IGI-B73	Building/Structure	Isihlengeni 689	0/689	Demolished	Contemporary	1.9	-27.814219	31.307146
B74	2731CD-IGI-B74	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	2.7	-27.827694	31.30784
B75	2731CD-IGI-B75	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	2.3	-27.823112	31.311423
B76	2731CC-IGI-B76	Building/Structure	Weltevrede 540	0/540	Infrastructure	Contemporary	4.4	-27.898699	31.247191
B77	2731CD-IGI-B77	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	10.7	-27.834614	31.327423
B78	2731CD-IGI-B78	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	1.1	-27.83007	31.318826



Site No	Off. Site No	Type	Parent Farm	Farm Portion	Current Status	Age	Estimated Extent (Ha)	Lat (y)	Lon (x)
B79	2731CD-IGI-B79	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	11.4	-27.828701	31.310173
B80	2731CD-IGI-B80	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	1.8	-27.826276	31.30625
B81	2731CD-IGI-B81	Building/Structure	Isihlengeni 689	0/689	Demolished	Contemporary	1.9	-27.818121	31.304589
B82	2731CD-IGI-B82	Building/Structure	Toovernaars Rust 518	6/518	Demolished	Contemporary	4.4	-27.832453	31.278177
B83	2731CD-IGI-B83	Building/Structure	Toovernaars Rust 518	2/518	Infrastructure	Contemporary	3.4	-27.831059	31.299532
B84	2731CD-IGI-B84	Building/Structure	Misty Valley 831	RE/831	Demolished	Contemporary	0.9	-27.788766	31.284943
B85	2731CC-IGI-B85	Building/Structure	Weltevrede 540	0/540	Infrastructure	Contemporary	0.9	-27.89664	31.240948
B86	2731CD-IGI-B86	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	0.8	-27.83661	31.333
B87	2731CD-IGI-B87	Building/Structure	Isihlengeni 689	0/689	Demolished	Contemporary	0.9	-27.831772	31.322628
B88	2731CD-IGI-B88	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	0.5	-27.829203	31.306605
B89	2731CD-IGI-B89	Building/Structure	Misty Valley 831	RE/831	Infrastructure	Contemporary	1.3	-27.793715	31.25454
B90	2731CD-IGI-B90	Building/Structure	Misty Valley 831	RE/831	Infrastructure	Contemporary	1.5	-27.794354	31.266306
B91	2731CD-IGI-B91	Building/Structure	Toovernaars Rust 518	2/518	Infrastructure	Contemporary	3.7	-27.826122	31.300793
B92	2731CD-IGI-B92	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	4.5	-27.833789	31.335785
B93	2731CD-IGI-B93	Building/Structure	Isihlengeni 689	0/689	Infrastructure	Contemporary	0.7	-27.835909	31.333563
B94	2731CD-IGI-B94	Building/Structure	Demoina 830	0/830	Infrastructure	Contemporary	1.2	-27.881533	31.32032
B95	2731CD-IGI-B95	Building/Structure	Demoina 830	0/830	Infrastructure	Contemporary	2.5	-27.876513	31.319856
B96	2731CD-IGI-B96	Building/Structure	Demoina 830	0/830	Infrastructure	Contemporary	1.6	-27.872116	31.317002
B97	2731CD-IGI-B97	Building/Structure	Weltevrede 540	0/540	Infrastructure	Contemporary	0.8	-27.892031	31.259878
B98	2731CD-IGI-B98	Building/Structure	Weltevrede 540	0/540	Infrastructure	Contemporary	1.3	-27.894777	31.266572
B99	2731CC-IGI-B99	Grave	Misty Valley 831	RE/831	Unknown	Potentially Historical	6.0	-27.791522	31.244652



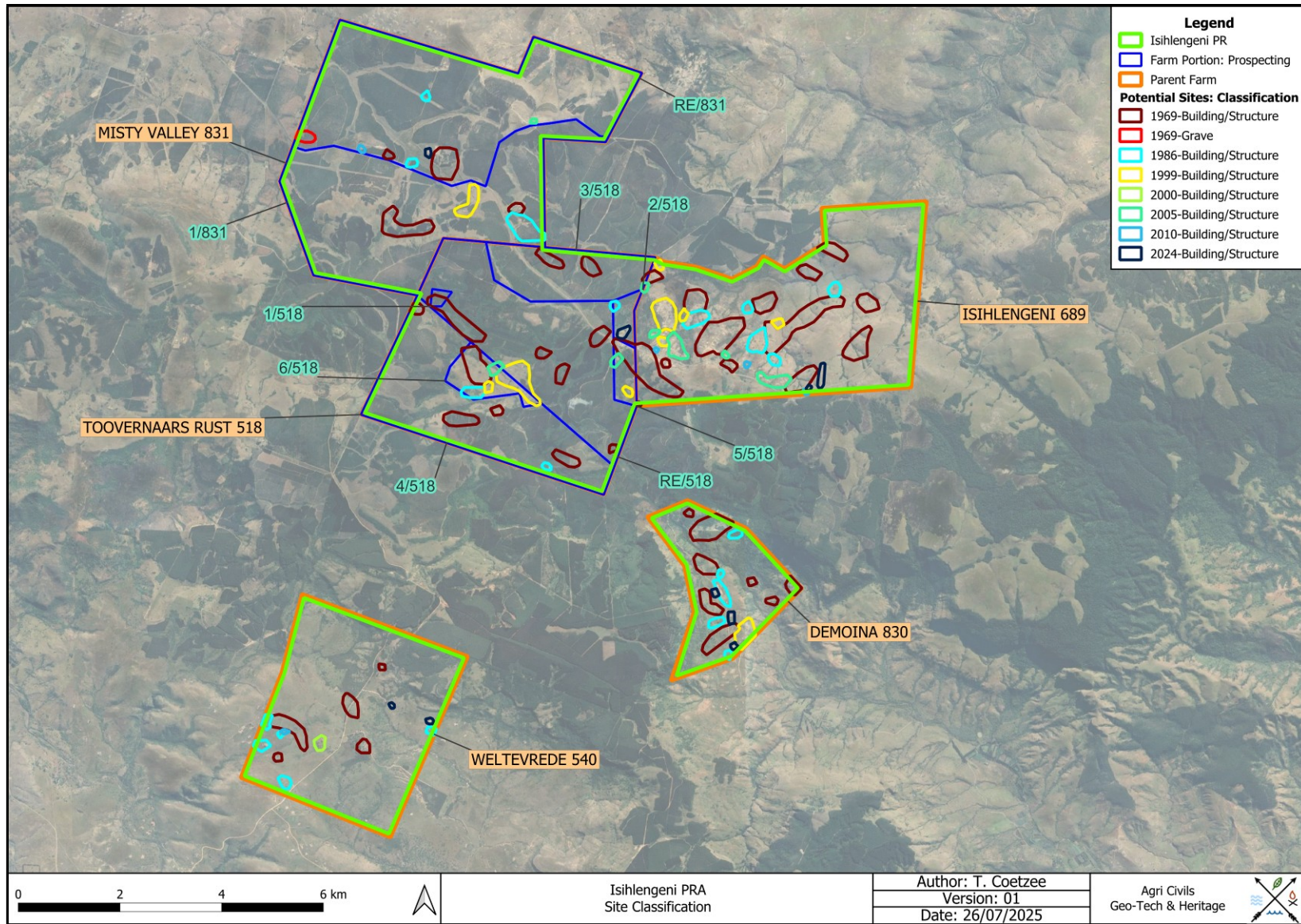


Figure 4: Site Classification portrayed on a 2024 satellite image.



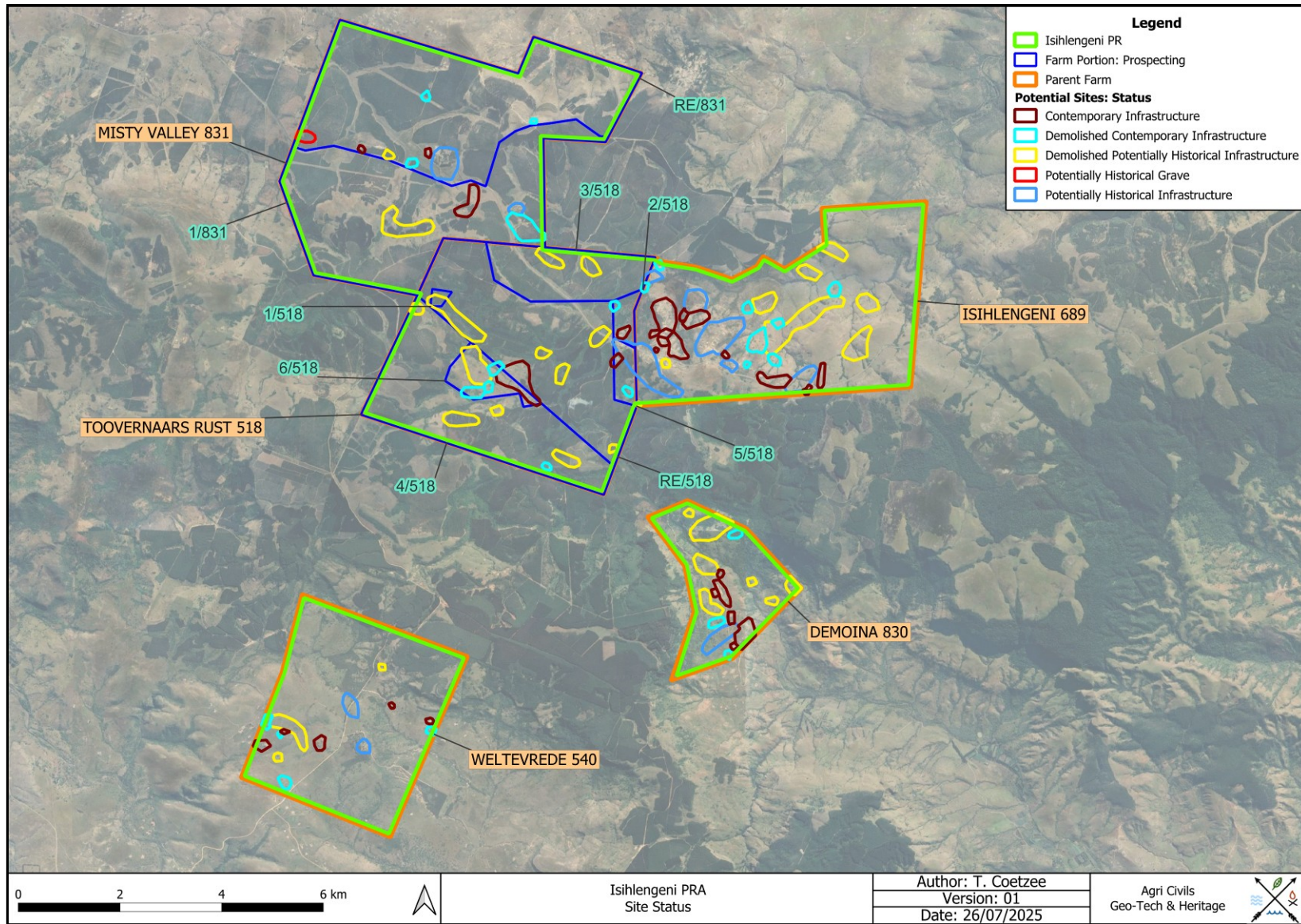


Figure 5: Site Status portrayed on a 2024 satellite image.



### 3.1 Assumptions & Limitations

Using historical topographical maps and historical aerial images for locating heritage resources have several shortcomings. Potential heritage remains, such as buildings, structures, and graves/cemeteries, are not always indicated on topographical maps and are often omitted between different publications. Historical aerial imagery, on the other hand, might have a poor image resolution that renders potential heritage sites invisible. Inaccuracies during the georeferencing process may also lead to some heritage sites not being plotted, as well as dense vegetation obscuring heritage sites. Due to the small size of some heritage sites, such as Stone Age sites, small Iron Age features, rock art sites and burials, such sites are rarely visible on aerial imagery and are generally only detected during pedestrian surveys.

It is also worth noting that the constrained timeline limited the scope of research.

## 4. Archaeological Background

Southern African archaeology is broadly divided into the Early, Middle and Later Stone Ages; Early, Middle and Later Iron Ages; and Historical or Colonial Periods. This section of the report provides a general background to archaeology in South Africa.

### 4.1 The Stone Age

The earliest stone tool industry, the Oldowan, was developed by early human ancestors which were the earliest members of the genus *Homo*, such as *Homo habilis*, around 2.6 million years ago. It comprises tools such as cobble cores and pebble choppers (Toth & Schick 2007). Archaeologists suggest these stone tools are the earliest direct evidence for culture in southern Africa (Clarke & Kuman 2000). The advent of culture indicates the advent of more cognitively modern hominins (Mitchell 2002: 56, 57).

The Acheulean industry completely replaced the Oldowan industry. The Acheulean industry was first developed by *Homo ergaster* between 1.8 to 1.65 million years ago and lasted until around 300 000 years ago. Archaeological evidence from this period is also found at Swartkrans, Kromdraai and Sterkfontein. The most typical tools of the ESA (Early Stone Age) are handaxes, cleavers, choppers and spheroids. Although hominins seemingly used handaxes often, scholars disagree about their use. There are no indications of hafting, and some artefacts are far too large for it. Hominins likely used choppers and scrapers for skinning and butchering scavenged animals and often obtained sharp ended sticks for digging up edible roots. Presumably, early humans used wooden spears as early as 5 million years ago to hunt small animals.

Middle Stone Age (MSA) artefacts started appearing about 250 000 years ago and replaced the larger Early Stone Age bifaces, handaxes and cleavers with smaller flake industries consisting of scrapers,



points and blades. These artefacts roughly fall in the 40-100 mm size range and were, in some cases, attached to handles, indicating a significant technical advance. The first *Homo sapiens* species also emerged during this period. Associated sites are Klasies River Mouth, Blombos Cave and Border Cave (Deacon & Deacon 1999).

Although the transition from the MSA to the Later Stone Age (LSA) did not occur simultaneously across the whole of southern Africa, the Later Stone Age ranges from about 20 000 to 2000 years ago. Stone tools from this period are generally smaller but were used to do the same job as those from previous periods; only in a different, more efficient way. The Later Stone Age is associated with: rock art, smaller stone tools (microliths), bows and arrows, bored stones, grooved stones, polished bone tools, earthenware pottery and beads. Examples of Later Stone Age sites are Nelson Bay Cave, Rose Cottage Cave and Boomplaas Cave (Deacon & Deacon 1999). These artefacts are often associated with rocky outcrops or water sources.

## 4.2 The Iron Age & Historical Period

The Early Iron Age marks the movement of farming communities into South Africa in the first millennium AD, or around 2500 years ago (Mitchell 2002:259, 260). These groups were agro-pastoralist communities that settled in the vicinity of water in order to provide subsistence for their cattle and crops. Archaeological evidence from Early Iron Age sites is mostly artefacts in the form of ceramic assemblages. The origins and archaeological identities of this period are largely based upon ceramic typologies. Some scholars classify Early Iron Age ceramic traditions into different “streams” or “trends” in pot types and decoration, which emerged over time in southern Africa. These “streams” are identified as the Kwaile Branch (east), the Nkope Branch (central) and the Kalundu Branch (west). Early Iron Age ceramics typically display features such as large and prominent inverted rims, large neck areas and fine elaborate decorations. This period continued until the end of the first millennium AD (Mitchell 2002; Huffman 2007). Some well-known Early Iron Age sites include the Lydenburg Heads in Mpumalanga, Happy Rest in the Limpopo Province, and Mzonjani in Kwa-Zulu Natal.

The Middle Iron Age roughly stretches from AD 900 to 1300 and marks the origins of the Zimbabwe culture. During this period cattle herding appeared to play an increasingly important role in society. However, it was proved that cattle remained an important source of wealth throughout the Iron Age. An important shift in the Iron Age of southern Africa took place in the Shashe-Limpopo basin during this period, namely the development of class distinction and sacred leadership. The Zimbabwe culture can be divided into three periods based on certain capitals. Mapungubwe, the first period, dates from AD 1220 to 1300, Great Zimbabwe from AD 1300 to 1450, and Khami from AD 1450 to 1820 (Huffman 2007: 361, 362).



The Late Iron Age (LIA) roughly dates from AD 1300 to 1840. It is generally accepted that Great Zimbabwe replaced Mapungubwe. Some characteristics include a greater focus on economic growth and the increased importance of trade. Specialisation in terms of natural resources also started to play a role, as can be seen from the distribution of iron slag which tend to occur only in certain localities compared to a wide distribution during earlier times. It was also during the Late Iron Age that different areas of South Africa were populated, such as the interior of KwaZulu Natal, the Free State, the Gauteng Highveld and the Transkei. Another characteristic is the increased use of stone as building material. Some artefacts associated with this period are knife-blades, hoes, adzes, awls, other metal objects as well as bone tools and grinding stones.

The Historical period mainly deals with Europe's discovery, settlement and impact on southern Africa. Some topics covered by the Historical period include Dutch settlement in the Western Cape, early mission stations, Voortrekker routes and the South African War. This time period also saw the compilation of early maps by missionaries, explorers, military personnel, etc.

#### **4.2.1 Study Area Archaeo-History**

##### **Vryheid**

Following the Anglo-Zulu War of 1879, the British fragmented Zululand into 13 states, hoping to reduce the Zulu to a minor tribal element. Rivalry and fighting, however, ensued between the 13 states. In 1884, heavy competition between Zibebu and Dinuzulu led to Dinuzulu enlisting the help of a group of European mercenaries in exchange for land (Bulpin 1986: 492-493). According to Eloff (1999: 246), all efforts at peace in Zululand were unsuccessful. The ZAR communicated this to the British government, who declared that it is was up to the ZAR to protect their own borders. However, the Pretoria-London Convention prohibited the ZAR from intervening in local matters beyond their borders. Therefore, farmers in the area decided to support Dinuzulu to end conflict in the region and gain land in the process. With the help of the mercenaries, Dinuzulu defeated Zibebu in the Battle of Ghost Mountain. About 800 applicants claimed to have supported Dinuzulu, who was unable to allocate land to all. With Britain's intervention the mercenaries had to be content with a grant of land in the northern part of the country. This area was declared the "New Republic" on 5 August 1884 with Vryheid as the capital. In 1887 the New Republic was absorbed into the South African Republic and after the Anglo-Boer War, Vryheid became part of Natal. In 1912 the town became a municipality.

##### **Nongoma**

Research conducted by Penner (1970), Hall (1980), Feely (1980) and Anderson (1988) revealed a rich and diverse archaeological record, especially in the Hluhluwe-Umfolozi Nature Reserve that is located approximately 58 km to the southeast of the proposed Isihlengeni PR area (Prins 2014).



The sites recorded in the Hluhluwe-Umfolozi Nature Reserve include Early, Middle and Later Stone Age sites, as well as rock art sites. The Six ESA sites were located mostly in dongas and close to water with little in-situ material. Fifty-nine MSA sites were also recorded in the reserve, the most of which are open-air sites occurring not within archaeological context. Thirty-five LSA sites were recorded as well. The majority of these sites occur in open-air context, while a few are associated with small shelters and caves. The eleven Zululand rock art sites that were recorded are not as well-known as the Drakensberg sites and differ in style. According to Prins (2014), these sites are likely to be older than the Drakensberg rock art sites.

Archaeological sites outside of the Hluhluwe-Umfolozi Nature Reserve include two ESA sites approximately 4 km southwest of Nongoma, a MSA site directly adjacent to Nongoma, and LSA sites in the greater Zululand, but not close to Nongoma. An Iron Age engraving has also been recorded in the greater area (Prins 2014).

According to Prins (2014), an initial wave of Early Iron Age people settled along the inland sand dunes around 1700 years ago. The sandy but humus rich soils would have ensured good crops. The pottery style characteristic of these early agro-pastoralists is known as Matola. These people exploited wild plant and animal resources of the forest and adjacent seashore. Communities likely consisted of small groups slash-and-burn cultivators.

Another wave of Iron Age people entered the area around 1500 years ago. The pottery styles associated with these people are classified as Msuluzi (AD 500 – 700), Ndondondwane (AD 700 – 800) and Ntshekane (AD 800 – 900). The archaeological sites dating to this period generally occur in the Tugela River Basin below the 1000 m contour (Prins 2014).

The development of the Zulu state of King Shaka in the early 1800's is also closely related to the Nongoma and Ulundi areas. The emaKhosini valley (Valley of the Kings), as well as the military capital of King Dingane, is located close to Ulundi. Some of the archaeological sites associated with Zwide, the Ndwandwe leader who initially opposed King Shaka, is located further to the north and closer to the study area (Prins 2014).

The general area is also known for historical sites dating to the Anglo-Zulu War of 1879. The majority of these sites are located closer to Ulundi. However, King Cetshwayo's Gqikazi settlement is located closer to Nongoma. The more recent colonial history of the area deals with early English ivory traders at Port Natal (Durban) around 1820, followed by the Voortrekkers moving into the area around 1834. A short-lived Boer republic, Natalia, was established to the south of the Tugela River. By 1845, however, Natal



became a British colony and in 1879, Zululand was invaded by British forces. The area was annexed soon after (Prins 2014).

#### 4.2.2 Battlefields

The Anglo-Zulu War's Battle of Hlobane took place on 28 March 1879 approximately 27 km to the northwest of the study area. Colonel Evelyn Wood's northern column was secured at Khambula near present day Vryheid. Wood was requested by Lord Chelmsford to provide a diversionary action to attract attention away from his relief column that was approaching Eshowe. Wood decided to raid the abaQulusi cattle on top of Hlobane Mountain. The summit of the mountain stretches approximately 7 km from east to west and is roughly 2 km wide in some places. In terms of access, routes exist at the eastern and western ends. The western end, however, is not suitable for horses and cattle (Von der Heyde 2013).

Wood's force consisted of one squadron of Imperial Mounted Infantry, eight other mounted units of mostly volunteer horsemen, 1000 African auxiliaries on foot and 200 Zulu warriors led by Chief Hamu. The plan was to send Buller's column up the eastern end and Lieutenant Colonel Cecil Russell's column up the western end. The two columns were to deal with the abaQulusi defenders and herd the cattle down the western end. Buller ascended the mountain's eastern side and despite some casualties, cleared the abaQulusi defenders from the eastern rim and proceeded to the western side. Meanwhile, Russell realised that the western side was not suitable for horses and cattle and that they would have to get the cattle down a different way. During this time, Wood was riding with his personal escort along the southern slopes and came across the Border Horse unit that got detached from Buller's column due to a misunderstanding. Buller ordered the Border Horse unit up the eastern end of Hlobane Mountain and followed with his escort, among them some of his personal friends: Translator Llewelyn Lloyd; chief staff officer Captain Ronald Campbell and Lieutenant Henry Lysons. During the ascent, both Lloyd and Campbell were killed by abaQulusi defenders hiding in caves (Von der Heyde 2013).

A Zulu army was approaching from the south to assist the abaQulusi. With Buller and Russell aware of this, the priority was to escape to Khambula. The Border Horse met with the forerunners of the Zulu army and abaQulusi while descending the eastern pass. A few made it to the plain below and some were killed as they fled to Khambula. Meanwhile, Buller's column desperately tried to descend the western side, but were met with abaQulusi resistance. Wood observed the retreat from a distance, while Russell claimed to have misunderstood his orders and was already close to Khambula and offered no support. Buller was to be awarded the Victoria Cross for his bravery. Apart from Isandlwana, this was Britain's most disastrous defeat at the hands of the Zulu (Von der Heyde 2013).



## 5. Sources of Information

Sources consulted include an inspection of historical aerial images and historical topographical maps, previous heritage studies conducted in the general area, and the South African Heritage Resources Information System (SAHRIS) database.

### 5.1 Historical Aerial Imagery and Topographical Maps

Historical topographical maps dating to 1969, 1986, 1999, 2000, and 2010, as well as historical aerial images dating to 2005, and 2024 satellite imagery (**Appendix A & Figure 4**) were used to determine the location and relative age of structures, buildings and features, as well as to establish historical land uses associated with the demarcated prospecting area (**Table 3**).

**Table 3** indicates the identified areas associated with infrastructure, the date of the topographical maps, aerial images and satellite imagery on which the infrastructure is visible, as well as the date range during which the infrastructure sites were constructed/observed and demolished.



**Table 3:** Site age & type identified on historical aerial images, topographical maps and satellite imagery.

Site No	1969 Topo	1986 Topo	1999 Topo	2000 Topo	2005 Aerial	2010 Topo	2024 Satellite	Constructed / Observed	Demolished
B01	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B02	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A
B03	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B04	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	None	<=1969	2010-2024
B05	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B06	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B07	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	None	<=1969	2010-2024
B08	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A
B09	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A
B10	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A
B11	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A
B12	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A
B13	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B14	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B15	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B16	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A



Site No	1969 Topo	1986 Topo	1999 Topo	2000 Topo	2005 Aerial	2010 Topo	2024 Satellite	Constructed / Observed	Demolished
B17	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A
B18	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B19	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B20	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B21	Building / Structure	None	None	N / A	None	None	None	<=1969	1969-1986
B22	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	None	<=1969	2010-2024
B23	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B24	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B25	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B26	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B27	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B28	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B29	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A
B30	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	N / A
B31	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B32	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B33	Building /	Building /	None	N / A	None	None	None	<=1969	1986-1999



Site No	1969 Topo	1986 Topo	1999 Topo	2000 Topo	2005 Aerial	2010 Topo	2024 Satellite	Constructed / Observed	Demolished
	Structure	Structure							
B34	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B35	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B36	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B37	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B38	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A
B39	Building / Structure	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	<=1969	N / A
B40	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	N / A
B41	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B42	Building / Structure	Building / Structure	N / A	None	None	None	None	<=1969	1986-2000
B43	Building / Structure	Building / Structure	N / A	None	None	None	None	<=1969	1986-2000
B44	Building / Structure	Building / Structure	None	N / A	None	None	None	<=1969	1986-1999
B45	None	Building / Structure	None	N / A	None	None	None	1969-1986	1986-1999
B46	None	Building / Structure	None	N / A	None	None	None	1969-1986	1986-1999
B47	None	Building / Structure	None	N / A	None	None	None	1969-1986	1986-1999
B48	None	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	None	1969-1986	2010-2024
B49	None	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	None	1969-1986	2010-2024



Site No	1969 Topo	1986 Topo	1999 Topo	2000 Topo	2005 Aerial	2010 Topo	2024 Satellite	Constructed / Observed	Demolished
B50	None	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	None	1969-1986	2010-2024
B51	None	Building / Structure	Building / Structure	N / A	Building / Structure	None	None	1969-1986	2005-2010
B52	None	Building / Structure	Building / Structure	N / A	Building / Structure	None	None	1969-1986	2005-2010
B53	None	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	1969-1986	N / A
B54	None	Building / Structure	Building / Structure	N / A	Building / Structure	Building / Structure	None	1969-1986	2010-2024
B55	None	Building / Structure	None	N / A	None	None	None	1969-1986	1986-1999
B56	None	Building / Structure	None	N / A	None	None	Building / Structure	1969-1986	N / A
B57	None	Building / Structure	None	N / A	None	None	Building / Structure	1969-1986	N / A
B58	None	Building / Structure	None	N / A	None	None	None	1969-1986	1986-1999
B59	None	Building / Structure	None	N / A	None	None	None	1969-1986	1986-1999
B60	None	Building / Structure	N / A	None	None	None	None	1969-1986	1986-2000
B61	None	Building / Structure	N / A	None	None	None	None	1969-1986	1986-2000
B62	None	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	Building / Structure	1969-1986	N / A
B63	None	Building / Structure	N / A	None	None	None	None	1969-1986	1986-2000
B64	None	Building / Structure	None	N / A	None	None	None	1969-1986	1986-1999
B65	None	Building / Structure	None	N / A	None	None	None	1969-1986	1986-1999
B66	None	None	Building /	N / A	Building /	None	None	1986-1999	2005-2010



Site No	1969 Topo	1986 Topo	1999 Topo	2000 Topo	2005 Aerial	2010 Topo	2024 Satellite	Constructed / Observed	Demolished
			Structure		Structure				
B67	None	None	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	1986-1999	N / A
B68	None	None	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	1986-1999	N / A
B69	None	None	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	1986-1999	N / A
B70	None	None	Building / Structure	N / A	Building / Structure	Building / Structure	None	1986-1999	2010-2024
B71	None	None	Building / Structure	N / A	Building / Structure	Building / Structure	None	1986-1999	2010-2024
B72	None	None	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	1986-1999	N / A
B73	None	None	Building / Structure	N / A	None	None	None	1986-1999	1999-2005
B74	None	None	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	1986-1999	N / A
B75	None	None	Building / Structure	N / A	Building / Structure	Building / Structure	Building / Structure	1986-1999	N / A
B76	None	None	N / A	Building / Structure	Building / Structure	Building / Structure	Building / Structure	1986-2000	N / A
B77	None	None	None	N / A	Building / Structure	Building / Structure	Building / Structure	1999-2005	N / A
B78	None	None	None	N / A	Building / Structure	Building / Structure	Building / Structure	1999-2005	N / A
B79	None	None	None	N / A	Building / Structure	Building / Structure	Building / Structure	1999-2005	N / A
B80	None	None	None	N / A	Building / Structure	Building / Structure	Building / Structure	1999-2005	N / A
B81	None	None	None	N / A	Building / Structure	Building / Structure	None	1999-2005	2010-2024
B82	None	None	None	N / A	Building / Structure	Building / Structure	None	1999-2005	2010-2024



Site No	1969 Topo	1986 Topo	1999 Topo	2000 Topo	2005 Aerial	2010 Topo	2024 Satellite	Constructed / Observed	Demolished
B83	None	None	None	N / A	Building / Structure	Building / Structure	Building / Structure	1999-2005	N / A
B84	None	None	None	N / A	Building / Structure	None	None	1999-2005	2005-2010
B85	None	None	N / A	Building / Structure	Building / Structure	Building / Structure	Building / Structure	2005-2010	N / A
B86	None	None	None	N / A	None	Building / Structure	Building / Structure	2005-2010	N / A
B87	None	None	None	N / A	None	Building / Structure	None	2005-2010	2010-2024
B88	None	None	None	N / A	None	Building / Structure	Building / Structure	2005-2010	N / A
B89	None	None	None	N / A	None	Building / Structure	Building / Structure	2005-2010	N / A
B90	None	None	None	N / A	None	None	Building / Structure	2010-2024	N / A
B91	None	None	None	N / A	None	None	Building / Structure	2010-2024	N / A
B92	None	None	None	N / A	None	None	Building / Structure	2010-2024	N / A
B93	None	None	None	N / A	None	None	Building / Structure	2010-2024	N / A
B94	None	None	None	N / A	None	None	Building / Structure	2010-2024	N / A
B95	None	None	None	N / A	None	None	Building / Structure	2010-2024	N / A
B96	None	None	None	N / A	None	None	Building / Structure	2010-2024	N / A
B97	None	None	None	N / A	None	None	Building / Structure	2010-2024	N / A
B98	None	None	None	N / A	None	None	Building / Structure	2010-2024	N / A
B99	Grave	Grave	N / A	None	Unknown	None	Unknown	<=1969	Unknown



## 5.2 Previous Heritage Studies

### Ward 15 Phenyane to Obazweni Gravel Road, Nongoma

A Heritage Impact Assessment (HIA) was conducted by Active Heritage (Prins 2014) for the proposed gravel road between Phenyane and Obazweni in Ward 15, Nongoma. The study recorded no heritage sites but noted that the general area is rich in archaeological and historical sites. The Phenyane to Obazweni Gravel Road is located approximately 24 km southeast of the proposed Isihlengeni PR area.

### Mbhekamuzi Pedestrian Bridge near Ulundi

A Heritage Impact Assessment was conducted by Active Heritage (Prins 2017) for the proposed Mbhekamuzi Pedestrian Bridge near Ulundi. The study recorded no heritage sites but noted that the general area is rich in archaeological and historical sites. The study area is located approximately 31 km southeast of the proposed Isihlengeni PR area.

### Usuthu Dam

A heritage survey for the proposed Usuthu Dam approximately 30 km to the southeast of the proposed Isihlengeni PR project area was conducted by Umlabo Archaeological Surveys and Heritage Management (Anderson 2018). The study did not record any archaeological sites and noted that the geological formations in the valley are not conducive for rock shelters and overhangs, except above the 400 m contours. However, several MSA and LSA stone tools in a secondary deposit were noted throughout the study area and at various contour lines (Anderson 2018).

## 5.3 SAHRIS Database

The databases containing the declared and graded heritage sites were exported from SAHRIS on 11/07/2025 and were plotted on the site map to determine the presence of previously recorded sites within the project area. Accordingly, no graded heritage sites intersect the demarcated study area, while the nearest declared heritage sites are built environment sites in Vryheid 50 km to the west.

## 5.4 Examples of Heritage Sites

Figures 6 – 16 are examples of heritage sites often encountered. Iron Age and Stone Age sites are frequently associated with water sources, rocky outcrops and hills and should be avoided by the proposed prospecting activities.



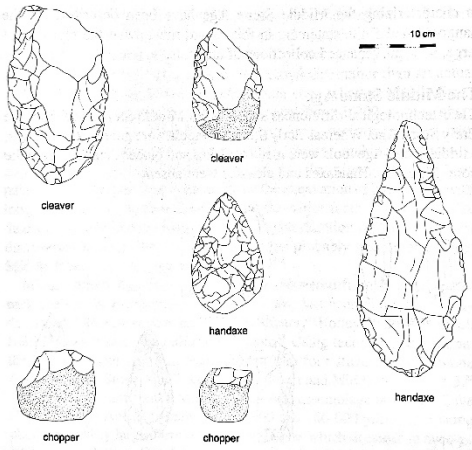


Figure 6: ESA artefacts (Mazel 1989).

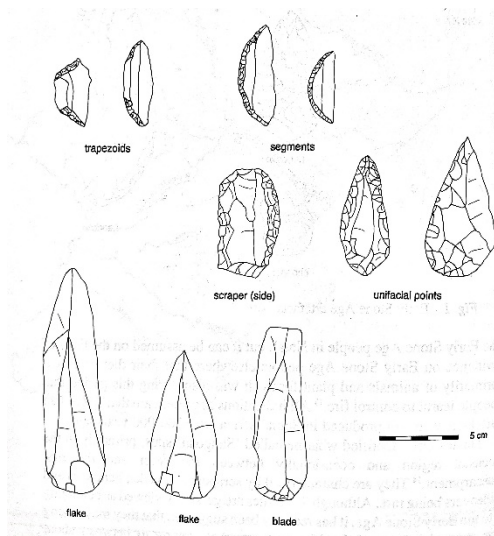


Figure 7: MSA artefacts (Mazel 1989).

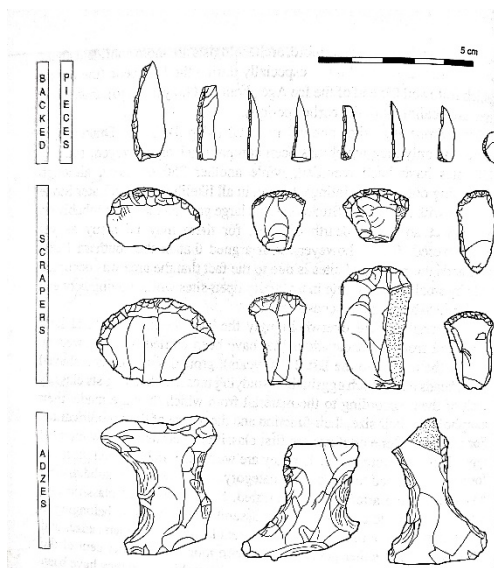


Figure 8: LSA artefacts (Mazel 1989).





**Figure 9:** Example of undecorated Iron Age potsherds.



**Figure 10:** Example of a decorated Iron Age potsherd.



**Figure 11:** Example of dilapidated linear walling.





**Figure 12:** Example of a stone-walled Iron Age site.



**Figure 13 :** Example of a broken lower grinding stone dating to the LIA.



**Figure 14:** Example of a dilapidated stone-walled site dating to the LIA.





**Figure 15:** Example of a historical building.



**Figure 16:** Example of a potential informal grave.

## **6. Archaeological and Historical Remains**

This section serves as an indication of heritage artefacts and sites associated with the study area based on previous research, as well as historical aerial images and topographical maps.

### **6.1 Stone Age Sites**

The archaeological survey conducted by Anderson (2018) recorded several MSA and LSA stone tools associated with a secondary context

Since Stone Age sites are often associated with water sources, Stone Age artefacts are more likely to be encountered within the 500 m river buffer zone of the project area



## 6.2 Iron Age Farmer Remains

Stone-walled sites are often detectable on satellite and aerial imagery. However, none were observed within the demarcated prospecting area. Although not visible on satellite imagery, the presence of such sites might be obscured by dense vegetation and poor preservation and are therefore more likely to be located in the undisturbed sections of the study area.

The heritage studies conducted by Prins (2014, 2017) and Anderson (2018) also did not record any Iron Age sites.

According to Huffman (2007) the following ceramics are associated with the general area:

- Nqabeni facies of the Blackburn Branch of the Urewe Tradition (AD 1700 to 1820).
- Blackburn facies of the Blackburn Branch of the Urewe Tradition (AD 1050 to 1820).

## 6.3 Historical Remains

Forty-four potentially historical infrastructure areas were identified on historical aerial images and topographical maps (B01 – B44) (**Table 4; Appendix A**). These sites were generally constructed before or during 1969 and could be older than 60 years. Based on contemporary satellite imagery, 31 sites have been demolished. Subsurface cultural remains, however, might be associated with the demolished sites and could therefore be sensitive from a heritage perspective.

The heritage studies conducted by Prins (2014, 2017) and Anderson (2018) did not record any historical sites.

**Table 4:** Historical & Potentially Historical Sites.

Site No	Dataset date & site type	Current Status	Age	Farm Portion	Lat (y)	Lon (x)
B01	1969-Building / Structure	Demolished	Potentially Historical	0/689	-27.828449	31.342221
B02	1969-Building / Structure	Infrastructure	Potentially Historical	0/689	-27.834498	31.332266
B03	1969-Building / Structure	Demolished	Potentially Historical	0/689	-27.820903	31.343928
B04	1969-Building / Structure	Demolished	Potentially Historical	0/689	-27.824355	31.331648
B05	1969-Building / Structure	Demolished	Potentially Historical	0/689	-27.815478	31.333574
B06	1969-Building / Structure	Demolished	Potentially Historical	0/689	-27.811664	31.337999
B07	1969-Building / Structure	Demolished	Potentially Historical	0/689	-27.820889	31.32577
B08	1969-Building	Infrastructure	Potentially	0/689	-27.82675	31.317664



Site No	Dataset date & site type	Current Status	Age	Farm Portion	Lat (y)	Lon (x)
	/ Structure		Historical			
B09	1969-Building / Structure	Infrastructure	Potentially Historical	0/689	-27.820572	31.313504
B10	1969-Building / Structure	Infrastructure	Potentially Historical	0/689	-27.826299	31.308217
B11	1969-Building / Structure	Infrastructure	Potentially Historical	0/689	-27.816332	31.305837
B12	1969-Building / Structure	Infrastructure	Potentially Historical	0/689_2/518	-27.832213	31.304744
B13	1969-Building / Structure	Demolished	Potentially Historical	RE/518	-27.826789	31.29652
B14	1969-Building / Structure	Demolished	Potentially Historical	3/518	-27.814452	31.294926
B15	1969-Building / Structure	Demolished	Potentially Historical	3/518	-27.813161	31.287794
B16	1969-Building / Structure	Infrastructure	Potentially Historical	1/831	-27.804247	31.281953
B17	1969-Building / Structure	Infrastructure	Potentially Historical	RE/831	-27.796242	31.269243
B18	1969-Building / Structure	Demolished	Potentially Historical	RE/831	-27.794753	31.259305
B19	1969-Building / Structure	Demolished	Potentially Historical	1/831	-27.807263	31.261955
B20	1969-Building / Structure	Demolished	Potentially Historical	RE/518	-27.82366	31.271313
B21	1969-Building / Structure	Demolished	Potentially Historical	4/518	-27.821969	31.264342
B22	1969-Building / Structure	Demolished	Potentially Historical	6/518	-27.832017	31.274727
B23	1969-Building / Structure	Demolished	Potentially Historical	4/518	-27.841474	31.271918
B24	1969-Building / Structure	Demolished	Potentially Historical	4/518	-27.839932	31.278503
B25	1969-Building / Structure	Demolished	Potentially Historical	4/518	-27.848476	31.290698
B26	1969-Building / Structure	Demolished	Potentially Historical	RE/518	-27.846593	31.298952
B27	1969-Building / Structure	Demolished	Potentially Historical	RE/518	-27.833363	31.289867
B28	1969-Building / Structure	Demolished	Potentially Historical	RE/518	-27.829774	31.286493
B29	1969-Building / Structure	Infrastructure	Potentially Historical	0/689	-27.83184	31.319588
B30	1969-Building / Structure	Infrastructure	Potentially Historical	0/689	-27.831556	31.308275
B31	1969-Building / Structure	Demolished	Potentially Historical	0/830	-27.858026	31.312414
B32	1969-Building / Structure	Demolished	Potentially Historical	0/830	-27.860665	31.316145
B33	1969-Building / Structure	Demolished	Potentially Historical	0/830	-27.867271	31.315316
B34	1969-Building	Demolished	Potentially	0/830	-27.870968	31.330725



Site No	Dataset date & site type	Current Status	Age	Farm Portion	Lat (y)	Lon (x)
	/ Structure		Historical			
B35	1969-Building / Structure	Demolished	Potentially Historical	0/830	-27.873547	31.327085
B36	1969-Building / Structure	Demolished	Potentially Historical	0/830	-27.870148	31.323473
B37	1969-Building / Structure	Demolished	Potentially Historical	0/830	-27.873967	31.315964
B38	1969-Building / Structure	Infrastructure	Potentially Historical	0/830	-27.880027	31.317799
B39	1969-Building / Structure	Infrastructure	Potentially Historical	0/540	-27.899313	31.254915
B40	1969-Building / Structure	Infrastructure	Potentially Historical	0/540	-27.892071	31.252619
B41	1969-Building / Structure	Demolished	Potentially Historical	0/540	-27.885236	31.258148
B42	1969-Building / Structure	Demolished	Potentially Historical	0/540	-27.896118	31.241982
B43	1969-Building / Structure	Demolished	Potentially Historical	0/540	-27.90118	31.239751
B44	1969-Building / Structure	Demolished	Potentially Historical	0/689	-27.838781	31.303449

## 6.4 Contemporary Remains

Fifty-four contemporary sites associated with infrastructure were identified on historical aerial images and topographical maps (B45 – B98) (Table 5; Appendix A). These sites were generally constructed between 1969 and 2024 and therefore do not exceed 60 years of age. Based on contemporary satellite imagery, 25 of these sites have been demolished. Significant cultural remains, however, might be associated with the building and infrastructure sites which could therefore be sensitive from a heritage perspective.

The heritage studies conducted by Prins (2014, 2017) and Anderson (2018) did not record any significant sites dating to contemporary times.

**Table 5:** Contemporary Sites.

Site No	Dataset date & site type	Current Status	Age	Farm Portion	Lat (y)	Lon (x)
B45	1986-Building / Structure	Demolished	Contemporary	RE/831	-27.796164	31.263429
B46	1986-Building / Structure	Demolished	Contemporary	RE/831	-27.784400	31.265922
B47	1986-Building / Structure	Demolished	Contemporary	1/831	-27.807702	31.283364
B48	1986-Building / Structure	Demolished	Contemporary	6/518	-27.836678	31.274278
B49	1986-Building / Structure	Demolished	Contemporary	0/689	-27.830932	31.327467



Site No	Dataset date & site type	Current Status	Age	Farm Portion	Lat (y)	Lon (x)
B50	1986-Building / Structure	Demolished	Contemporary	0/689	-27.827763	31.324547
B51	1986-Building / Structure	Demolished	Contemporary	0/689	-27.821781	31.322743
B52	1986-Building / Structure	Demolished	Contemporary	0/689	-27.818523	31.338125
B53	1986-Building / Structure	Infrastructure	Contemporary	0/689	-27.823697	31.313619
B54	1986-Building / Structure	Demolished	Contemporary	2/518	-27.821401	31.299221
B55	1986-Building / Structure	Demolished	Contemporary	0/830	-27.861778	31.320619
B56	1986-Building / Structure	Infrastructure	Contemporary	0/830	-27.868750	31.317943
B57	1986-Building / Structure	Infrastructure	Contemporary	0/830	-27.872134	31.318344
B58	1986-Building / Structure	Demolished	Contemporary	0/830	-27.883037	31.319341
B59	1986-Building / Structure	Demolished	Contemporary	0/830	-27.877338	31.317198
B60	1986-Building / Structure	Demolished	Contemporary	0/540	-27.905575	31.241009
B61	1986-Building / Structure	Demolished	Contemporary	0/540	-27.897154	31.240191
B62	1986-Building / Structure	Infrastructure	Contemporary	0/540	-27.899022	31.236870
B63	1986-Building / Structure	Demolished	Contemporary	0/540	-27.894878	31.237798
B64	1986-Building / Structure	Demolished	Contemporary	0/540	-27.896486	31.266840
B65	1986-Building / Structure	Demolished	Contemporary	4/518	-27.849798	31.287252
B66	1999-Building / Structure	Demolished	Contemporary	0/689	-27.824482	31.328154
B67	1999-Building / Structure	Infrastructure	Contemporary	0/689	-27.822928	31.308135
B68	1999-Building / Structure	Infrastructure	Contemporary	0/830	-27.879319	31.322294
B69	1999-Building / Structure	Infrastructure	Contemporary	RE/518_6/518	-27.834546	31.282211
B70	1999-Building / Structure	Demolished	Contemporary	6/518	-27.835760	31.276956
B71	1999-Building / Structure	Demolished	Contemporary	2/518	-27.836544	31.301610
B72	1999-Building / Structure	Infrastructure	Contemporary	1/831	-27.803184	31.273574
B73	1999-Building / Structure	Demolished	Contemporary	0/689	-27.814219	31.307146
B74	1999-Building / Structure	Infrastructure	Contemporary	0/689	-27.827694	31.307840
B75	1999-Building / Structure	Infrastructure	Contemporary	0/689	-27.823112	31.311423



Site No	Dataset date & site type	Current Status	Age	Farm Portion	Lat (y)	Lon (x)
B76	2000-Building / Structure	Infrastructure	Contemporary	0/540	-27.898699	31.247191
B77	2005-Building / Structure	Infrastructure	Contemporary	0/689	-27.834614	31.327423
B78	2005-Building / Structure	Infrastructure	Contemporary	0/689	-27.830070	31.318826
B79	2005-Building / Structure	Infrastructure	Contemporary	0/689	-27.828701	31.310173
B80	2005-Building / Structure	Infrastructure	Contemporary	0/689	-27.826276	31.306250
B81	2005-Building / Structure	Demolished	Contemporary	0/689	-27.818121	31.304589
B82	2005-Building / Structure	Demolished	Contemporary	6/518	-27.832453	31.278177
B83	2005-Building / Structure	Infrastructure	Contemporary	2/518	-27.831059	31.299532
B84	2005-Building / Structure	Demolished	Contemporary	RE/831	-27.788766	31.284943
B85	2010-Building / Structure	Infrastructure	Contemporary	0/540	-27.896640	31.240948
B86	2010-Building / Structure	Infrastructure	Contemporary	0/689	-27.836610	31.333000
B87	2010-Building / Structure	Demolished	Contemporary	0/689	-27.831772	31.322628
B88	2010-Building / Structure	Infrastructure	Contemporary	0/689	-27.829203	31.306605
B89	2010-Building / Structure	Infrastructure	Contemporary	RE/831	-27.793715	31.254540
B90	2024-Building / Structure	Infrastructure	Contemporary	RE/831	-27.794354	31.266306
B91	2024-Building / Structure	Infrastructure	Contemporary	2/518	-27.826122	31.300793
B92	2024-Building / Structure	Infrastructure	Contemporary	0/689	-27.833789	31.335785
B93	2024-Building / Structure	Infrastructure	Contemporary	0/689	-27.835909	31.333563
B94	2024-Building / Structure	Infrastructure	Contemporary	0/830	-27.881533	31.320320
B95	2024-Building / Structure	Infrastructure	Contemporary	0/830	-27.876513	31.319856
B96	2024-Building / Structure	Infrastructure	Contemporary	0/830	-27.872116	31.317002
B97	2024-Building / Structure	Infrastructure	Contemporary	0/540	-27.892031	31.259878
B98	2024-Building / Structure	Infrastructure	Contemporary	0/540	-27.894777	31.266572



## 6.5 Grave / Burial Sites

One graves site (B99) was identified in the 1969 topographical map (Table 6 & Appendix A: Figure 18). However, such sites are rarely visible on aerial imagery and are not always indicated on topographical maps. Such sites are often associated with historical homesteads and settlements and typically occur in cultivated areas that present as disturbances on aerial or satellite imagery. The possibility, therefore, exists that additional graves/cemeteries may be located within the project area.

The heritage studies conducted by Prins (2014, 2017) and Anderson (2018) did not record any burial sites.

**Table 6:** Grave Sites.

Site No	Dataset date & site type	Current Status	Age	Farm Portion	Lat (y)	Lon (x)
B99	1969-Grave	Unknown	Potentially Historical	RE/831	-27.791522	31.244652

## 7. Evaluation

The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 37 of the KwaZulu-Natal Amafa and Research Institute Act (Act No. 05 of 2018), while other historical and cultural significant sites, places, and features, are generally determined by community preferences.

A fundamental aspect in the conservation of a heritage resource relates to whether the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. There are many aspects that must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and if appropriate mitigated in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed.



## 7.1 Field Ratings

All sites should include a field rating in order to comply with section 38 of the National Heritage Resources Act (Act No. 25 of 1999). The field ratings and classifications in this report are prescribed by SAHRA.

**Table 7:** Prescribed Field Ratings.

Rating	Field Rating/Grade	Significance	Recommendation
National	Grade 1		National site
Provincial	Grade 2		Provincial site
Local	Grade 3 A	High	Mitigation not advised
Local	Grade 3 B	High	Part of site should be retained
General protection A	4 A	High/Medium	Mitigate site
General Protection B	4 B	Medium	Record site
General Protection C	4 C	Low	No recording necessary

\* These site ratings can only be assigned following a Phase 1 HIA.

## 8. Statement of Significance & Recommendations

### 8.1 Statement of Significance

#### The study area: The proposed Isihlengeni PRA

The general region is associated with a rich and diverse archaeological record inclusive of ESA, MSA, LSA, rock art, Iron Age and historical sites. Since heritage sites, such as burial sites, are not always clearly identifiable due to disturbed/removed surface features, care must be exercised when prospecting.

**Figure 17** indicates a 500 m buffer area around perennial and non-perennial rivers/streams, as well as potential sites identified within the demarcated PR area (**Table 8**). The 500 m buffer area is considered to be potentially sensitive from a heritage perspective since heritage sites are often located within this area. The majority of the study area falls within this zone. Areas previously/currently associated with cultivated land are indicated as well. Although these areas are generally considered to be less sensitive from a heritage perspective due to the areas being disturbed, the cultivated sections in the project area appear to be associated with homesteads which could indicate the presence of heritage resources.

The identified areas are, or were, associated with potentially historical and contemporary infrastructure, some of which may exceed 60 years in age and therefore qualify for protection under heritage legislation. Due to the high number of settlements, the project area is considered to be sensitive from a heritage perspective and is likely to be associated with sites protected under the KwaZulu-Natal Amafa and Research Institute Act (Act No. 05 of 2018).



Also, all graves are considered to be significant and sensitive from a heritage perspective and are protected by the Human Tissues Act (Act No. 65 of 1983), the Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925), and if older than 60 years, by the KwaZulu-Natal Amafa and Research Institute Act (Act No. 05 of 2018).



**Table 8: Sensitive and Potentially Sensitive Sites.**

Site No	Type	Farm Portion	Lat (y)	Lon (x)	Current Status	Age	Sensitivity
2731CD-IGI-B01	Building/Structure	0/689	-27.828449	31.342221	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B02	Building/Structure	0/689	-27.834498	31.332266	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B03	Building/Structure	0/689	-27.820903	31.343928	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B04	Building/Structure	0/689	-27.824355	31.331648	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B05	Building/Structure	0/689	-27.815478	31.333574	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B06	Building/Structure	0/689	-27.811664	31.337999	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B07	Building/Structure	0/689	-27.820889	31.32577	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B08	Building/Structure	0/689	-27.82675	31.317664	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B09	Building/Structure	0/689	-27.820572	31.313504	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B10	Building/Structure	0/689	-27.826299	31.308217	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B11	Building/Structure	0/689	-27.816332	31.305837	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B12	Building/Structure	0/689_2/518	-27.832213	31.304744	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B13	Building/Structure	RE/518	-27.826789	31.29652	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B14	Building/Structure	3/518	-27.814452	31.294926	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B15	Building/Structure	3/518	-27.813161	31.287794	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B16	Building/Structure	1/831	-27.804247	31.281953	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B17	Building/Structure	RE/831	-27.796242	31.269243	Infrastructure	Potentially	Potentially Sensitive



Site No	Type	Farm Portion	Lat (y)	Lon (x)	Current Status	Age	Sensitivity
						Historical	
2731CD-IGI-B18	Building/Structure	RE/831	-27.794753	31.259305	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B19	Building/Structure	1/831	-27.807263	31.261955	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B20	Building/Structure	RE/518	-27.82366	31.271313	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B21	Building/Structure	4/518	-27.821969	31.264342	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B22	Building/Structure	6/518	-27.832017	31.274727	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B23	Building/Structure	4/518	-27.841474	31.271918	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B24	Building/Structure	4/518	-27.839932	31.278503	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B25	Building/Structure	4/518	-27.848476	31.290698	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B26	Building/Structure	RE/518	-27.846593	31.298952	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B27	Building/Structure	RE/518	-27.833363	31.289867	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B28	Building/Structure	RE/518	-27.829774	31.286493	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B29	Building/Structure	0/689	-27.83184	31.319588	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B30	Building/Structure	0/689	-27.831556	31.308275	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B31	Building/Structure	0/830	-27.858026	31.312414	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B32	Building/Structure	0/830	-27.860665	31.316145	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B33	Building/Structure	0/830	-27.867271	31.315316	Demolished	Potentially Historical	Potentially Sensitive



Site No	Type	Farm Portion	Lat (y)	Lon (x)	Current Status	Age	Sensitivity
2731CD-IGI-B34	Building/Structure	0/830	-27.870968	31.330725	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B35	Building/Structure	0/830	-27.873547	31.327085	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B36	Building/Structure	0/830	-27.870148	31.323473	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B37	Building/Structure	0/830	-27.873967	31.315964	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B38	Building/Structure	0/830	-27.880027	31.317799	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B39	Building/Structure	0/540	-27.899313	31.254915	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B40	Building/Structure	0/540	-27.892071	31.252619	Infrastructure	Potentially Historical	Potentially Sensitive
2731CD-IGI-B41	Building/Structure	0/540	-27.885236	31.258148	Demolished	Potentially Historical	Potentially Sensitive
2731CC-IGI-B42	Building/Structure	0/540	-27.896118	31.241982	Demolished	Potentially Historical	Potentially Sensitive
2731CC-IGI-B43	Building/Structure	0/540	-27.90118	31.239751	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B44	Building/Structure	0/689	-27.838781	31.303449	Demolished	Potentially Historical	Potentially Sensitive
2731CD-IGI-B45	Building/Structure	RE/831	-27.796164	31.263429	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B46	Building/Structure	RE/831	-27.784400	31.265922	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B47	Building/Structure	1/831	-27.807702	31.283364	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B48	Building/Structure	6/518	-27.836678	31.274278	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B49	Building/Structure	0/689	-27.830932	31.327467	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B50	Building/Structure	0/689	-27.827763	31.324547	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B51	Building/Structure	0/689	-27.821781	31.322743	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B52	Building/Structure	0/689	-27.818523	31.338125	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B53	Building/Structure	0/689	-27.823697	31.313619	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B54	Building/Structure	2/518	-27.821401	31.299221	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B55	Building/Structure	0/830	-27.861778	31.320619	Demolished	Contemporary	Potentially Sensitive



Site No	Type	Farm Portion	Lat (y)	Lon (x)	Current Status	Age	Sensitivity
2731CD-IGI-B56	Building/Structure	0/830	-27.868750	31.317943	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B57	Building/Structure	0/830	-27.872134	31.318344	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B58	Building/Structure	0/830	-27.883037	31.319341	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B59	Building/Structure	0/830	-27.877338	31.317198	Demolished	Contemporary	Potentially Sensitive
2731CC-IGI-B60	Building/Structure	0/540	-27.905575	31.241009	Demolished	Contemporary	Potentially Sensitive
2731CC-IGI-B61	Building/Structure	0/540	-27.897154	31.240191	Demolished	Contemporary	Potentially Sensitive
2731CC-IGI-B62	Building/Structure	0/540	-27.899022	31.236870	Infrastructure	Contemporary	Potentially Sensitive
2731CC-IGI-B63	Building/Structure	0/540	-27.894878	31.237798	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B64	Building/Structure	0/540	-27.896486	31.266840	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B65	Building/Structure	4/518	-27.849798	31.287252	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B66	Building/Structure	0/689	-27.824482	31.328154	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B67	Building/Structure	0/689	-27.822928	31.308135	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B68	Building/Structure	0/830	-27.879319	31.322294	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B69	Building/Structure	RE/518_6/518	-27.834546	31.282211	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B70	Building/Structure	6/518	-27.835760	31.276956	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B71	Building/Structure	2/518	-27.836544	31.301610	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B72	Building/Structure	1/831	-27.803184	31.273574	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B73	Building/Structure	0/689	-27.814219	31.307146	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B74	Building/Structure	0/689	-27.827694	31.307840	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B75	Building/Structure	0/689	-27.823112	31.311423	Infrastructure	Contemporary	Potentially Sensitive
2731CC-IGI-B76	Building/Structure	0/540	-27.898699	31.247191	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B77	Building/Structure	0/689	-27.834614	31.327423	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B78	Building/Structure	0/689	-27.830070	31.318826	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B79	Building/Structure	0/689	-27.828701	31.310173	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B80	Building/Structure	0/689	-27.826276	31.306250	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B81	Building/Structure	0/689	-27.818121	31.304589	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B82	Building/Structure	6/518	-27.832453	31.278177	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B83	Building/Structure	2/518	-27.831059	31.299532	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B84	Building/Structure	RE/831	-27.788766	31.284943	Demolished	Contemporary	Potentially Sensitive
2731CC-IGI-B85	Building/Structure	0/540	-27.896640	31.240948	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B86	Building/Structure	0/689	-27.836610	31.333000	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B87	Building/Structure	0/689	-27.831772	31.322628	Demolished	Contemporary	Potentially Sensitive
2731CD-IGI-B88	Building/Structure	0/689	-27.829203	31.306605	Infrastructure	Contemporary	Potentially Sensitive



Site No	Type	Farm Portion	Lat (y)	Lon (x)	Current Status	Age	Sensitivity
2731CD-IGI-B89	Building/Structure	RE/831	-27.793715	31.254540	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B90	Building/Structure	RE/831	-27.794354	31.266306	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B91	Building/Structure	2/518	-27.826122	31.300793	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B92	Building/Structure	0/689	-27.833789	31.335785	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B93	Building/Structure	0/689	-27.835909	31.333563	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B94	Building/Structure	0/830	-27.881533	31.320320	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B95	Building/Structure	0/830	-27.876513	31.319856	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B96	Building/Structure	0/830	-27.872116	31.317002	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B97	Building/Structure	0/540	-27.892031	31.259878	Infrastructure	Contemporary	Potentially Sensitive
2731CD-IGI-B98	Building/Structure	0/540	-27.894777	31.266572	Infrastructure	Contemporary	Potentially Sensitive
2731CC-IGI-B99	Grave	RE/831	-27.791522	31.244652	Unknown	Potentially Historical	Sensitive



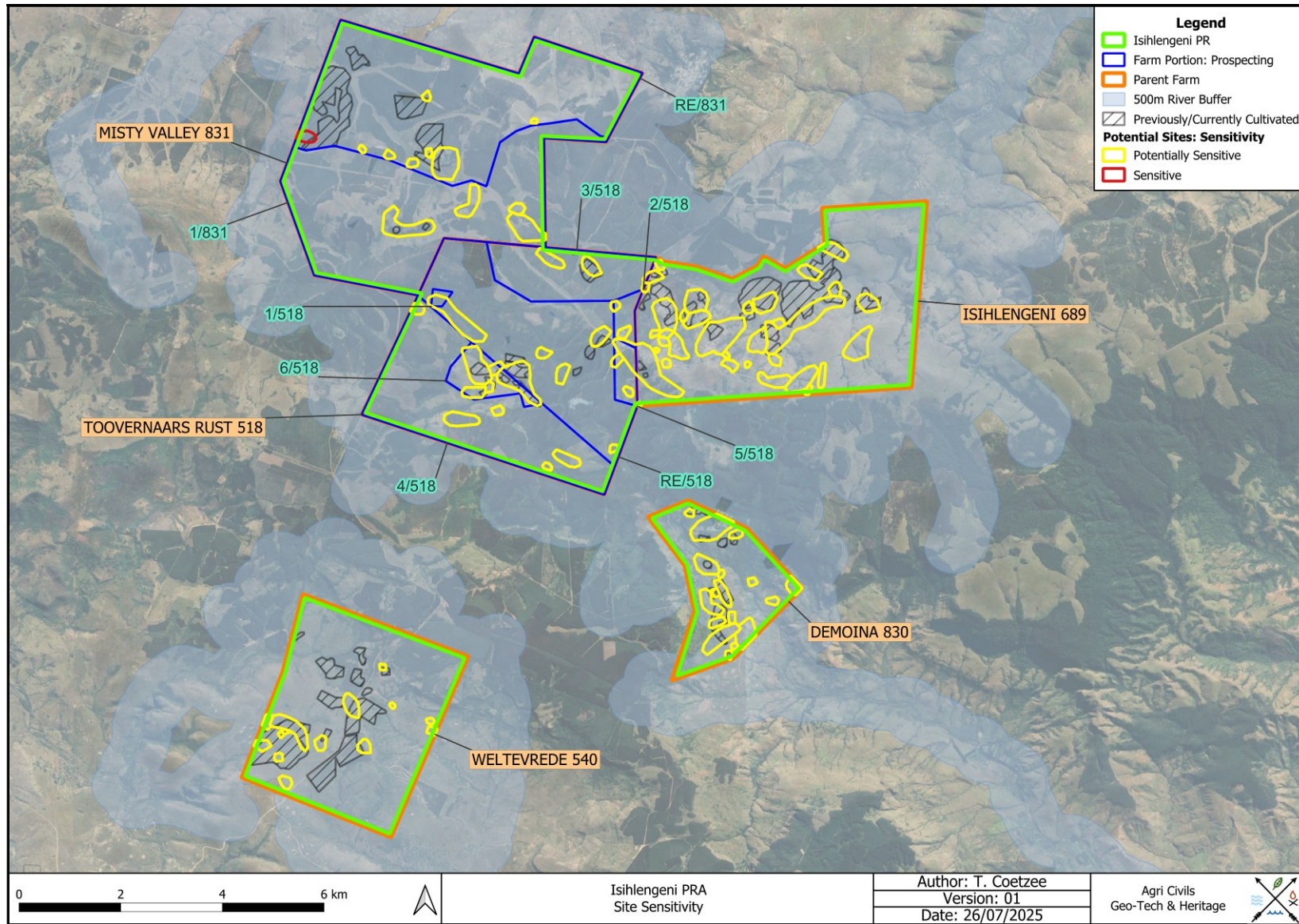


Figure 17: Site Sensitivity portrayed on a 2024 satellite image.



## 8.2 Recommendations

The following recommendations are made in order to avoid the destruction of heritage remains within the demarcated prospecting area:

- Although substantial portions of the project area appear to be associated with plantations, the identified areas linked to past or present infrastructure suggest a fairly densely settled landscape. Such settlements are often associated with both marked and unmarked burial sites, which are considered heritage-sensitive and protected under applicable legislation. In light of their potential heritage significance, the identified infrastructure areas and grave site should be excluded from the proposed prospecting activities.
- As the proposed prospecting activities exceed 0.5 Ha and the area is deemed heritage-sensitive, a Phase 1 HIA with pedestrian survey is recommended for the 15-ha prospecting footprint once delineated.
- The 500 m buffer zone surrounding the perennial and non-perennial rivers/streams is potentially sensitive from a heritage perspective. Although the previously/currently cultivated areas that intersect the 500 m buffer zone are disturbed, the potential for cultural material still exist and care should be exercised when prospecting.
- Since archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the prospecting phase, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed, all activities must be suspended, and the Provincial Heritage Resources Authority (PHRA) must be contacted (KwaZulu-Natal Amafa and Research Institute).

## 9. Conclusion

The proposed Isihlengeni PRA on the Farms Isihlengeni 689, Toovernaars Rust 518, Misty Valley 831, Demoina 830 and Weltevrede 540 covers approximately 5257 Ha, while the proposed impact area will measure approximately 15 Ha. The general area is characterised by plantations, previously cultivated land and open veldt. The Desktop Heritage Assessment examined the area using a combination of historical aerial imagery, historical topographical maps, contemporary satellite imagery, as well as written sources and previous heritage studies conducted in the area. A high number of settlements were observed on historical topographical maps and aerial images, indicating a sensitive project area. Since the proposed prospecting activities exceed 0.5 Ha, it is recommended that a Phase 1 HIA be conducted on the proposed impact area.



## 10. Addendum: Terminology

### **Archaeology:**

The study of the human past through its material remains.

### **Artefact:**

Any portable object used, modified, or made by humans; e.g. pottery and metal objects.

### **Assemblage:**

A group of artefacts occurring together at a particular time and place, and representing the sum of human activities.

### **Context:**

An artefact's context usually consist of its immediate *matrix* (the material surrounding it e.g. gravel, clay or sand), its *provenience* (horizontal and vertical position within the matrix), and its *association* with other artefacts (occurrence together with other archaeological remains, usually in the same matrix).

### **Cultural Resource Management (CRM):**

The safeguarding of the archaeological heritage through the protection of sites and through salvage archaeology (rescue archaeology), generally within the framework of legislation designed to safeguard the past.

### **Excavation:**

The principal method of data acquisition in archaeology, involving the systematic uncovering of archaeological remains through the removal of the deposits of soil and other material covering and accompanying it.

### **Feature:**

An irremovable artefact; e.g. hearths or architectural elements.

### **Ground Reconnaissance:**

A collective name for a wide variety of methods for identifying individual archaeological sites, including consultation of documentary sources, place-name evidence, local folklore, and legend, but primarily actual fieldwork.

### **Matrix:**

The physical material within which artefacts is embedded or supported, i.e. the material surrounding it e.g. gravel, clay or sand.

### **Phase 1 Assessments:**

Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.

### **Phase 2 Assessments:**

In-depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required.

### **Sensitive:**

Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.



**Site:**

A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity.

**Surface survey:**

There are two kinds: (1) unsystematic and (2) systematic. The former involves field walking, i.e. scanning the ground along one's path and recording the location of artefacts and surface features. Systematic survey by comparison is less subjective and involves a grid system, such that the survey area is divided into sectors and these are walked ally, thus making the recording of finds more accurate.

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National Heritage Resource Act No.25 of 1999, Government Gazette, Cape Town

Removal of Graves and Dead Bodies Ordinance No. 7 of 1925, Government Gazette, Cape Town.



## Appendix A: Historical Aerial Imagery & Topographical Maps



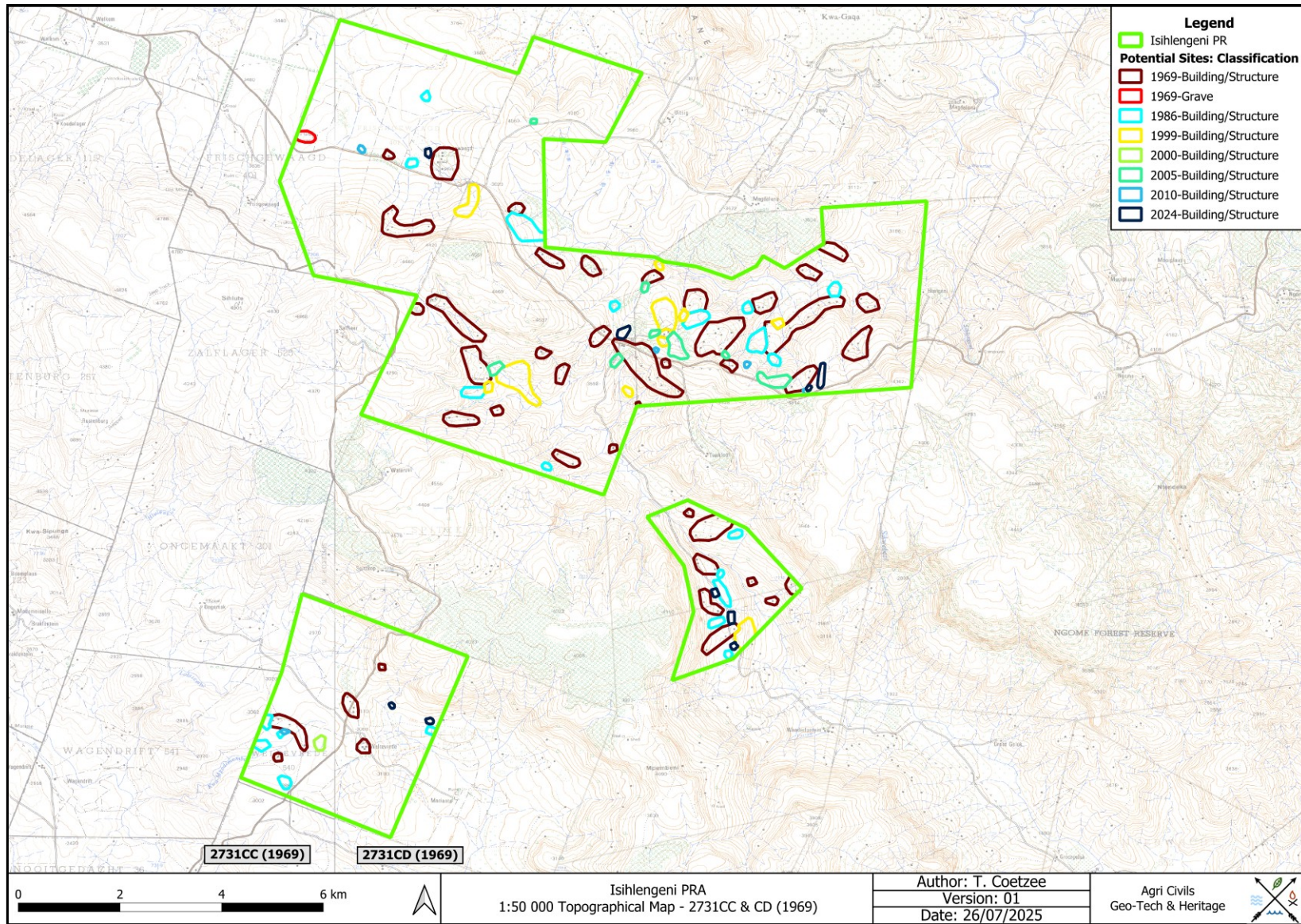


Figure 18: Project area portrayed on segments of the 1:50 000 2731CC & CD 1969 topographical maps.



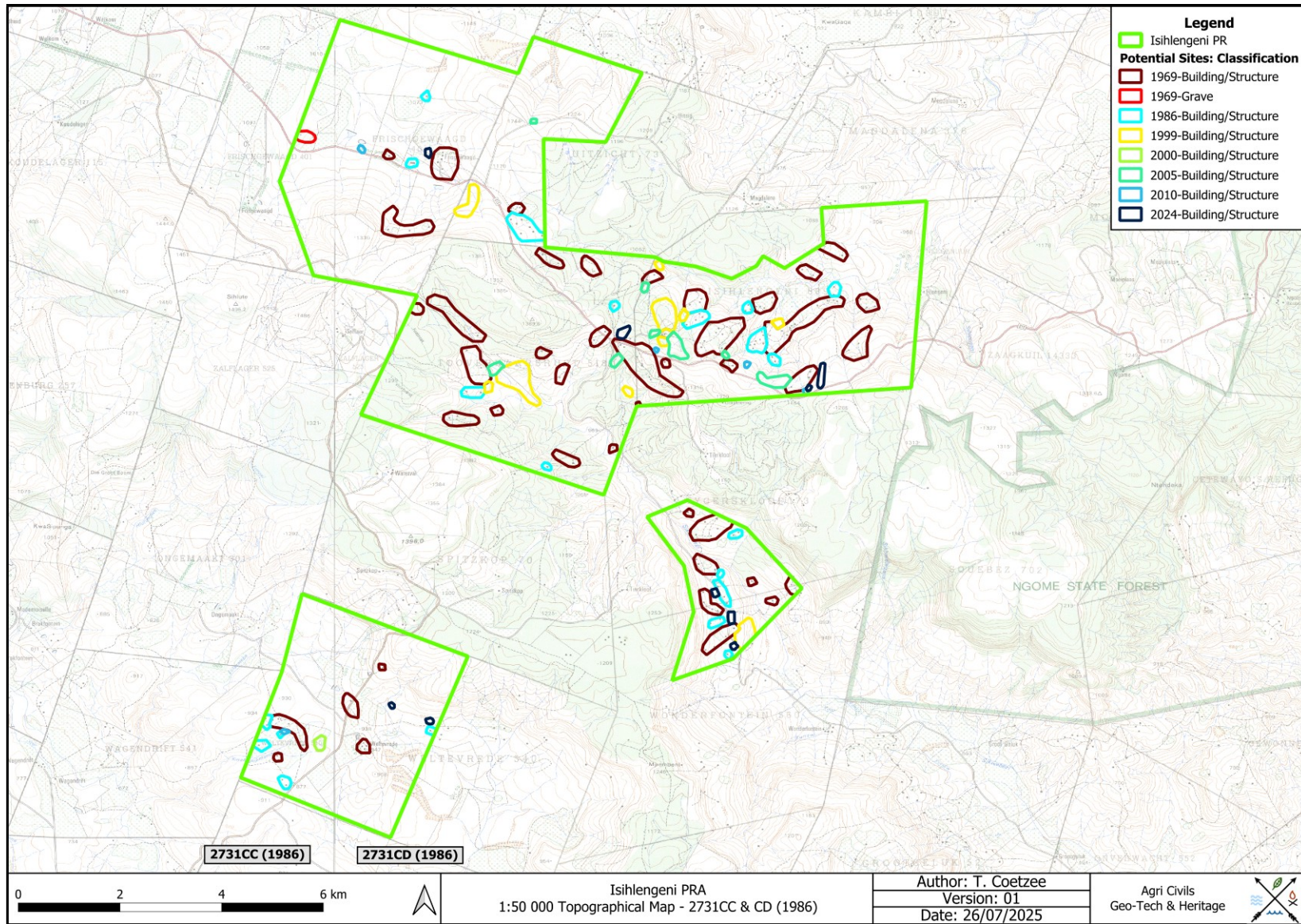


Figure 19: Project area portrayed on segments of the 1:50 000 2731CC & CD 1986 topographical maps.



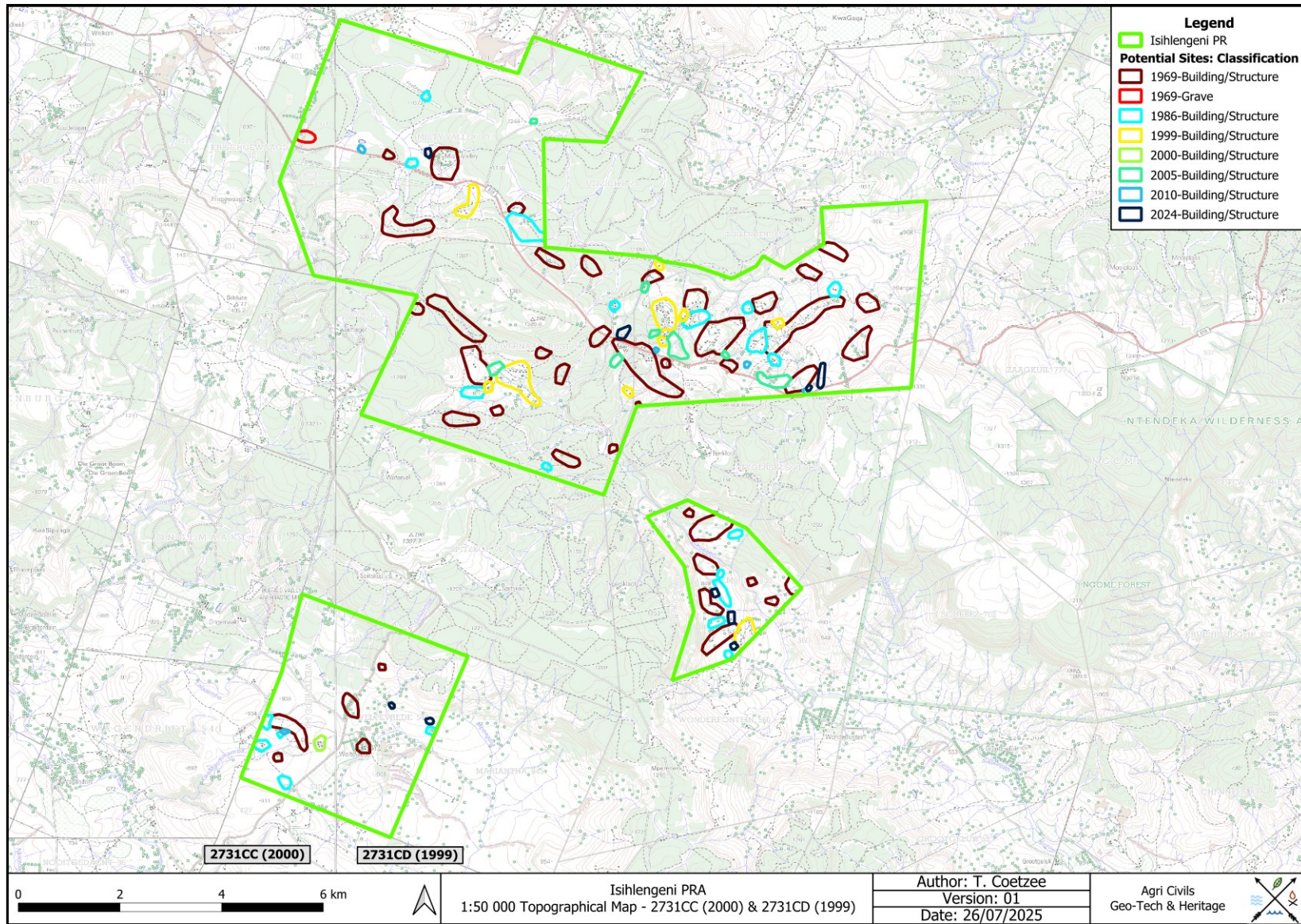


Figure 20: Project area portrayed on segments of the 1:50 000 2731CC (2000) & 2731CD (1999) topographical maps.



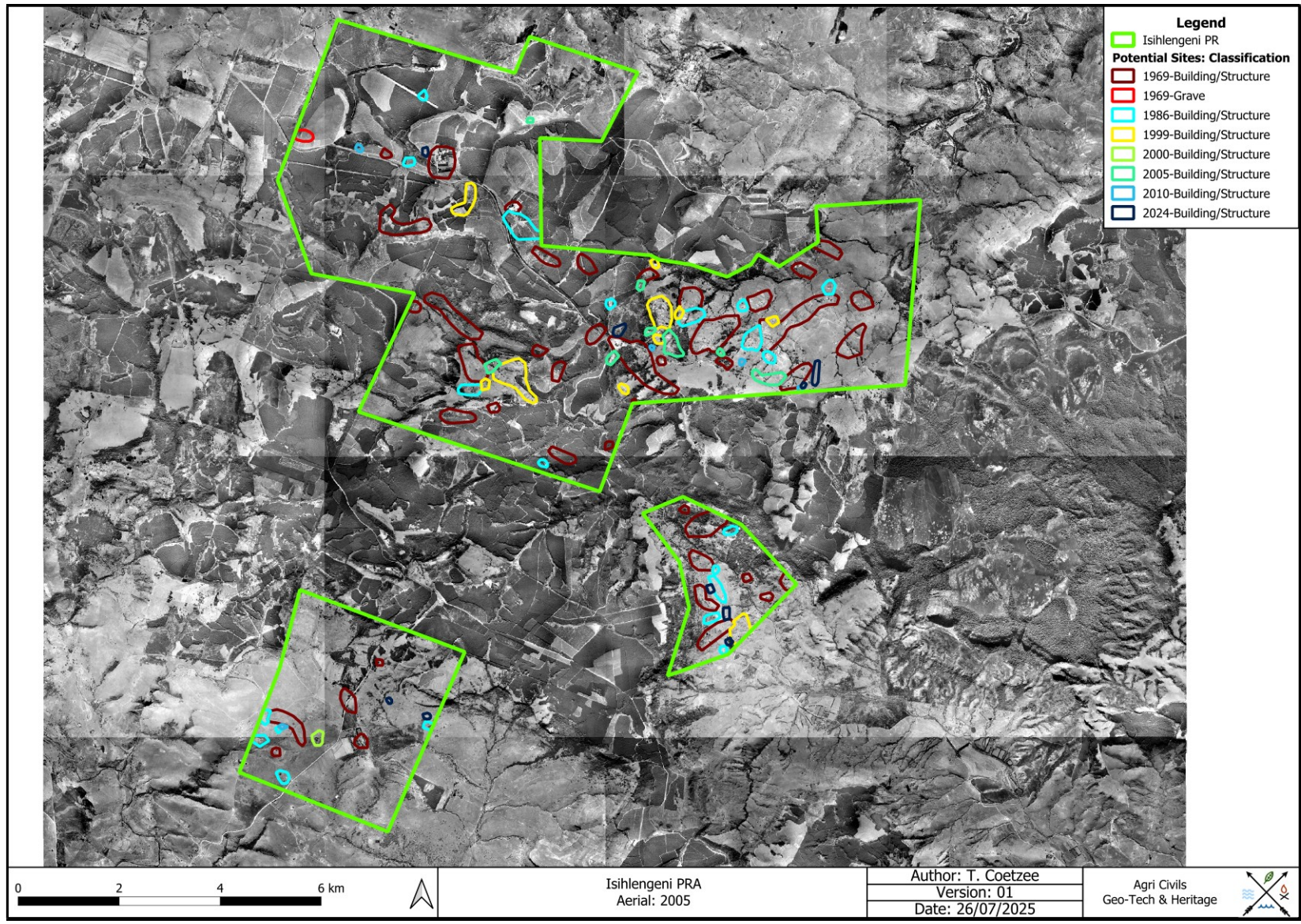


Figure 21: Project area portrayed on a 2005 aerial image.



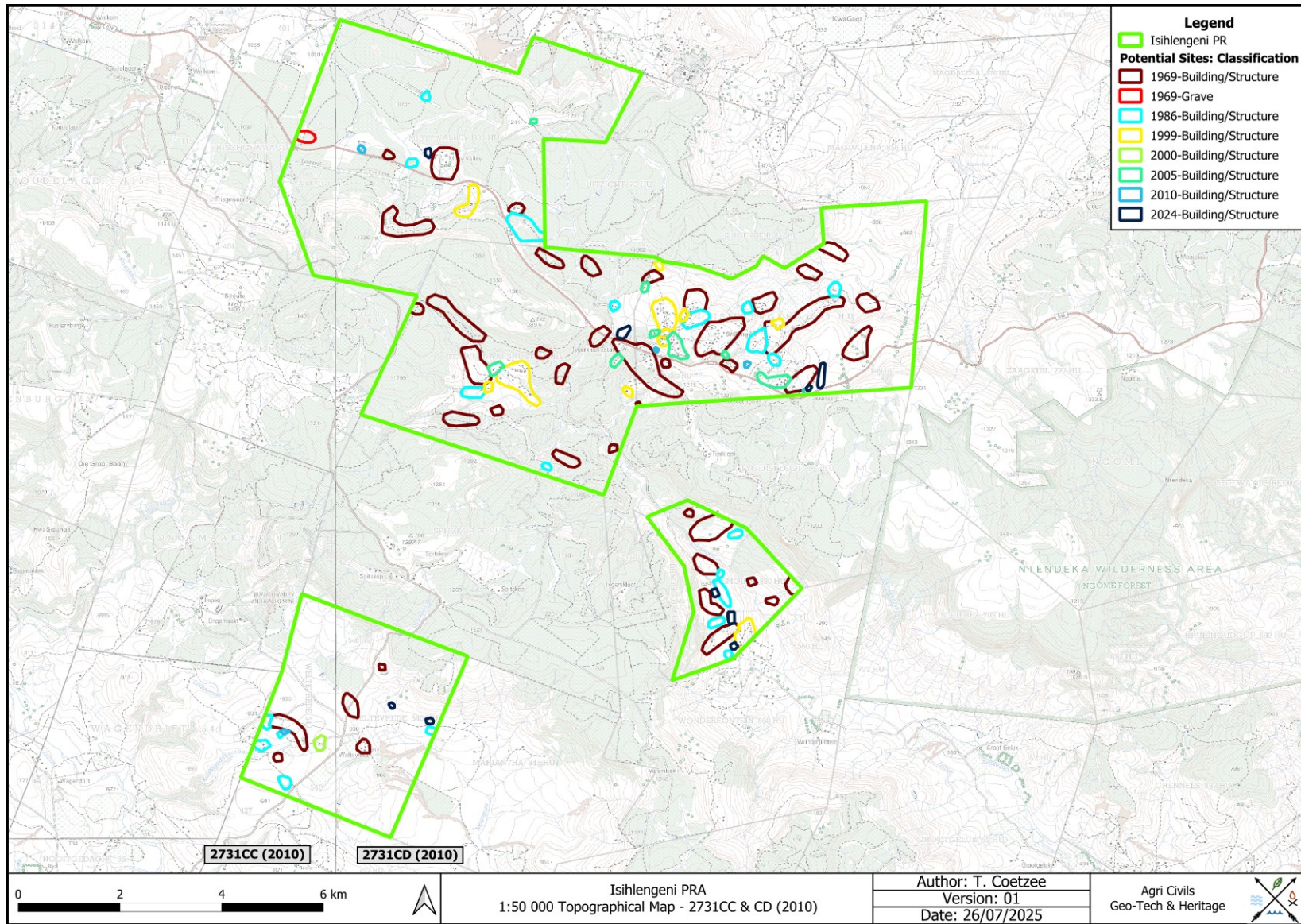


Figure 22: Project area portrayed on segments of the 1:50 000 2731CC & CD 2010 topographical maps.



# Curriculum Vitae

## Tobias Coetzee

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Registered Professional Archaeologist, Association of Southern African Professional Archaeologists (ASAPA), CRM accredited, membership no: 289

**Full names:** Tobias Johannes Coetzee  
**Date of birth:** 19 May 1986  
**Qualifications:** MA (Archaeology)

### Education:

2017 MA (Archaeology)  
University of Pretoria  
Dissertation: *Mapping Bokoni: Exploring Bokoni settlement choices and changes in Mpumalanga and Limpopo, South Africa using GIS site distribution analysis techniques*

2009 BA (Hons) (Archaeology)  
University of Pretoria  
Dissertation: *Mapping Bokoni towns & trade: Applying Geographic Information Systems to the articulation of Mpumalanga stonewalled sites with pre-colonial trade routes*

2006 – 2008 BA (Archaeology & Geography)  
University of Pretoria  
Subjects: Zulu, Afrikaans, Cartography, GIS and ArcGIS applications, Meteorology, Anthropology, Ancient History, Isotope Ecology and Dating, Computer and Information Literacy, Academic Skills and Introduction to research

### Employment:

2020 – present Archaeologist  
Agri Civils Geo-Tech & Heritage

2013 GIS Practitioner  
Bigen Group (Pty) Ltd

2012 Specialist consultant: Heritage  
Environmental Assurance (Pty) Ltd

2011 Junior lecturer in Archaeology at the University of South Africa (UNISA) at the department of Anthropology & Archaeology  
  
Primary lecturer for: The Prehistory of South Africa  
Assistant lecturer for: Applied Archaeology - Heritage Conservation

2009 Tutor  
Department of Anthropology & Archaeology, University of Pretoria

### **Skills Development:**

- 2015 > ISO 8000 Part 100: Initiation and Master Data Quality Exchange. Master Data: Exchange of characteristic data: Syntax, semantic encoding, and conformance to data specification. Pilog Academy in association with the certification of IAIDQ, Pretoria, South Africa
- 2013 > Creating, Editing, and Managing Geodatabases for ArcGis Desktop. ESRI Online Course
- > Basics of the Geodatabase Data Model. ESRI Online Course
- 2012 > Nautical Archaeology Society (NAS) certificate in maritime archaeology (Training Level III), Robben Island. In association with the South African Heritage Resources Agency (SAHRA), Centre for International Heritage Activities (CIE) and the Embassy of the Kingdom of the Netherlands (EKN). Cape Town, South Africa
- > Post-decision Environmental Monitoring and Enforcement: The Role and Responsibilities of an Environmental Officer. Centre for Environmental Management, Potchefstroom, South Africa (NQF level 6)
- 2011 > QGIS and GRASS Archaeology short course. Witwatersrand University (WITS), South Africa
- > Understanding Map Projections and Coordinate Systems. ESRI Online Course
- > Learning ArcGis Spatial Analyst. ESRI Online Course
- 2010 > GIS in Archaeology Workshop. Witwatersrand University (WITS), South Africa
- 2009 > Workshop in Global Climate Change: Building a habitable planet. University of Cape Town, South Africa

### **Awards and Grants:**

- 2009 > Hanisch Award for exceptional post-graduate academic achievement in the Department of Anthropology and Archaeology, UP (awarded by the Archaeological Society of South Africa)
- > University of Pretoria Post graduate scholarship
- > Prestigious National Research Foundation (NRF) - Five hundred Years Initiative (FYI) scholarship
- 2008 > University of Pretoria Post Graduate Scholarship
- > Prestigious National Research Foundation (NRF) - Five hundred years Initiative (FYI) scholarship

### **Conference Papers & Publications:**

Coetzee, T. 2014. Bokoni from Above: Using Geographical Information Systems to discover settlement patterns and migrations. Poster presented at the SAFA/PAA Congress, Johannesburg, July 2014

Coetzee, T. & Schoeman, A. 2011. Mapping Trade in Bokoni. *The Digging Stick* 28 (1): 7-9

Coetzee, T. 2010. Comments on Bokoni settlement pattern and its geographical relationship to pre-colonial trade routes in Mpumalanga. Paper presented at the Five Hundred Year Initiative (FYI), Johannesburg, October 2010

Coetzee, T. 2010. Mapping Bokoni: Applying Geographic Information Systems to the articulation of Mpumalanga stonewalled sites with pre-colonial trade routes. Paper presented at the SAFA/PAA Congress, Dakar, November 2010

### **Cultural Resources Management Reports:**

(Complete project list upon request)

Coetzee, T. 2025. *Desktop Heritage Assessment for the Proposed Ellimint Mining (Pty) Ltd Prospecting Right on Portion 11 of the Farm Zwartkoppies 316 JT, eMakhazeni, Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2025. *Desktop Heritage Assessment for the Proposed Alidafor (Pty) Ltd Bankpan 19117 Prospecting Right on the Remaining Extents of Portions 4 and 5 of the Farm Bankpan 225 IS, Hendrina, Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2025. *Recommendation for Exemption from doing a full Phase 1 Heritage Impact Assessment for the proposed construction of the BME Dryden Storage Tanks on Portion 11 of the Farm Weltevreden 227 IR, Delmas, Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2025. *Phase 1 Heritage Impact Assessment for the Proposed NTT Low Water Bridge and Road on the Farms Witwater 126 KR and Macouwkuil 45 KR near Vaalwater in the Limpopo Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2025. *Phase 1 Heritage Impact Assessment for the Proposed Kangra Office and Accommodation Project near Dirkiesdorp in the Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2025. *Phase 1 Heritage Impact Assessment for the Proposed 2 Seam S102 Clydesdale Extension Project near Kriel in the Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Tlou Coal Hartebeesfontein Mining Permit (MP 2) on a portion of Portion 2 of the Farm Hartbeestfontein 339 JS near Middelburg, Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Upgrading of Road DR08017 between Cedarville and Mount Frere in the Eastern Cape Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Townlands S102 Uitkyk PR Inclusion Project on Portion 290 and the Remaining Extent of Portion 27 of the Farm Middelburg Town & Townlands 287 JS near Middelburg, Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Samancor S102 Project on Several Portions of the Farm Elandskraal 469 JQ near Mooinooi in the North West Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Archaeological Desktop Study for the Proposed Matjesgoedkuil Prospecting Right on Portions 3, 4, 7 and 14 of the Farm Middelburg or Matjesgoedkuil 266 IR between Delmas and Leandra, Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Izazi Environmental Authorisations Project on the Farm Elandsfontein 309 JS& Highveld Industrial Park 1230 JS near Clewer, Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Rietfontein S102 Banana Republic PR Inclusion Project on Portion 19 of the Farm Elandspruit 291 JS near Middelburg, Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Glencore Merafe Venture Boshhoek Smelter Projects on the Farm Boschhoek 103 JQ near Rustenburg, North West Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Heritage Impact Assessment for the Proposed Grietasvlakte Mining Permit on a Portion of the Remaining Extent of Portion 1 of the Farm Grietas Vlake 500 LQ, Lephalale, Limpopo Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Mbavuzi Mining Permit near Empangeni, KwaZulu-Natal Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Glencore Eastern Mines Ventilation Shaft on the Remaining Extent of the Farm Helena 6 JT, Steelpoort, Limpopo Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Archaeological Desktop Study for the Proposed Carbor (Pty) Ltd Prospecting Right near Hotazel, Northern Cape.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Construction of Permanent Accesses to the Transnet Multi-Purpose Products Pipeline Infrastructure Sites in the Free State and Mpumalanga Provinces.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Saldomate Resources S102 & IWULA Project on a Portion of the Remaining Extent of Portion 2 of the Farm Elandsfontein 309 JS, and a Portion of Portion 2 and 6 of the Farm Weltevreden 324 JS, Clewer, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2024. *Phase 1 Archaeological Impact Assessment for the Proposed Wolvekrans Mining Development on a Portion of Portion 31 of the Farm Wolvekrans 17 IS, eMalahleni, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed PMG Paling Siding Project near Postmasburg, Northern Cape Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed ACP Alternative Weighbridge intersecting Portions 82 and 83 of the Farm Waterval 303 JQ, Rustenburg, North West.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Archaeological Desktop Study for the Proposed Kalkfontein Prospecting Project near Warden, Free State*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Archaeological Desktop Study for the Proposed Trojan 2 Prospecting Right on Portions 731, 732 and 1347 of the Farm Hartebeestpoort B 410 JQ, Brits, North West Province*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed CO-Generation Facility at the Samancor Dikwena Mine near Brits, North West Province*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Archaeological Desktop Study for the Proposed Klei Minerale (Pty) Ltd SABrix Prospecting Right on Portions 16, 20 and 22 of the Farm Boekenhoutkloof 315 JR, Pretoria, Gauteng*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Heritage Impact Assessment for the Proposed NTT Witwater Airfield on the Farm 948 KR near Vaalwater, Limpopo Province*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Remining of the Kangra Coal Mt Ngwibi Discard Dump near Vryheid, KwaZulu-Natal Province*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Kangra Coal Block H Opencast Mining Development near Dirkiesdorp, Mpumalanga Province*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed IPP Nndanganeni S102 South Extension Project, Middelburg, Mpumalanga*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Archaeological Desktop Study for the Proposed Tweefontein Coal Mine Prospecting Right near Morgenzon, Mpumalanga*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Spitskop Mining Permit Application (Area B) on the Remaining Extent of Portion 35 of the Farm Spitskop 276 IS, Mpumalanga Province*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Heritage Impact Assessment for the Masemanzi Kopermyn Opencast Pit on Portion 2 of the Farm Kopermyn 435 JS, Middelburg, Mpumalanga Province*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Mafatiki Colliery Underground Mining Right Project, Devon, Gauteng Province*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Breyten Colliery S102 Project on Portion 7 of the Farm Bankfontein 215 IS, Breyten, Mpumalanga*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Alkmaar Colliery on the Farm Alkmaar 320 IT, Ermelo, Mpumalanga Province*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Peiserton Mining Development on Portion 1 of Farm 531 near Lime Acres, Northern Cape Province*. Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Glencore Eastern Mines PV Solar Facility on the Farms Thorncliffe 374 KT and De Grooteboom 373 KT, Steelpoort, Limpopo Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Memorandum On the Monitoring of the Proposed Expansion of the Glencore Thorncliffe PGM and FCR Plants in terms of Heritage Resources, Steelpoort, Limpopo Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Windsor Aggregate Mining Permit on the Remaining Extent of Portion 1 of the Farm Windsor 499 LQ, Lephalale, Limpopo Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Heritage Impact Assessment for the Proposed Roodepoort Clay Quarry Pit Extension Project on the Remaining Extent of the Farm Roodepoort 439 JR, KwaMhlanga, Mpumalanga Province.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Archaeological Desktop Study for the Proposed Okavango Rietfontein Prospecting Right Application near Balfour, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Archaeological Desktop Study for the Proposed Okavango 17449 Prospecting Right Application near Balfour, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Casteel Dam Safety Rehabilitation Project on a Portion of the Remaining Extent of the Farm Kasteel 231 KU, Acornhoek, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Archaeological Desktop Study for the Proposed Piviaanspoort Mining (Pty) Ltd Antrachite Project (PR) near Vryheid, KwaZulu-Natal.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Phase 1 Archaeological Impact Assessment for the Proposed Buffelshoek Mine intersecting the Farms Buffelshoek 351 KQ and Grootfontein 352 KQ, Thabazimbi, Limpopo.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Archaeological Desktop Study for the Proposed Abanteek Trading (Pty) Ltd Prospecting Right near Ventersdorp, North West.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Archaeological Desktop Study for the Proposed Cyentu (Pty) Ltd Prospecting Right near Ventersdorp, North West.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2023. *Archaeological Desktop Study for the Proposed Kesoram Investments (Pty) Ltd Prospecting Right near Ventersdorp, North West.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Mining Development on a Portion of the Remaining Extent of the Farm Boschfontein 268 JQ, Rustenburg, North West.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Khakhala Solar Farm on a Portion of the Remaining Extent of the Farm Greater Giyani 891 LT, Giyani, Limpopo.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Amendment to the Existing 2-Seam Mine on Portions of the Farms Vlaklaagte 45 IS and Lourens 472 IS, Kriel, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Nndanganeni S102 application on a Portion intersecting Portions 14 and 15 of the Farm Hartogs Hof 413 JS, Middelburg, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Recommended Exemption from Archaeological Impact Assessment. Study: Quarry 3 At the Annesley Andalusite Mine to The North Of Burgersfort, Limpopo.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Allanridge Khauta 100 MW Solar PV Energy Facility near Welkom in the Free State.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Allanridge Khauta 100 MW Solar PV Energy Facility with Eskom Grid Infrastructure near Welkom in the Free State.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Allanridge Melkkraal 100 MW Solar PV Energy Facility near Welkom in the Free State.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Allanridge Melkkraal 100 MW Solar PV Energy Facility with Eskom Grid Infrastructure near Welkom in the Free State.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Allanridge Hilton 75 MW Solar PV Energy Facility near Welkom in the Free State.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Allanridge Hilton 75 MW Solar PV Energy Facility with Eskom Grid Infrastructure near Welkom in the Free State.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Archaeological Desktop Study for the Proposed Colt Resources Prospecting Right Application on the Farms Dronkfontein 724 KS, Haringbult 699 KS and Spoedwel 701 KS near Marble Hall, Limpopo.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Archaeological Desktop Study for the Proposed Colt Resources Mapochsgronde Prospecting Right Application near Roosenekal, Limpopo.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *A Phase 1 Archaeological Impact Assessment for the Proposed Vaalwater Coal Mining Development on a Portion Intersecting Portions 20 & 21 of the Farm Vaalwater 173 IS, District Carolina, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Conservation Management Plan for Cemetery 1 near the proposed Arqopart Colliery, eMakhazeni, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Heritage Impact Assessment for the Proposed Lion Valley Truck Stop on Portion 42 of the Farm Rooidraai 34 JT, Mashishing, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Wonderhoek Colliery on Portions 9, 15 and the Remaining Extent of Portion 8 of the Farm Wonderhoek 376 JS, Middelburg, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *A Phase 1 Archaeological Impact Assessment for the Proposed New Peacanwood Coal Mining Development on a Portion of the Remaining Extent of the Farm Wildfontein 420 JS, district Middelburg, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Arianocap Mining Permit on a Portion of Portion 46 of the Farm Elandsfontein 309 JS, eMalahleni, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Azcoware Mining Permit on a Portion of Portion 46 of the Farm Elandsfontein 309 JS, eMalahleni, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Etzostax Mining Permit on a Portion of Portion 46 of the Farm Elandsfontein 309 JS, eMalahleni, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Fraxocare Mining Permit on a Portion of Portion 46 of the Farm Elandsfontein 309 JS, eMalahleni, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *A Phase 1 Archaeological Impact Assessment for the Proposed Wildfontein Coal Mining Development on a Portion of the Remaining Extent of the Farm Wildfontein 420 JS, district Middelburg, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

Coetzee, T. 2022. *Phase 1 Archaeological Impact Assessment for the Proposed Roodepoort Mining Right on Portion 15 of the Farm Roodepoort 40 IS, Kriel, Mpumalanga.* Lydenburg: Agri Civils Geo-Tech & Heritage

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