



**LETTER OF RECOMMENDATION FOR EXEMPTION  
FROM FULL HIA, COMMERCIAL DEVELOPMENT,  
BOEGOEBERG, NORTHERN CAPE**

PROPOSED DEVELOPMENT OF BUSINESS PREMISES,  
PORTION 17 OF THE FARM BOEGOEBERG SETTLEMENT NO. 48, KENHARDT RD,  
!KHEIS LOCAL MUNICIPALITY, ZF MGCAWU DISTRICT MUNICIPALITY,  
NORTHERN CAPE

**PREPARED FOR:**

EP3 ENVIRONMENTAL (PTY) LTD

**PREPARED BY:**

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UBIQUE HERITAGE CONSULTANTS

27 JUNE 2019

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For this project, Mr Engelbrecht was responsible for the field survey of the development footprint, identification of heritage resources, and recommendations. Ms Fivaz was responsible for research and report compilation.

**Declaration of independence:**

We, Jan Engelbrecht and Heidi Fivaz, partners of UBIQUE Heritage Consultants, hereby confirm our independence as heritage specialists and declare that:

- we are suitably qualified and accredited to act as independent specialists in this application;
- we do not have any vested interests (either business, financial, personal or other) in the proposed development project other than remuneration for the heritage assessment and heritage management services performed;
- the work was conducted in an objective and ethical manner, in accordance with a professional code of conduct and within the framework of South African heritage legislation.



**Signed:**

J.A.C. Engelbrecht & H. Fivaz  
UBIQUE Heritage Consultants

**Date:** 2019-06-27

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## ABBREVIATIONS

AIA:	Archaeological Impact Assessment
ASAPA:	Association of South African Professional Archaeologists
BIA:	Basic Impact Assessment
CRM:	Cultural Resource Management
ECO:	Environmental Control Officer
EIA:	Environmental Impact Assessment*
EIA:	Early Iron Age*
EMP:	Environmental Management Plan
ESA:	Earlier Stone Age
GPS:	Global Positioning System
HIA:	Heritage Impact Assessment
LIA:	Late Iron Age
LSA:	Later Stone Age
MEC:	Member of the Executive Council
MIA:	Middle Iron Age
MPRDA:	Mineral and Petroleum Resources Development Act
MSA:	Middle Stone Age
NEMA:	National Environmental Management Act
NHRA:	National Heritage Resources Act
OWC:	Orange River Wine Cellars
PRHA:	Provincial Heritage Resource Agency
SADC:	Southern African Development Community
SAHRA:	South African Heritage Resources Agency

*\*Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations it must be read and interpreted in the context it is used.*

## GLOSSARY

Archaeological:	<p>material remains, resulting from human activity, which is in a state of disuse and is in or on land and is older than 100 years, including artefacts, human and hominid remains and artificial features and structures;</p> <ul style="list-style-type: none"> <li>– rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years (as defined and protected by the National Heritage Resources Act (NHRA) (Act No. 25 of 1999) including any area within 10 m of such representation;</li> <li>– wrecks, being any vessel or aircraft, or any part thereof, which were wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;</li> <li>– features, structures and artefacts associated with military history, which are older than 75 years and the sites on which they are found.</li> </ul>						
Stone Age:	The first and longest part of human history is the Stone Age, which began with the appearance of early humans between 3-2 million years ago. Stone Age people were hunters, gatherers and scavengers who did not live in permanently settled communities. Their stone tools preserve well and are found in most places in South Africa and elsewhere.						
Earlier Stone Age:	>2 000 000 - >200 000 years ago						
Middle Stone Age:	<300 000 - >20 000 years ago						
Later Stone Age:	<40 000 - until the historical period						
Iron Age:	<p>(Early Farming Communities). The period covering the last 1800 years, when immigrant African farmer groups brought a new way of life to southern Africa. They established settled villages, cultivated domestic crops such as sorghum, millet and beans, and herded cattle as well as sheep and goats. As they produced their iron tools, archaeologists call this the Iron Age.</p> <table> <tr> <td>Early Iron Age:</td> <td>AD 200 - AD 900</td> </tr> <tr> <td>Middle Iron Age:</td> <td>AD 900 - AD 1300</td> </tr> <tr> <td>Later Iron Age:</td> <td>AD 1300 - AD 1850</td> </tr> </table>	Early Iron Age:	AD 200 - AD 900	Middle Iron Age:	AD 900 - AD 1300	Later Iron Age:	AD 1300 - AD 1850
Early Iron Age:	AD 200 - AD 900						
Middle Iron Age:	AD 900 - AD 1300						
Later Iron Age:	AD 1300 - AD 1850						
Historic:	Period of the arrival of white settlers and colonial contact. AD 1500 to 1950						
Historic building:	Structures 60 years and older.						
Fossil:	Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.						
Heritage:	That which is inherited and forms part of the National Estate (historic places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).						

- Heritage resources:** These mean any place or object of cultural significance, tangible or intangible.
- Holocene:** The most recent geological period that commenced 10 000 years ago.
- Palaeontology:** Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site that contains such fossilised remains or traces
- Cumulative impacts:** “Cumulative Impact”, in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity that may not be significant, but may become significant when added to existing and reasonably foreseeable impacts eventuating from similar or diverse activities.
- Mitigation:** Anticipating and preventing negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible.
- A ‘place’:** a site, area or region;
- a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
  - a group of buildings or other structures which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures;
  - an open space, including a public square, street or park; and
  - in relation to the management of a place, includes the immediate surroundings of a place.
- ‘Public monuments and memorials’:** mean all monuments and memorials—
- erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government; or
  - which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual;
- ‘Structures’:** any building, works, device or other facility made by people and which are fixed to land, and include any fixtures, fittings and equipment associated therewith.

## 1. INTRODUCTION

UBIQUE Heritage Consultants were appointed by EP3 Environmental (Pty) Ltd as independent heritage specialists in accordance with Section 38 of the NHRA and the National Environmental Management Act 107 of 1998 (NEMA), to conduct a cultural heritage assessment to determine the impact of the proposed housing development on Portion 17 of the Farm Boegoeberg Settlement No. 48, on any sites, features, or objects of cultural heritage significance. The site is located adjacent to the R32/N10, Groblershoop, in the !Kheis Local Municipality, Z.F. Mgcawu District Municipality, Northern Cape.

## 2. PROJECT OVERVIEW

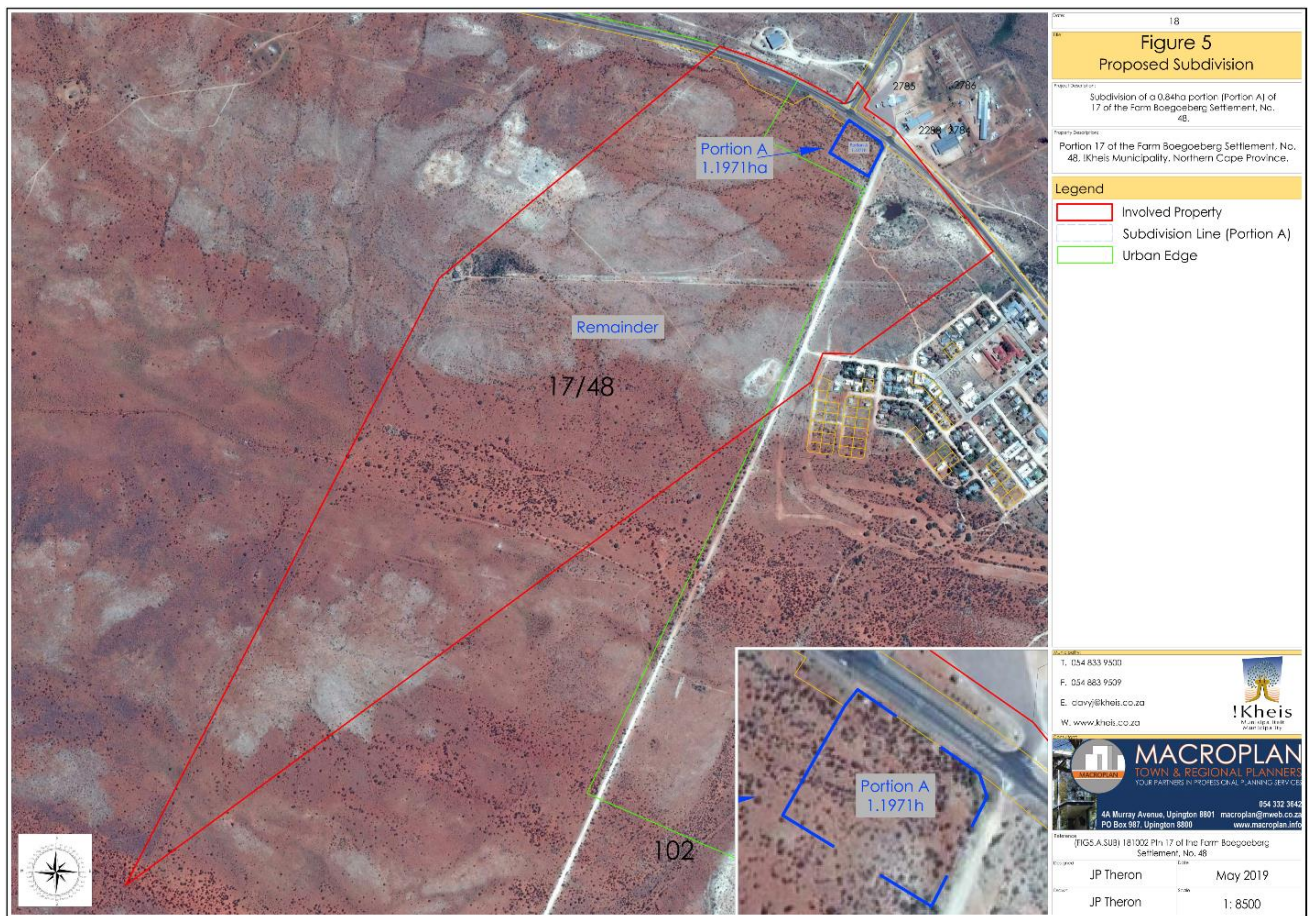
### 2.1 Project description

The project involves the development of the 1.1971 ha site by Onjanha Trust into mixed-use commercial premises that will include office space, a public garage with associated stores, adequate car parking and amenities that will serve the local community. The applicant will store less than 30 000 litres of fuel on site in order not to trigger a Basic Assessment.

### 2.2 Technical information

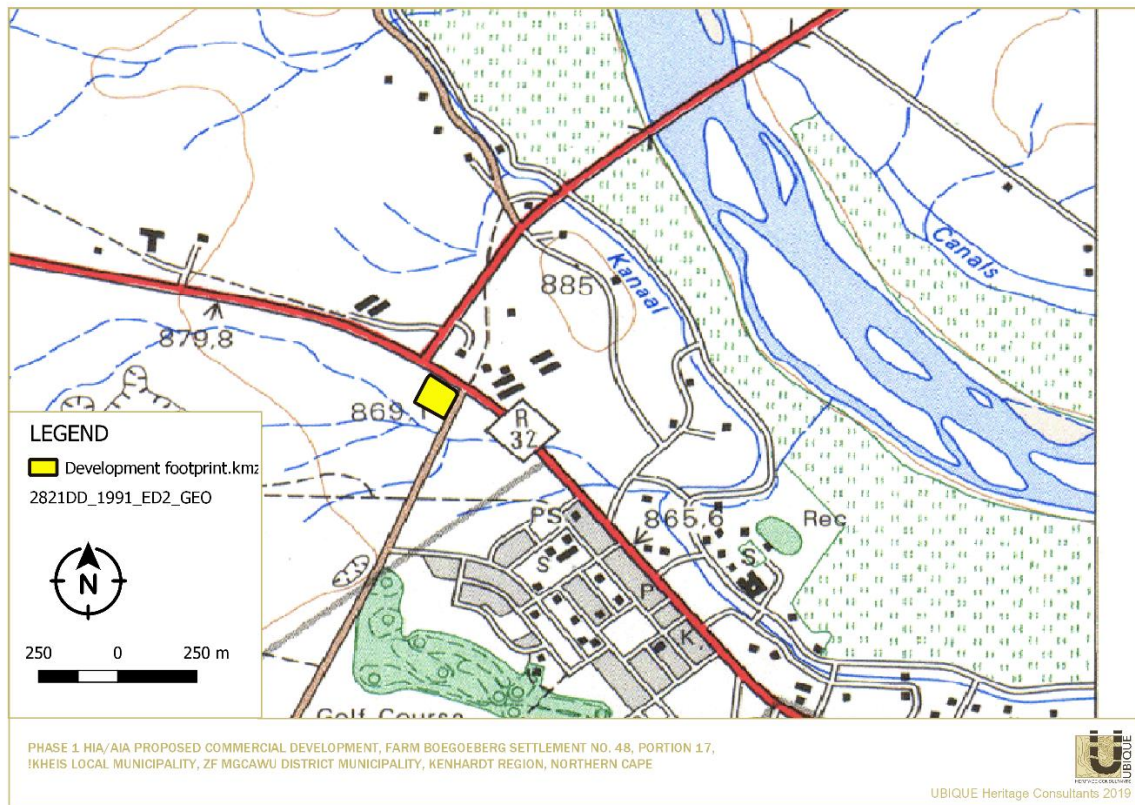
Project description	
Project name	Commercial development, Boegoeberg Settlement No. 48 Portion 17, Northern Cape.
Description	Letter of recommendation for the exemption of completing a full HIA, for the proposed business premises development on Portion 17 of Boegoeberg Settlement No. 48, Kenhardt Rd., !Kheis Local Municipality, ZF Mgcawu District Municipality, Northern Cape.
Developer	
Onjanha Trust	
Consultants	
Environmental	EP3 Environmental (Pty) Ltd.
Heritage and archaeological	UBIQUE Heritage Consultants
Paleontological	Banzai Environmental
Property details	
Province	Northern Cape
District municipality	ZF. Mgcawu
Local municipality	!Kheis
Topo-cadastral map	2821DD 1:50 000
Farm name	Boegoeberg Settlement No 48 Portion 17
Closest town	Groblershoop
GPS Co-ordinates	28° 39' 13.50" S; 24° 42' 37.70" E
Development footprint size	1.1971 ha
Land use	
Previous	Unknown

Current	None
Rezoning required	Yes
Sub-division of land	Yes
<b>Development criteria in terms of Section 38(1) NHRA</b>	
Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length.	No
Construction of bridge or similar structure exceeding 50m in length.	No
Construction exceeding 5000m <sup>2</sup> .	No
Development involving three or more existing erven or subdivisions.	No
Development involving three or more erven or divisions that have been consolidated within the past five years.	No
Rezoning of site exceeding 10 000m <sup>2</sup> .	No
Any other development category, public open space, squares, parks, recreation grounds.	No

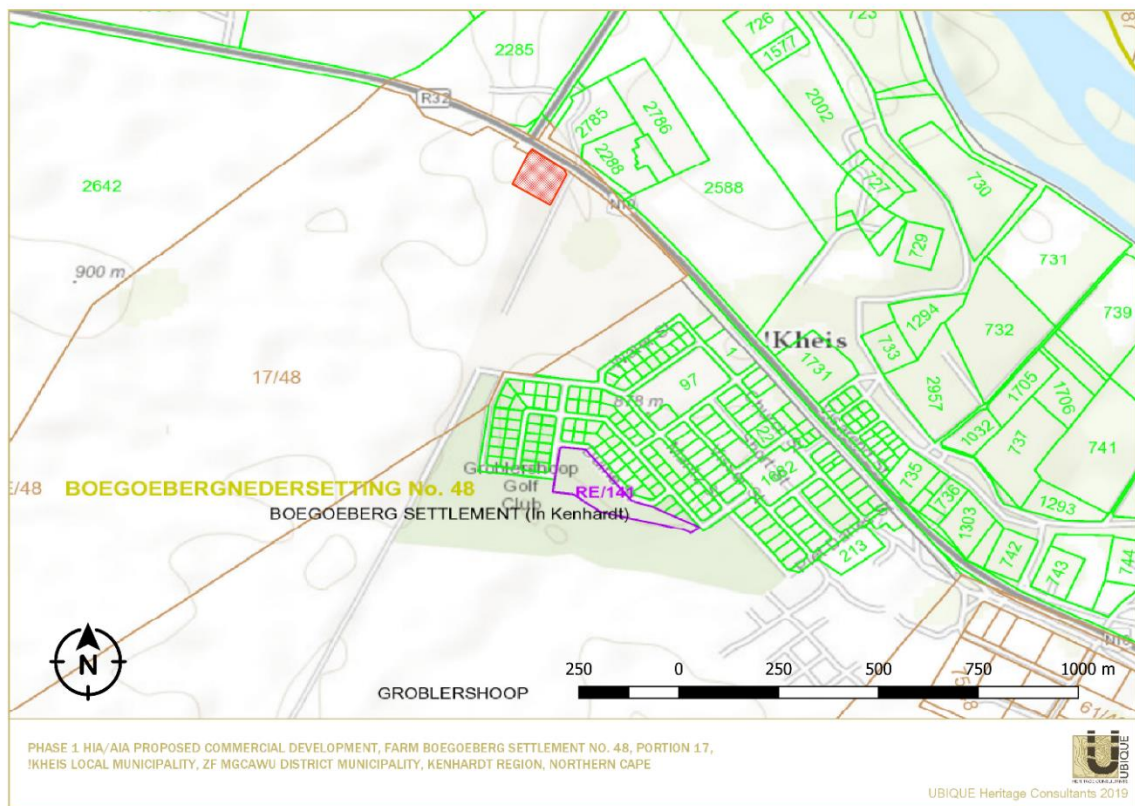


**Figure 1** Division of the property Portion 17, Farm Boegoeberg Settlement No. 48. Proposed development of business premises will occur on Portion A, indicated with blue polygon; Map provided by EP3 Environmental (Pty) Ltd.





**Figure 2** Locality of proposed business premises on Portion 17 of the Farm Boegoeberg Settlement No.48, Groblershoop, indicated on 1:50 000 Topo-cadastral map 2821DD, Chief Surveyor General.



**Figure 3** Project footprint, represented by a red polygon, indicated on Chief Surveyor-General Property Search ArcGIS Web Map. (<https://csg.esri-southafrica.com/portal/apps/webappviewer/index.html?id=34ec3dcf8d8642bb9ed7f795cbfe8faf>)

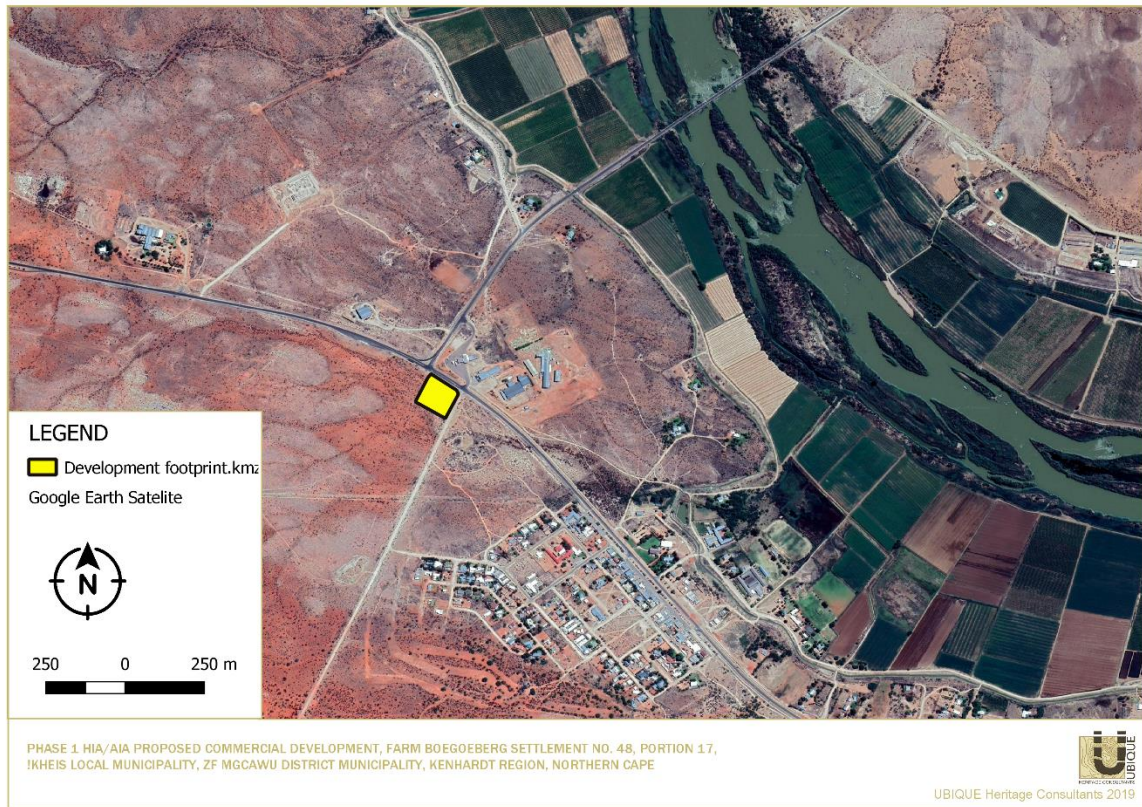


Figure 4 Locality of proposed business premises on Portion 17 of the Farm Boegoeberg Settlement No.48, Groblershoop, indicated on Google Earth Satellite image.

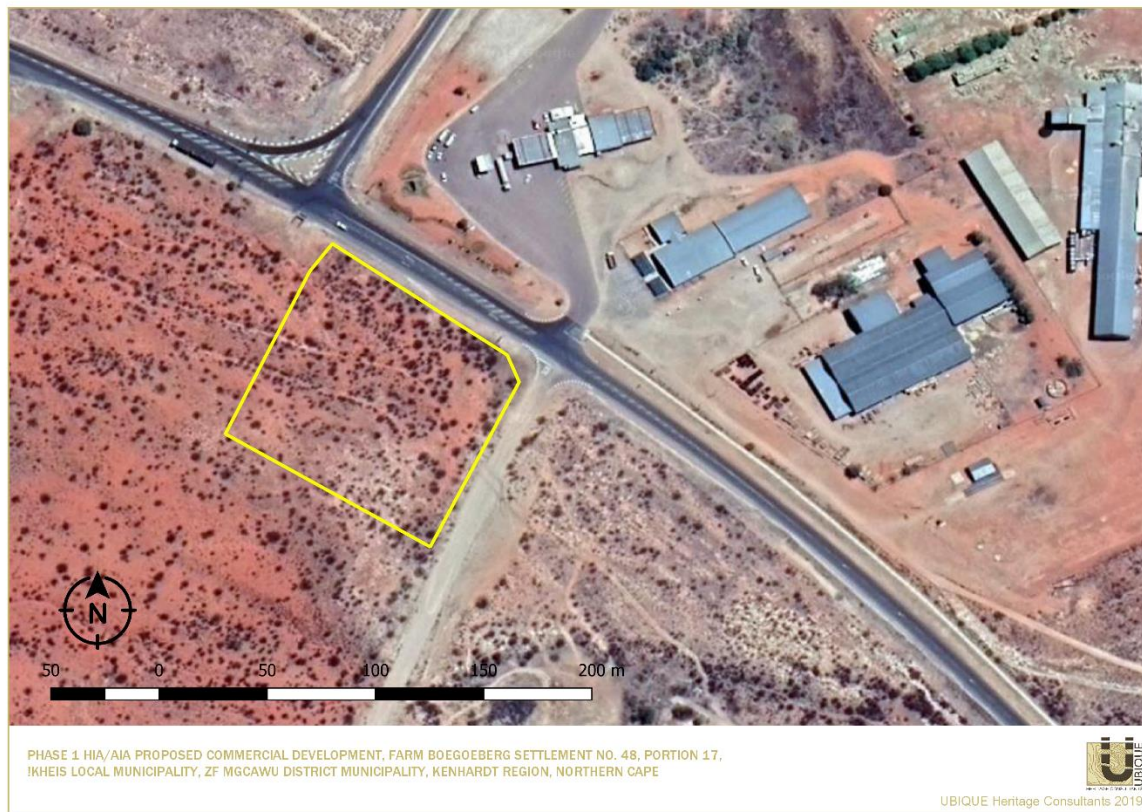


Figure 5 Detail of locality of proposed business premises on Portion 17 of the Farm Boegoeberg Settlement No.48, Groblershoop, indicated on Google Earth Satellite image.

## 2.3 Description of the affected environment

The !Kheis Local Municipality falls predominantly within the Nama-Karoo biome (Mucina & Rutherford 2006), and the majority of the vegetation type in the study area is typical Bushmanland Arid Grassland. The landscape is characterised by plains of dwarf shrubs (*Salsola* sp.) and white grasses (*Stipagrostis* spp.), low-lying quartzite rocky Koppies, and sandy loam and calcrete soils.

The study area is a relatively flat sandy plain situated next to the R32/N10 national road. There is calcrete gravel on the surface area, and two small dry waterways run from west to east across the site. There are some superficial anthropogenic disturbances in the south-eastern part of the footprint, which is reminiscent of recent roadworks work camp.





**Figure 6.** Views of the affected development area.

### 3. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

#### 3.1.1 Stone Age

Numerous Archaeological Impact Assessments have been done in the area. For a full list, refer to Bibliography. Scatters of stone artefacts around the study area have been reported by Dreyer (2006, 2012), Morris (2006, 2007, 2012), Van Ryneveld (2007), Van Vollenhoven (2014), and Webley (2013). Several localities with lithics pertaining to the ESA and MSA but with little or no context have been recorded. The recorded stone artefacts in the area are predominantly described as of poor preservation and low significance (Morris 2012).

#### 5.2.2 Historical period

The town of Groblershoop developed on the farm Uitdraai. Initially, the town was called Sternham, and the first house was built in 1912. In 1935 the name was changed to Groblershoop after a former Minister of Agriculture, Mr PGW Grobler. Mr Grobler played an essential role in the development of the Boegoeberg Dam and irrigation project in 1929, which created employment for many poor whites, and boosted growth in the region (Van Zyl 2010). The heritage landscape of the town also includes a historic water turbine driven by solid-oak gears in the Orange River on the farm Winstead build in 1913.

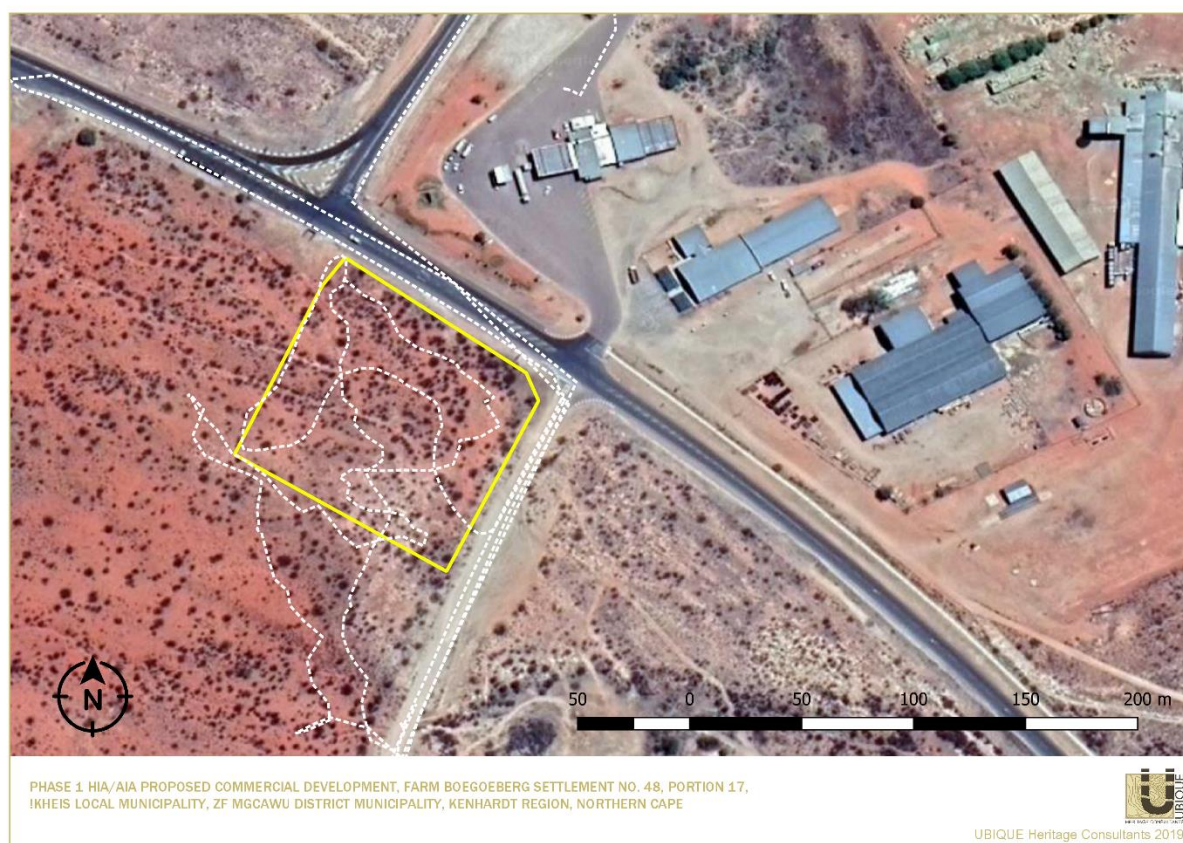
### 4. IDENTIFIED RESOURCES AND HERITAGE ASSESSMENT

#### 4.1 Surveyed area

A pedestrian survey of the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest, was completed. UBIQUE Heritage Consultants inspected the proposed development and surrounding areas facilities on the 20<sup>th</sup> of May 2019. The area surveyed was dictated by the Google Earth maps of the development footprints provided by the client.

We conducted an inspection of the surface of the ground, wherever the surface was visible. The archaeological survey was done with no substantial attempt to clear brush, sand, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures fortuitously observed.

Survey tracks were recorded with a handheld Garmin global positioning unit (Garmin eTrex 10) and Android Locus Maps application on Samsung Galaxy S9. Photographs were taken with a Samsung Galaxy S9.



**Figure 7** Survey track indicated on Google Earth Satellite Image.

## 4.2 Identified heritage resources

### 4.2.1 Archaeological Features

No Stone Age or Historical Period archaeological features were identified within the development footprint.

### 4.3.2 Intangible Heritage

No symbolic or ritual spaces were identified within the development footprint.

### 4.3.3 Graves

No formal or informal graves were identified within the development footprint.

### 4.3.4 Built Environment

No architectural features were identified within the development footprint.

#### 4.3.4 Palaeontological resources

The geology of the proposed development footprint is underlain by the Groblershoop Formation of the Brulpan Group (Namaqua-Natal Province). According to the SAHRIS PalaeoMap, the Groblershoop Formation, Brulpan Group which consist of quartzites, schists, and meta lavas, has a Zero Palaeontological sensitivity.

### 5. RECOMMENDATIONS

UBIQUE Heritage Consultants recommend that the project be exempt from a full Heritage Impact Assessment as it is highly unlikely that the development will negatively impact on any heritage resources.

1. No significant heritage resources were identified, and no further mitigation is required.
2. Due to the low palaeontological significance of the area, no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required pending the discovery of newly discovered fossils. Elize Bulter from Banzai Environmental recommends that the project be exempt from conducting a full PIA. It is considered that the proposed development is deemed appropriate and feasible and will not lead to detrimental impacts on the palaeontological resources of the area. In the event that fossil remains are discovered during any phase of construction, either on the surface or exposed by fresh excavations the Chance Find Protocol must be implemented by the ECO in charge of these developments (Butler 2019).
3. Although all possible care has been taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the assessment. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA.
4. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
5. UBIQUE Heritage Consultants and its personnel will not be held liable for such oversights or costs incurred as a result of such omissions.

## 6. CONCLUSION

No significant heritage resources were identified on Portion 17 of the Farm Boegoeberg Settlement No. 48, in the !Kheis Local Municipality, Z.F. Mgcawu District Municipality, Northern Cape. In the development footprint are no archaeological, historical or cultural sites, or paleontological resources of high significance that will be impacted negatively by the proposed development. We, therefore, recommend that the project be exempt from a full HIA and that the development continue.

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## ACTS

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## WEB

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- <https://sahris.sahra.org.za/declaredsites>
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# APPENDIX A

PALAEONTOLOGICAL EXEMPTION LETTER OF THE PROPOSED MIXED-USE COMMERCIAL DEVELOPMENT ON PORTION 17 OF FARM BOEGOEBERG SETTLEMENT NUMBER 48, !KHEIS LOCAL MUNICIPALITY IN THE NORTHERN CAPE PROVINCE.

**PALAEONTOLOGICAL EXEMPTION LETTER OF THE PROPOSED MIXED-USE  
COMMERCIAL DEVELOPMENT ON PORTION 17 OF FARM BOEGOEBERG  
SETTLEMENT NUMBER 48, !KHEIS LOCAL MUNICIPALITY IN THE NORTHERN CAPE  
PROVINCE**

**Compiled for:**

UBIQUE Heritage Consultants

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**23 June 2019**

### **Declaration of Independence**

I, Elize Butler, declare that –

General declaration:

- I act as the independent palaeontological specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting palaeontological impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in section 38 of the NHRA when preparing the application and any report relating to the application;
- I have no, 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;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- All the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected a palaeontological specialist in terms of the Act and the constitutions of my affiliated professional bodies; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the NEMA.

**Disclosure of Vested Interest**

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

**PALAEONTOLOGICAL CONSULTANT:**

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**CONTACT PERSON:**

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Email: elizebutler002@gmail.com

**SIGNATURE:**



## **EXECUTIVE SUMMARY**

Banzai Environmental was appointed by Ubique Heritage Consultants to conduct the Palaeontological Assessment for the mixed-use commercial development on portion 17 of farm Boegoeberg settlement number 48, !Kheis Local Municipality in the Northern Cape Province.

**This is a recommended exemption from further Palaeontological studies as the proposed development underlain by the Groblershoop Formation of the Brulpan Group which is igneous in origin or too highly metamorphosed to contain fossil heritage.**

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## 1 INTRODUCTION

Onjanha Trust proposes the development of a mixed-use development on portion 17 of farm Boegoeberg settlement number 48, !Kheis Local Municipality in the Northern Cape Province. The proposed mixed-use commercial development will consist of office space, a public garage with associated stores, suitable car parking and facilities that will serve the local community. The development will be 1.1971 hectares in extent (Figures1-4).

It must be emphasised that the garage will store **less than 30 000 litres of fuel on site in order not to trigger a Basic Assessment**

## 2 QUALIFICATIONS AND EXPERIENCE OF THE AUTHOR

The author (Elize Butler) has an MSc in Palaeontology from the University of the Free State, Bloemfontein, South Africa. She has been working in Palaeontology for more than twenty-four years. She has extensive experience in locating, collecting and curating fossils, including exploration field trips in search of new localities in the Karoo Basin. She has been a member of the Palaeontological Society of South Africa for 13 years. She has been conducting PIAs since 2014.



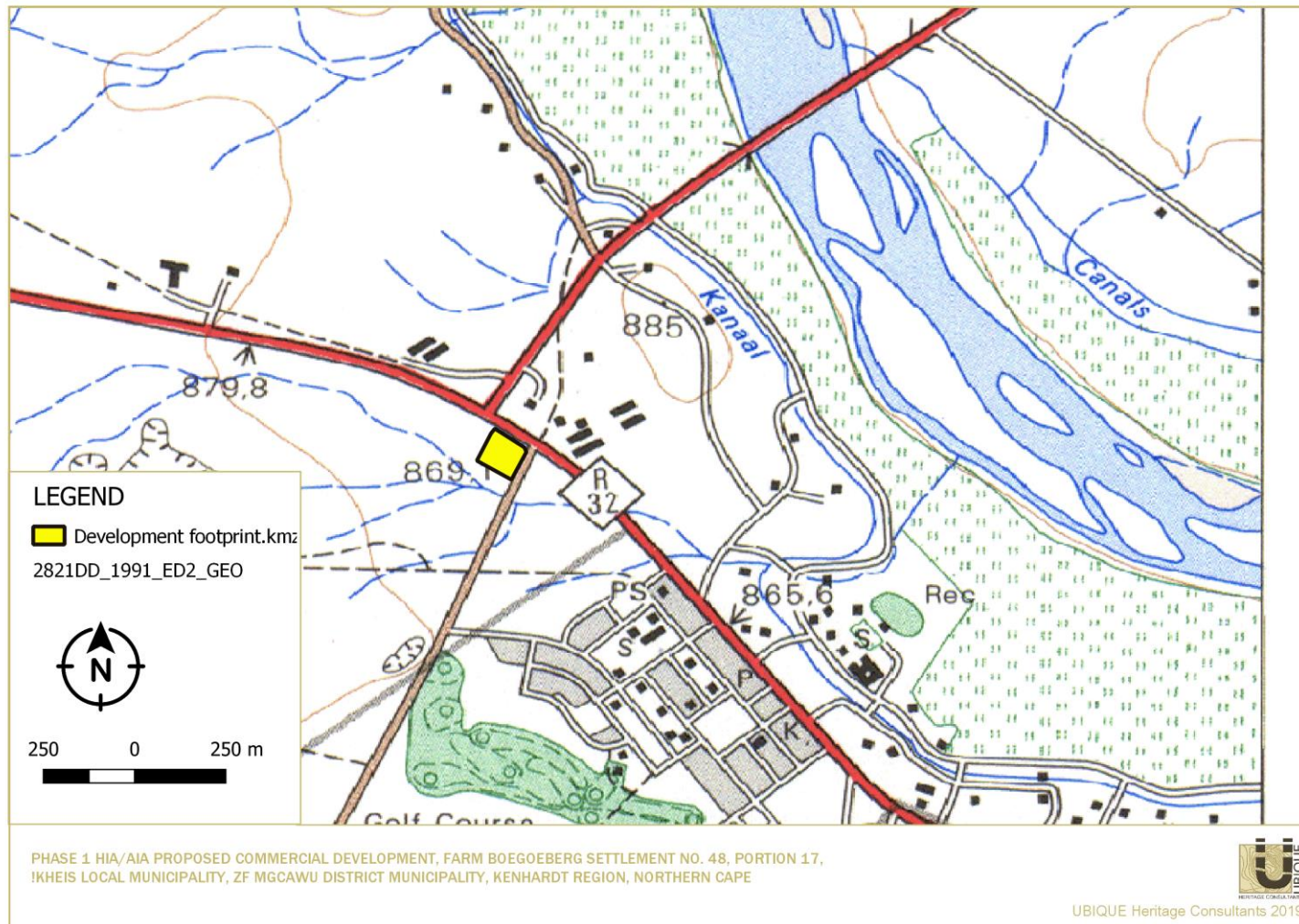


Figure 8: Topographical map of the mixed-use development on portion 17 of farm Boegoeberg settlement number 48, !Kheis Local Municipality in the Northern Cape Province. Map provided by Ubiqwe Heritage Consultants.

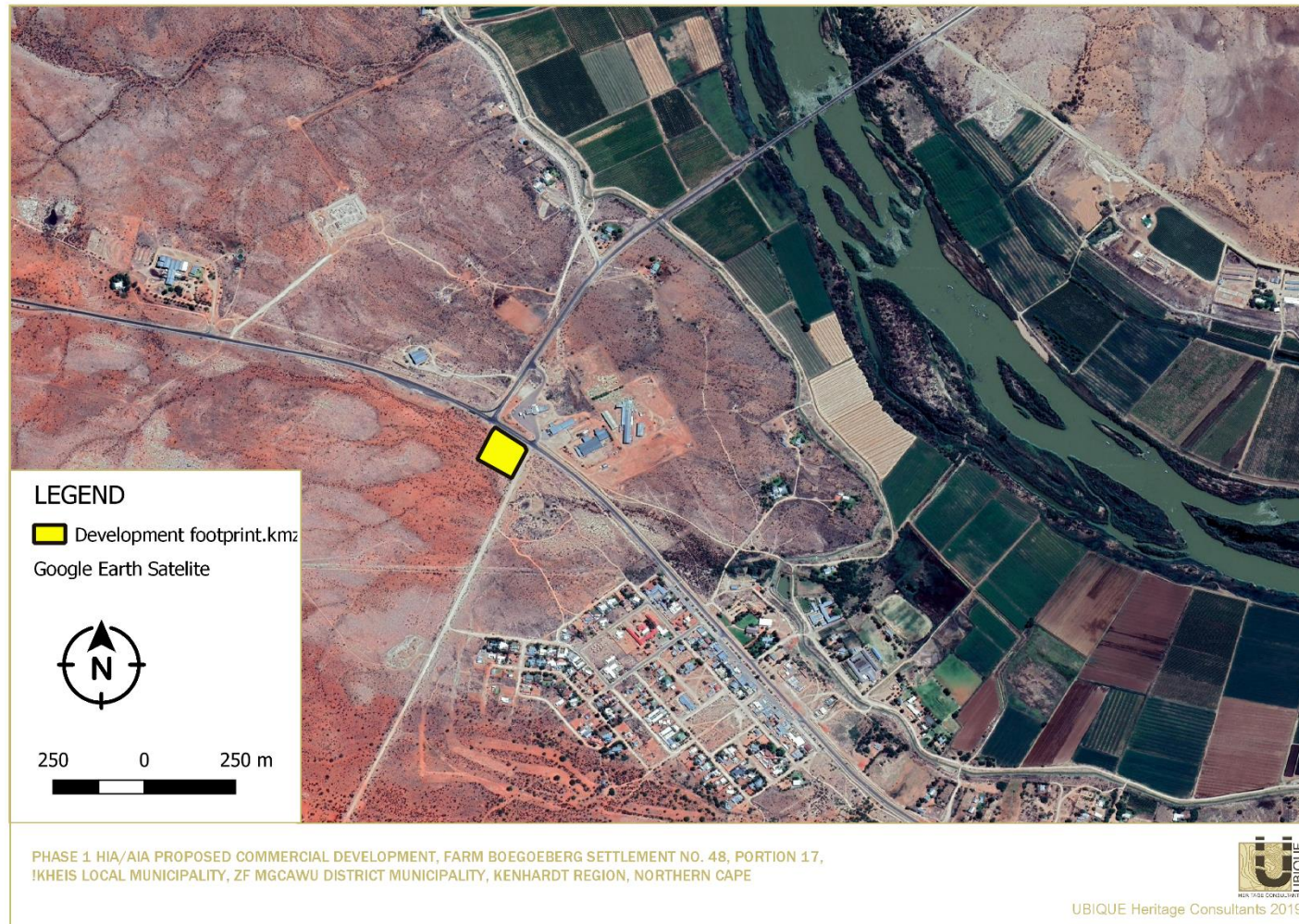


Figure 9: Google Earth Image of the proposed development. Map provided by Ubique Heritage Consultants.



Figure 10: Detailed Google Earth Image of the proposed development. Map provided by Ubiqum Heritage Consultants.

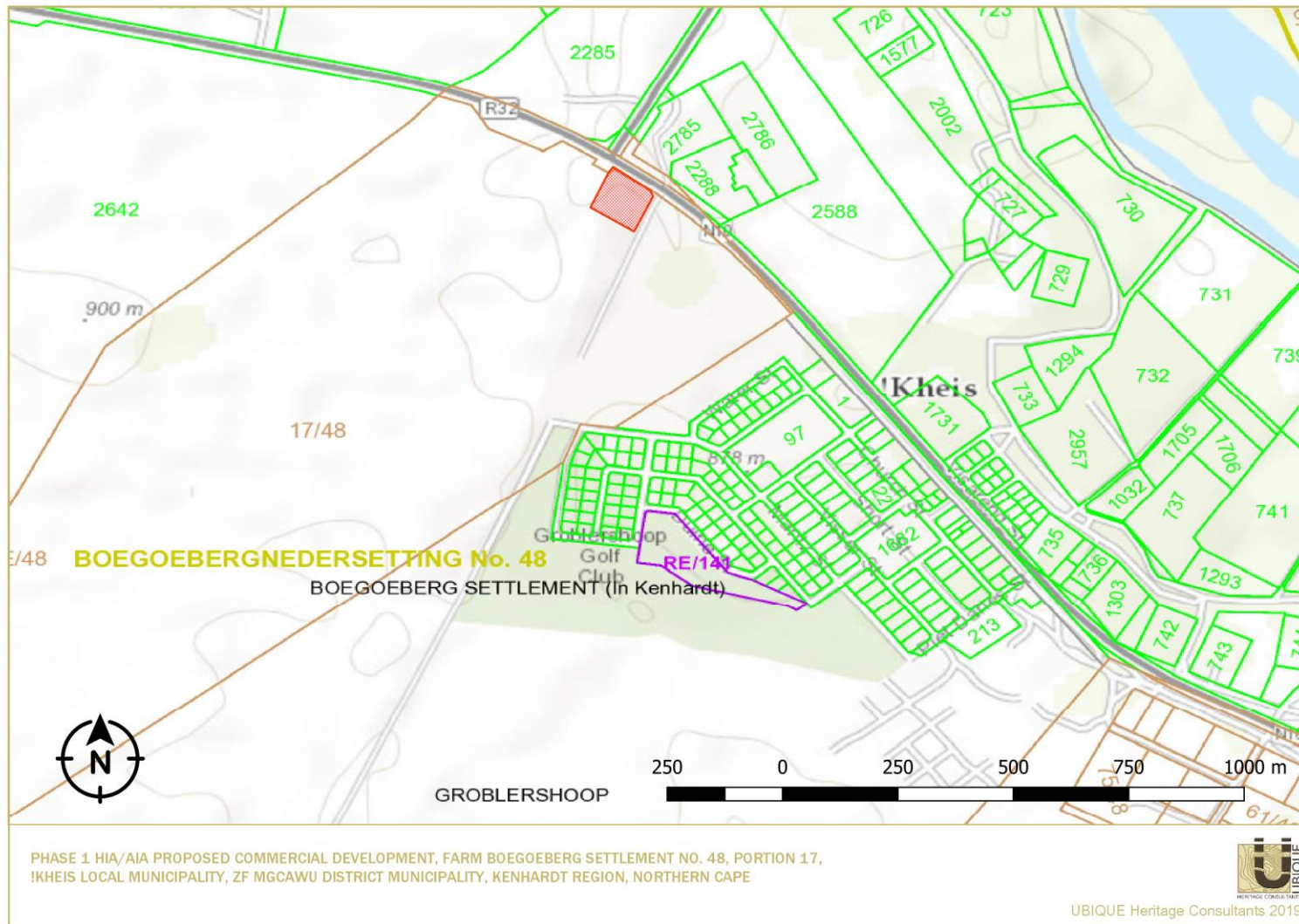


Figure 11: Locality of the proposed development. Map provided by Ubuque Heritage Consultants.

### 3 LEGISLATION

#### 3.1 National Heritage Resources Act (25 of 1999)

Cultural Heritage in South Africa, includes all heritage resources, is protected by the National Heritage Resources Act (Act 25 of 1999) (NHRA). Heritage resources as defined in Section 3 of the Act include **“all objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens”**.

Palaeontological heritage is unique and non-renewable and is protected by the NHRA. Palaeontological resources may not be unearthed, moved, broken or destroyed by any development without prior assessment and a permit from the relevant heritage resources authority as per section 35 of the NHRA.

This Palaeontological Desktop Assessment forms part of the Heritage Impact Assessment (HIA) and adheres to the conditions of the Act. According to **Section 38 (1)**, an HIA is required to assess any potential impacts to palaeontological heritage within the development footprint where:

- the construction of a road, wall, power line, pipeline, canal or another similar form of linear development or barrier exceeding 300 m in length;
- the construction of a bridge or similar structure exceeding 50 m in length;
- **any development or other activity which will change the character of a site— (exceeding 5 000 m<sup>2</sup> in extent; or**
- involving three or more existing erven or subdivisions thereof; or
- involving three or more erven or divisions thereof which have been consolidated within the past five years; or
- the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority
- the re-zoning of a site exceeding 10 000 m<sup>2</sup> in extent;
- alternatively, any other category of development provided for in regulations by SAHRA or a Provincial heritage resources authority.

### 4 GEOLOGICAL AND PALAEONTOLOGICAL HISTORY

The proposed mixed-use development on portion 17 of farm Boegoeberg settlement number 48, !Kheis Local Municipality in the Northern Cape Province is completely underlain by the Groblershoop Formation of the Brulpan Group (Figure 5). The Kalahari Formation lies directly north of the development footprint. The Groblershoop Formation consists of quartzites, schists, and meta lavas, which is volcanic in origin. This Formation does not contain any

fossils because they are igneous in origin or too highly metamorphosed (Almond & Pether 2008), and their palaeontological sensitivity is correspondingly low.



Figure 12: Extract of the 1:250 000 geological map of the Groblershoop indicating the approximate position of the proposed development (indicated in blue), on portion 17 of farm Boegoeberg settlement number 48, !Kheis Local Municipality in the Northern Cape Province. The development is underlain by the Groblershoop Formation.

Table 1: Legend to Map and a short explanation.

<b>Symbol</b>	<b>Group/Formation</b>	<b>Lithology</b>	<b>Approximate age</b>
<b>Mke</b>	<b>Keimos Suite</b>	<b>Undifferentiated granitoid</b>	<b>ca 1080 Ma</b>
<b>Mz</b>	<b>Zondehuis Fm</b>	<b>Quartzite, Phillite and greenstone</b>	<b>ca1300 Ma</b>
<b>Mg</b>	<b>Groblershoop Fm Brulpan Group</b>	<b>Quartzite, Schist and meta lavas</b>	<b>ca1800 Ma</b>



Figure 13: Extract of the 1 in 250 000 SAHRIS PalaeoMap map (Council of Geosciences). Approximate location of the proposed development is indicated in red

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

According to the SAHRIS Palaeosensitivity map (Figure 5), there is no chance of finding fossils in this area.

## 5 GEOGRAPHICAL LOCATION OF THE SITE

The proposed development is located on the N8 just outside the town of Groblershoop in the Northern Cape.

## 6 FINDINGS AND RECOMMENDATIONS

The proposed mixed-use development on portion 17 of farm Boegoeberg settlement number 48, !Kheis Local Municipality in the Northern Cape Province is completely underlain by the Groblershoop Formation of the Brulpan Group.

**This is a recommended exemption from further Palaeontological studies as the proposed development underlain by the Groblershoop Formation of the Brulpan Group which consist of quartzites, schists, and meta lavas.** This Formation does not contain any fossils because they are igneous in origin or too highly metamorphosed (Almond & Pether 2008), and their palaeontological sensitivity is correspondingly low.

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