

## ARCHAEOLOGICAL IMPACT ASSESSMENT

### PROPOSED DEVELOPMENT OF LOW-COST HOUSING ON ERVEN 5645, 23228 & 23229 UPINGTON, DAWID KRUIPER MUNICIPALITY, NORTHERN CAPE PROVINCE

Prepared for:

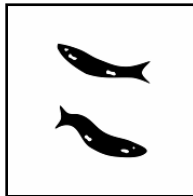
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## **Executive summary**

### *1. Introduction*

ACRM was appointed by Enviroafrica to conduct an Archaeological Impact Assessment (AIA) for a proposed low-cost housing development on Erven 5645, 23228 and 23229 in Upington (Dawid Kruiper Municipality) in the Northern Cape Province.

The proposed development site is located within the Paballelo Township area, to the northwest of Upington CBD. The proposed development footprint is about 45ha in extent, bordering on the existing urban edge. About two-thirds of the proposed site is already completely transformed as, a result of informal settlement.

Enviroafrica is the appointed independent Environmental Assessment Practitioner responsible for facilitating the Environmental Impact Assessment (EIA) process for Environmental Authorisation.

The Applicant is the Dawid Kruiper Municipality

### *2. Approach to the study*

A field-based AIA has been conducted by heritage practitioner/archaeologist, Mr Jan Engelbrecht of Ubique Heritage Consultants, on behalf of ACRM.

A desktop study has also been undertaken.

A palaeo-sensitivity statement has been completed by consulting palaeontologist, John Pether.

### *3. Aim*

The overall purpose of the study is to assess the sensitivity of archaeological resources that might be impacted by the proposed housing development, to determine the potential impacts on such resources, and to avoid and/or minimise such impacts by means of management and/or mitigation measures.

### *4. Constraints and limitations*

There were no constraints or limitations associated with the study. Access to the project area was easy and archaeological visibility was very good.

### *5. Findings*

#### *5.1 Archaeology*

A field assessment was conducted on 18 April 2023, by Ubique Heritage Consultants, in which the following observations were made.

- No Stone Age or historical archaeological heritage resources were recorded.
- Most of the site is already occupied by informal housing.

#### 4.2 Graves

No graves or typical grave features occur on the site.

#### 4.3 Palaeontology

According to consulting palaeontologist, John Pether (2023), the bedrock beneath Upington consists of unfossiliferous various gneisses, calcsilicates and granites of the Namaqua Metamorphic Province.

Pether (2023) notes that the surficial deposits (i. e. Kalahari red dune sands) are quite thin in Upington and consist of soil formed in stony bedrock regolith and calcrete pedocrete and is present over much of the area. The relatively shallow excavations of residential foundations and infrastructure will affect the surficial sands, stony soil, and the calcrete. Although the surficial deposits are rated as MODERATE/GREEN by the SAHRIS PalaeoMap, in fact the fossil potential is LOW (Almond & Pether, 2009). 'Trace fossils such as root casts and termite structures are common, but fossil bones are very rare' (Pether 2023:1).

#### 6. Anticipated impacts

The study has shown that no important archaeological or palaeontological heritage resources will be impacted by the proposed Upington 1 low-cost housing development.

#### 7. Conclusion

The overall impact significance of a proposed housing project on Stone Age archaeological heritage is assessed as LOW and therefore there are no objections to the development proceeding.

According to Pether (2023), the proposed housing project does not pose a threat to local palaeontological heritage resources.

#### 8. Recommendations:

1. No archaeological mitigation is required prior to construction excavations commencing.
2. If any human burials, or ostrich eggshell caches, for example, are uncovered during construction activities, work in the immediate area should be halted. The finds would need to be reported to the heritage authorities (Att: Ms Natasha Higgitt 021 462 4502) and will require inspection by a professional archaeologist.
3. An alert for the occurrence of bones and unrecorded burials, to be communicated to construction personnel, with the Fossil Finds Procedure to be followed in case of finds.

The above recommendations must be included in the Environmental Management Plan (EMP) for the proposed development.

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## 1. INTRODUCTION

ACRM was appointed by Enviroafrica to conduct an Archaeological Impact Assessment (AIA) for a proposed low-cost housing development on Erven 5645, 23228 and 23229 in Upington (Dawid Kruiper Municipality) in the Northern Cape Province (Figures 1-3).

The proposed development site is located within the Paballelo township area, to the northwest of the Upington CBD. The proposed development footprint is about 45ha in extent, bordering on the existing Upington urban edge. About two-thirds of the proposed site is already transformed because of illegal settlement, while the remainder of the site is quite severely degraded.

Enviroafrica is the appointed Environmental Assessment Practitioner responsible for facilitating the Environmental Impact Assessment (EIA) process for Environmental Authorisation.

The Applicant is the Dawid Kruiper Municipality

A field-based AIA has been conducted by heritage practitioner/archaeologist, Jan Engelbrecht of Ubique Heritage Consultants, on behalf of ACRM.

A palaeo-sensitivity statement has been produced by consulting palaeontologist, John Pether (Pether 2023).

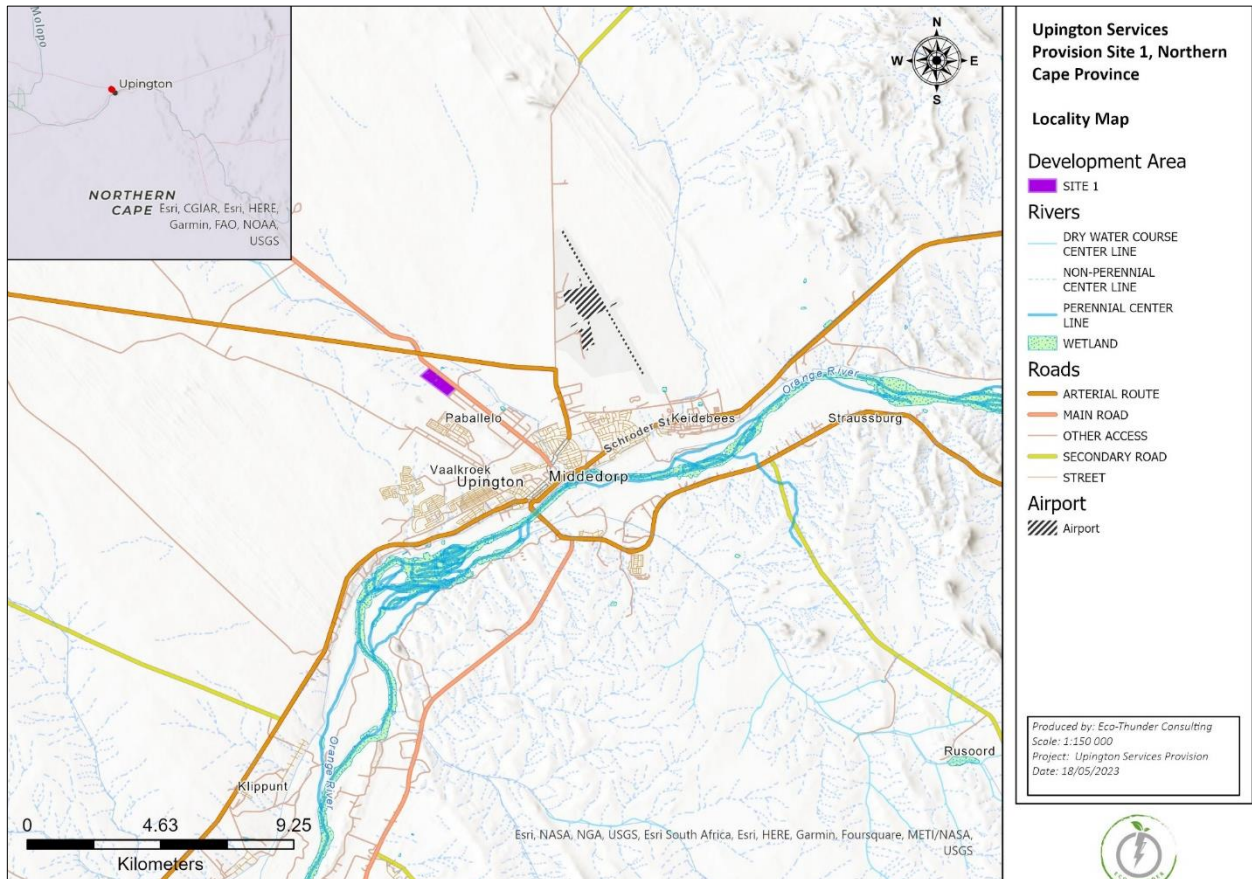


Figure 1. Arrow indicates the location of the proposed housing development site in Paballelo Township



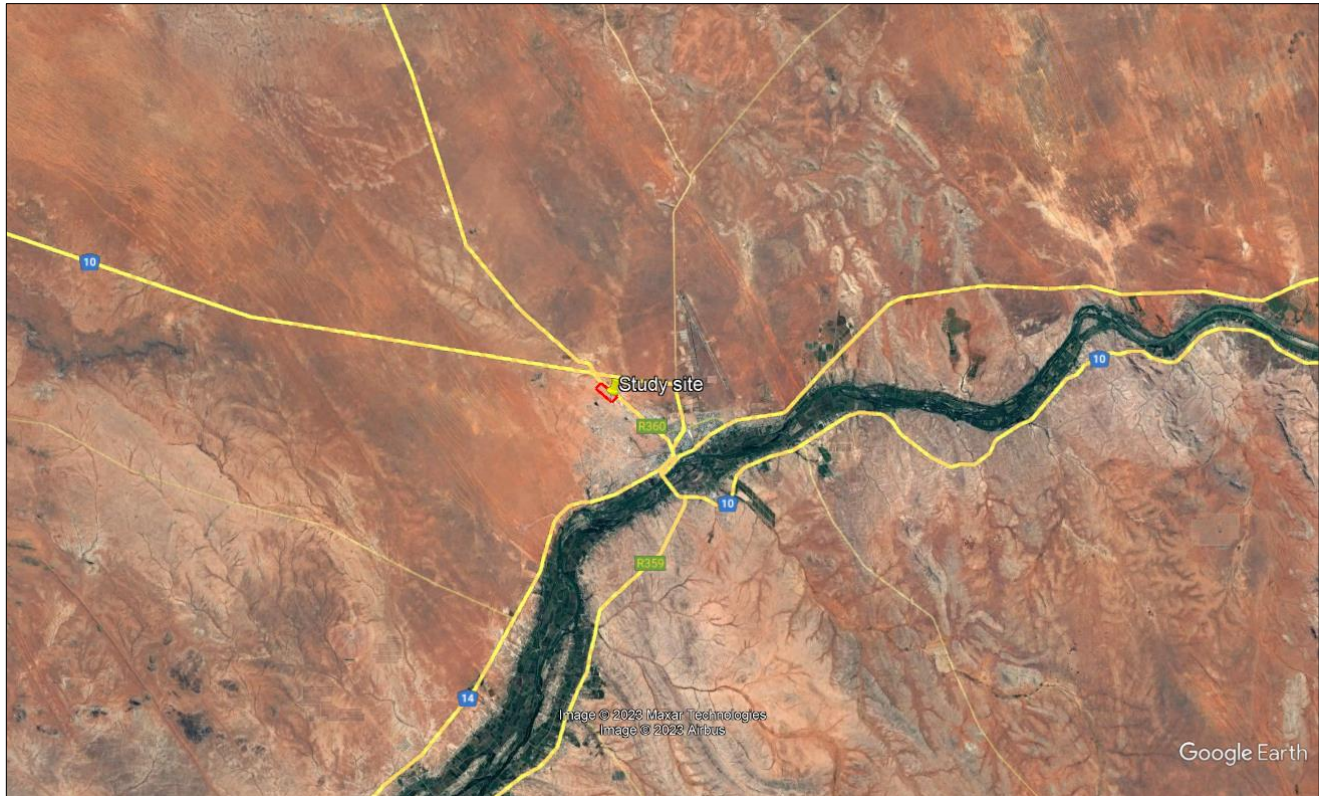


Figure 2. Google aerial satellite map showing the position (yellow pin) of the proposed development site in Upington

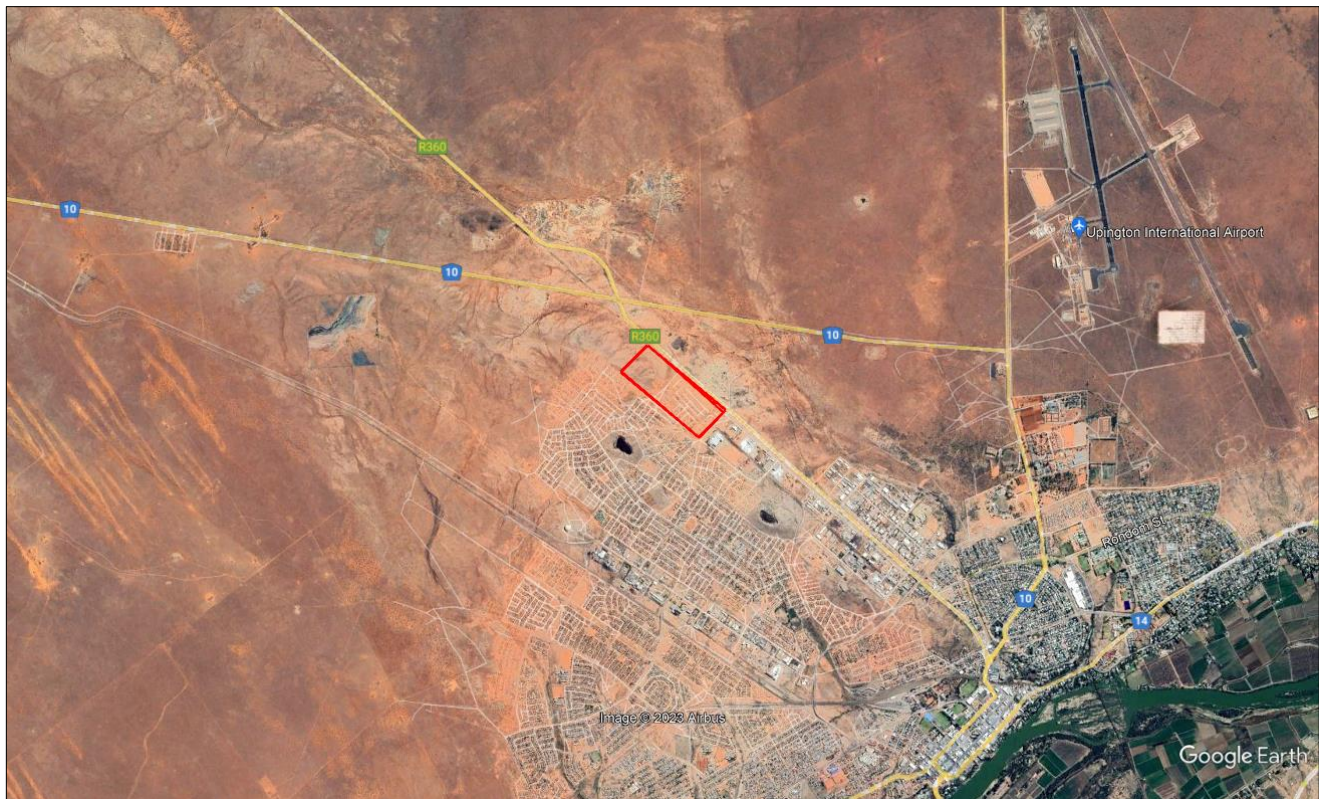


Figure 3. Close up Google satellite map of the proposed development site (red polygon) in Upington



## 2. THE DEVELOPMENT PROPOSAL

There is an urgent need for social housing development in Upington. The proposed development entails the Dawid Kruiper Local Municipality establishing a formal housing settlement on Paballelo Site 1, *i.e.*, a portion of New Brighton in the north-east of the township of Paballelo, next to the R360 Regional Road in Upington (Figure 4). The process of establishing a formal settlement on Paballelo Site 1 includes the establishment of formal housing, installing of water supply, wastewater disposal, stormwater management, formal road network, electricity supply and other relevant infrastructure as well as solid waste collection services.

The proposed site has been identified as suitable for 'upgrading' by the Spatial Development Framework of the Municipality. The proposed upgrade will contribute positively to the land value of the involved property as well as that of surrounding properties. The development will entail a high-quality, partly, temporary, and partly permanent, residential development that will greatly contribute to the western entrance of the town of Upington. The proposed development will also assist in contributing to the improvement of the standard of living of the current residents.

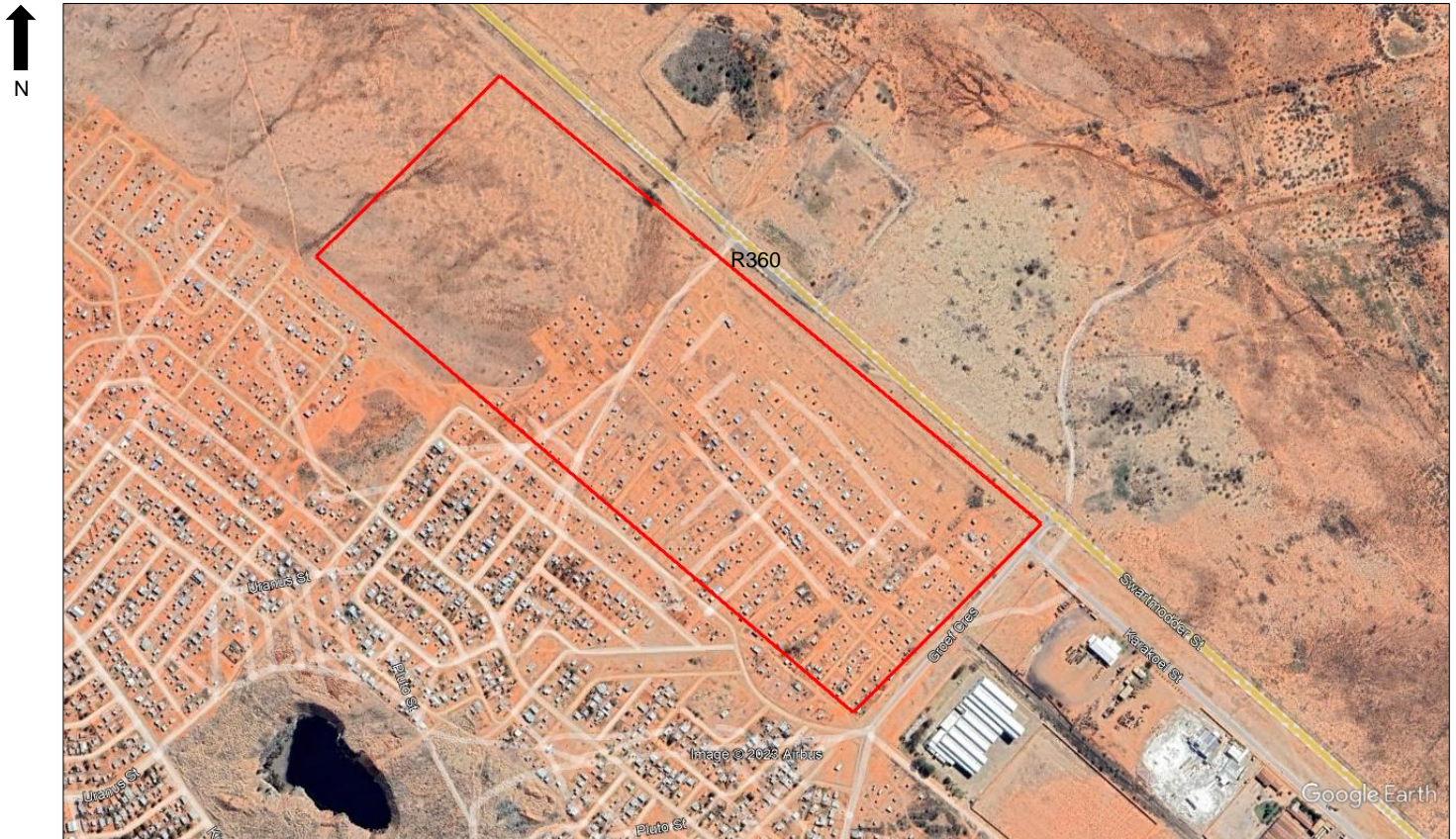


Figure 4. The proposed development site (red polygon) and the surrounding landuse

### **3. HERITAGE LEGISLATION**

The National Heritage Resources Act (NHRA No. 25 of 1999) protects archaeological and palaeontological sites and materials, as well as graves/cemeteries, battlefield sites, public monuments and buildings, structures and features over 60 years old. The South African Heritage Resources Agency (SAHRA) administers this legislation nationally, with Heritage Resources Agencies acting at provincial level.

According to the Act (Sect. 35), it is an offence to destroy, damage, excavate, alter or remove from its original place, or collect, any archaeological, palaeontological and historical material or object, without a permit issued by the South African Heritage Resource Agency (SAHRA) or applicable Provincial Heritage Resources Agency.

Notification of SAHRA is required for proposed developments exceeding certain dimensions (Sect. 38), upon which they will decide whether or not the development must be assessed for heritage impacts (an HIA) that may include an assessment of archaeological (a AIA) or palaeontological heritage (a PIA).

### **4. TERMS OF REFERENCE**

The terms of reference for the study were to:

- Record any archaeological resources that might be impacted by proposed development activities;
- Assess the sensitivity of archaeological within the proposed study area;
- Assess the significance of any impacts resulting from the proposed development, and
- Identify measures to protect any valuable archaeological resources that may exist within the study area.

### **5. DESCRIPTION OF THE RECEIVING ENVIRONMENT**

The proposed development site (S 28°25'29.63" E 21°12'45.92") is, located in the north-east of the township of Paballelo, next to the R360 Regional Road in Upington. It is estimated that about two-thirds of the proposed site area has already been transformed because of (illegal) informal housing settlement. The remainder of the property is open veld, in a flat featureless landscape (Figures 5-11). The property is not used for any specific purpose, but the local community is likely to have used the veld for livestock grazing and are now converting it into an area for illegal settlement.

Within the footprint, there are two small episodic drainage lines, one to the north of the site and one to the south. Both drain into the rocky plains and do not link up to any water course or wetland area. There are no other sources of natural water on sites, such as springs, or streams. At present the southern drainage line has now become a drainage line for wastewater from the illegal settlement itself.





Figure 5. View of the proposed development site facing north (Ubique Heritage Consultants)



Figure 6. View of the proposed development site facing northwest (Ubique Heritage Consultants)





Figure 7. View of the proposed development site facing west (Ubique Heritage Consultants)



Figure 8. View of the proposed development site facing west (Ubique Heritage Consultants)





Figure 9. View of the proposed development site facing southwest (Ubique Heritage Consultants)



Figure 10. View of the proposed development site facing south (Ubique Heritage Consultants)





Figure 11. View of the proposed development site facing southeast (Ubique Heritage Consultants)

## **6. STUDY APPROACH**

### **6.1 Method**

The purpose of the study is to assess the sensitivity of archaeological resources in the study area, to determine the potential impacts on such resources, and to avoid and/or minimize such impacts by means of management and/or mitigation measures.

A field assessment survey was undertaken by Ubique Heritage Consultants on 15 May 2023. A track path of the survey was also captured.

A desktop study was carried out to assess the heritage context surrounding the proposed site. The literature survey included mostly unpublished commercial reports sourced from the South African Heritage Resources Information System (SAHRIS).

### **6.2 Constraints and limitations**

There were no constraints or limitations associated with the study. Access to the site was easy and ground visibility was very good.

### **6.3 Identification of potential risks**

The results of the field study indicate that a proposed housing development on Erven 5645, 23228 & 23229 in Upington will not impact on important archaeological resources.

## 6.4 Archaeological context

A handful of commercial archaeology surveys have been conducted in Upington. These studies have focused mostly on agriculture, service delivery such as housing, potable water and wastewater treatment, and alternative energy projects outside the urban edge. The studies have shown that stone artefact frequencies in the Upington area tend to be low, temporally mixed and occurring in an isolated and degraded/displaced context (Beaumont 2006a, b, c, d, 2008; Kaplan 2016, 2008; Dreyer 2011; Orton 2013; Van Schalkwyk 2021, 2014a, b, c; Nilssen 2012). Middle Stone Age (MSA) sites older than 20 000 years are rare, but small scatters of tools have been encountered in the area, and Early Stone Age (ESA) tools such as handaxes, cleavers cores and blades have been documented north of the town (Morris 2014, Morris 2010, 2012; Kaplan 2013a & b). In contrast Morris (2014) notes that there are substantial herder encampments along the floodplain of the Orange/Gariep River, but these tend to be short duration visits by small groups of hunter-gatherers. Most of these camps have unfortunately been destroyed by intensive agricultural development along the river floodplain.

## 7. RESULTS

### 7.1 Archaeology

No Stone Age heritage resources were recorded on the proposed development site (Figure 12).

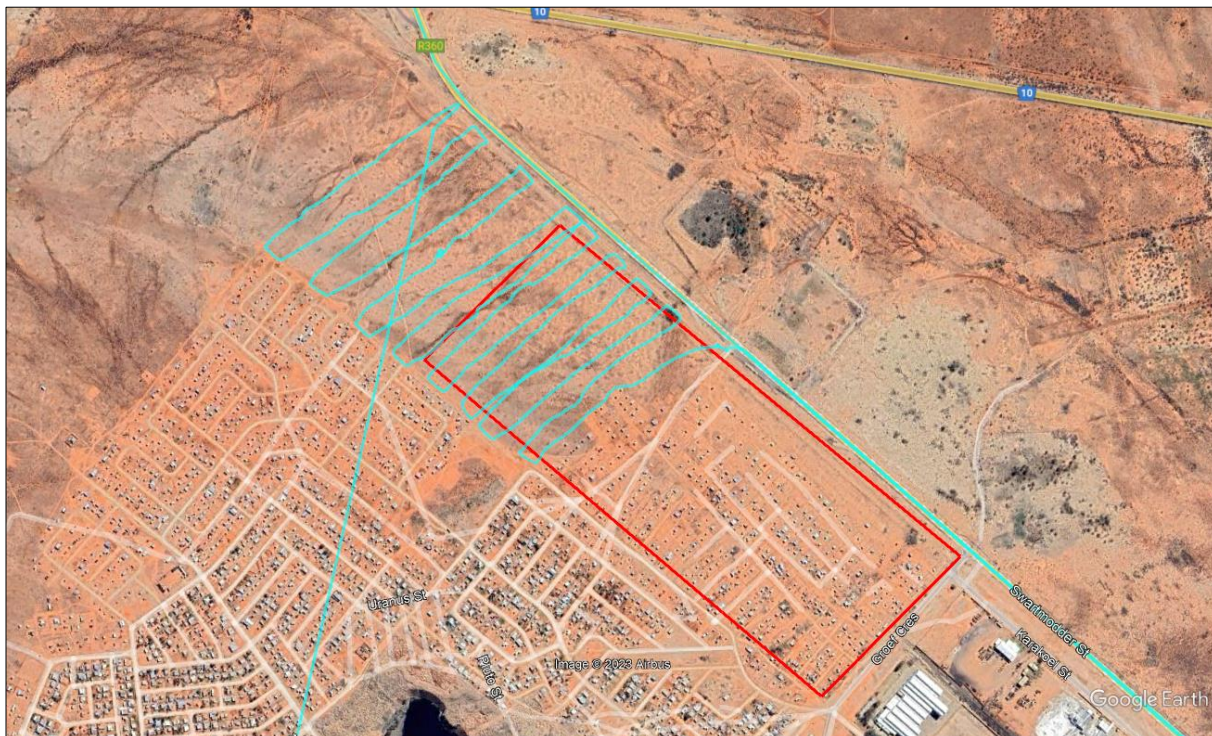


Figure 12. Trackpaths in blue (Ubique Heritage Consultants May 2023)

### 7.2 Graves

No graves, or typical grave features such as stone cairns occur on the site.



### 7.3 Palaeontology

According to Pether (2023), the bedrock beneath Upington consists of unfossiliferous various gneisses, calcsilicates and granites of the Namaqua Metamorphic Province. Pether (2023) notes that the surficial deposits (i. e. Kalahari red dune sands) are quite thin in Upington and consist of soil formed in stony bedrock regolith and calcrete pedoconcrete and is present over much of the area. The relatively shallow excavations of foundations and infrastructure will affect the surficial sands, stony soil, and the calcrete. Although the surficial deposits are rated as MODERATE/GREEN by the SAHRIS PalaeoMap, in fact the fossil potential is LOW (Almond & Pether, 2009). Trace fossils such as root casts and termite structures are common, 'but fossil bones are very rare'.

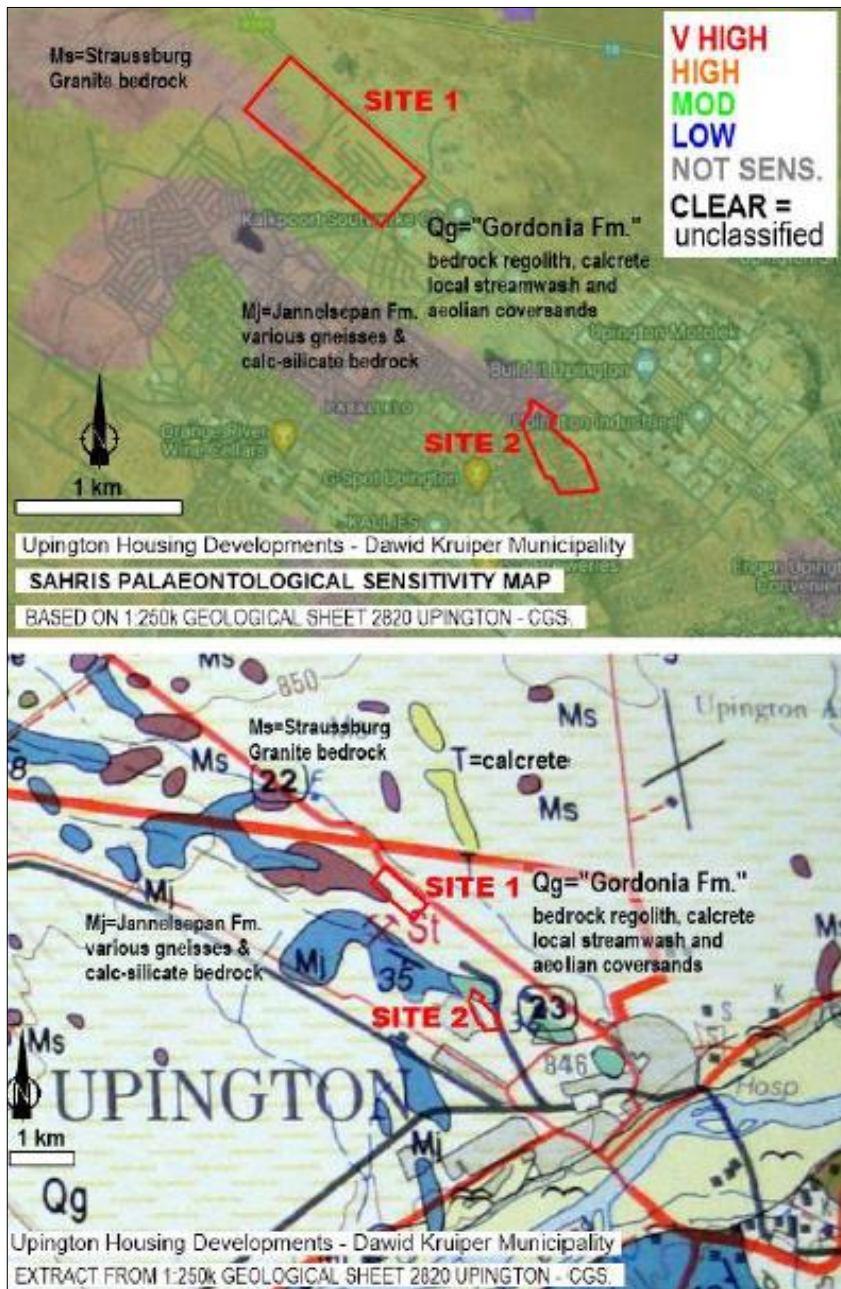


Figure SAHRIS palaeo-sensitivity & geological map (Pether 2023)



## **8. IMPACT STATEMENT**

The field assessment of on Erven 5645, 23228 & 23229 Upington has identified no impacts to pre-colonial archaeological heritage that will need to be mitigated prior to proposed construction activities commencing.

## **9. CONCLUSION**

The survey has shown that the proposed development site is not a sensitive archaeological landscape.

The overall impact significance of the proposed Upington housing project (on ) is assessed as LOW and therefore there are no objections, to the proposed activities proceeding.

According to Pether (2023), the proposed housing project does not pose a threat to local palaeontological heritage resources.

## **10. RECOMMENDATIONS**

Regarding a proposed low-cost housing project on Erven 5645, 23228 & 23229 (Dawid Kruijer Municipality), in Upington, the following recommendation are made:

1. No archaeological mitigation is required is required prior to construction activities commencing.
2. If any human burials, or ostrich eggshell caches, for example, are uncovered during construction activities then work in the immediate area should be halted. The find would need to be reported to the heritage authorities (Att Ms Natasha Higgitt 021 462 4502) and will require inspection by a professional archaeologist.
3. An alert for the occurrence of bones and unrecorded burials, to be communicated to construction personnel, with the Fossil Finds Procedure to be followed in case of finds.

The above recommendations must be included in the Environmental Management Plan (EMP) for the proposed development.

## 11. REFERENCES

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