

A vertical image showing raindrops on a window pane. A bright rainbow is visible in the center, with colors transitioning from red at the top to purple at the bottom. The background is a mix of blue, green, and yellow, suggesting a bright sky behind the glass.

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Heritage Impact Assessment for the proposed prospecting of Farms Ramons Drift 24 and Homs 25

Prepared by Pulafel 4D Consulting (Pty) Ltd

Report prepared for Felicity Cecelia Links

15 May 2023

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Executive Summary

Table 1: Project summary

Item	Description
Proposed development and location	The proposed prospecting on Farms Ramons Drift 24 and Homs 25 lies 110km North-East from Springbok, Namakwa District, Northern Cape
Purpose of study	To carry out a field-based Heritage Impact Assessment to determine the presence/absence of cultural heritage sites and the impact of the proposed project on heritage resources within the areas demarcated for the proposed prospecting.
Municipalities	Namakwa District Municipality
Predominant land use of surrounding area	Commercial mining and agriculture
Developer	Felicity Cecelia Links
Contact Details	0844487008
Heritage Consultant	Pulafel 4D Consultants (Pty) Ltd
Date of Report	15 May 2023

Pulafel 4D Consulting (Pty) Ltd. was commissioned by Ms. Felicity Links to do a field based HIA for a prospecting rights application on Farm Ramons Drift 24 and Homs 25. The areas identified for the proposed development is 110 km North-East from Springbok, situated in the Namakwa District Municipality. Ramons Drift 24 and Homs 25 are in the arid Namakwa region of the Northern Cape. The area is characterised by exposed bedrock granite rocks of various sizes, huge granite and gneiss domes, rounded hills, steep rocky slopes, and open veld with shallow soils colonized by shrubs and succulents. The landscape in the broader area is substantially disturbed by existing and granite mining in surrounding area as well as past mining activities. Landscape surface visibility was relatively good at the time of the visit in terms of observing surface archaeological traces despite dense vegetation cover in some areas.

Given the extent of the area to be covered, a combination of drive-through and field walking was conducted in the Farms. In all the surveyed areas, the precolonial archaeology is represented by a mixture of MSA and LSA lithic scatters. Even so, the lithics are of low impact (negligible) rating because of their isolated context. Various historical structures also occur within the current footprint, but these are not threatened at all by the proposed development. Therefore, from a heritage perspective, the proposed development by Ms. Felicity Cecelia Links is supported, with full cognizance that buried archaeological remains may still occur and chance findings report procedures must be followed when encountered.

Table of contents

EXECUTIVE SUMMARY

ABBREVIATIONS

DOCUMENT INFORMATION

INTRODUCTION AND BACKGROUND TO PROJECT

LEGISLATIVE REQUIREMENTS

METHODOLOGY

HERITAGE ASSESSMENT AND REPORT COMPILATION

BACKGROUND TO THE ARCHAEOLOGY AND HERITAGE HISTORY OF THE AREA

DESCRIPTION OF THE AFFECTED ENVIRONMENT

SITE SIGNIFICANCE

GRADING

RECOMMENDATIONS

CONCLUSIONS

ACKNOWLEDGENTS

BIBLIOGRAPHY

ABBREVIATIONS

AIA:	Archaeological Impact Assessment
ASAPA:	Association of South African Professional Archaeologists
EIA:	Environmental Impact Assessment
EIA:	Early Iron Age (EIA refers to both Environmental Impact Assessment and the Early Iron Age but in both cases the acronym is internationally accepted. This means that it must be read and interpreted within the context in which it is used.)
EIAR:	Environmental Impact Assessment Report
ESA:	Early Stone Age GPS Global Positioning System
HIA:	Heritage Impact Assessment
ICOMOS:	International Council of Monuments and Sites
LIA:	Late Iron Age
LFC:	Late Farming Community
LSA:	Late Stone Age
MAA:	Mineral Amendment Act, No 103 of 1993
MIA:	Middle Iron Age
MPRDA:	Mineral and Petroleum Resources Development Act 28 of 2002
MSA:	Middle Stone Age
NEMA:	National Environmental Management Act 107 of 1998 NHRA National Heritage Resources Act 25 of 1999
NID:	Notice of Intention to Develop
PHRA:	Provincial Heritage Resource Agency
SAHRA:	South African Heritage Resources Agency T
TOR:	Terms of Reference

DOCUMENT INFORMATION

Periodisation

Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below:

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

Definitions

Just like periodisation, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best-practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture, or archaeology of human development.

Cultural significance is determined means of aesthetic, historic, scientific, social or spiritual values for past, present or future generations.

Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

In-situ refers to material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Archaeological site/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artifacts, human and

hominid remains, and artificial features and structures. According to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), no archaeological artefact, assemblage, or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorization from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority.

Historic material are remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

Chance finds means archaeological artefacts, features, structures or historical remains accidentally found during development.

A grave is a place of interment (variably referred to as burial) and includes the contents, headstone, or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery (contemporary) or burial ground (historic).

A site is a distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Heritage Impact Assessment (HIA) refers to the process of identifying, predicting, and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project which requires authorization of permission by law, and which may significantly affect the cultural and natural heritage resources. Accordingly, a HIA must include recommendations for appropriate mitigation measures for minimizing or circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Impact is the positive or negative effects on human well-being and / or on the environment.

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the prehistorical, historical or the relatively recent past.

Study area or 'project area' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data and limited field walking to establish the presence of all possible types of heritage resources in any given area.

Assumptions and disclaimer

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. Human burials can occur in unpredictable locations. It should be remembered that archaeological deposits (including graves and paleontological remains) usually occur below the ground level. Should this material be revealed during construction, such activities should be halted immediately, and a competent heritage practitioner and SAHRA must be notified in order for an investigation and evaluation of the find(s) to take place [cf. NHRA (Act No. 25 of 1999), Section 36 (6)]. Recommendations contained in this document do not exempt the developer from complying with any national, provincial, and municipal

legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. Pulafel 4D Consulting assumes no responsibility for compliance with conditions that may be required by the PHRA or SAHRA in terms of this report.

Terms of Reference (TOR)

Pulafel 4D Consulting Pty Ltd was engaged to do a field-based Heritage Impact Assessment. The objectives for doing a HIA are to:

- Review applicable legislative requirements, identify all objects, sites, occurrences, and structures of an archaeological or historical nature (cultural heritage sites) located on the property,
- Assess the significance of the cultural resources in terms of their archaeological, historical scientific, social religious, aesthetic, and tourism,
- Describe the possible impact of the proposed development on these cultural remains, according to standard set conventions,
- Where there is a need, recommend suitable mitigation measures and

INTRODUCTION AND BACKGROUND TO THE PROJECT

Pulafel 4D Consulting (Pty) Ltd was appointed by Felicity Links to carry out an Archaeological and Heritage Impact Assessment of the proposed prospecting activities on the Farms Ramons Drift 24 and Homs.

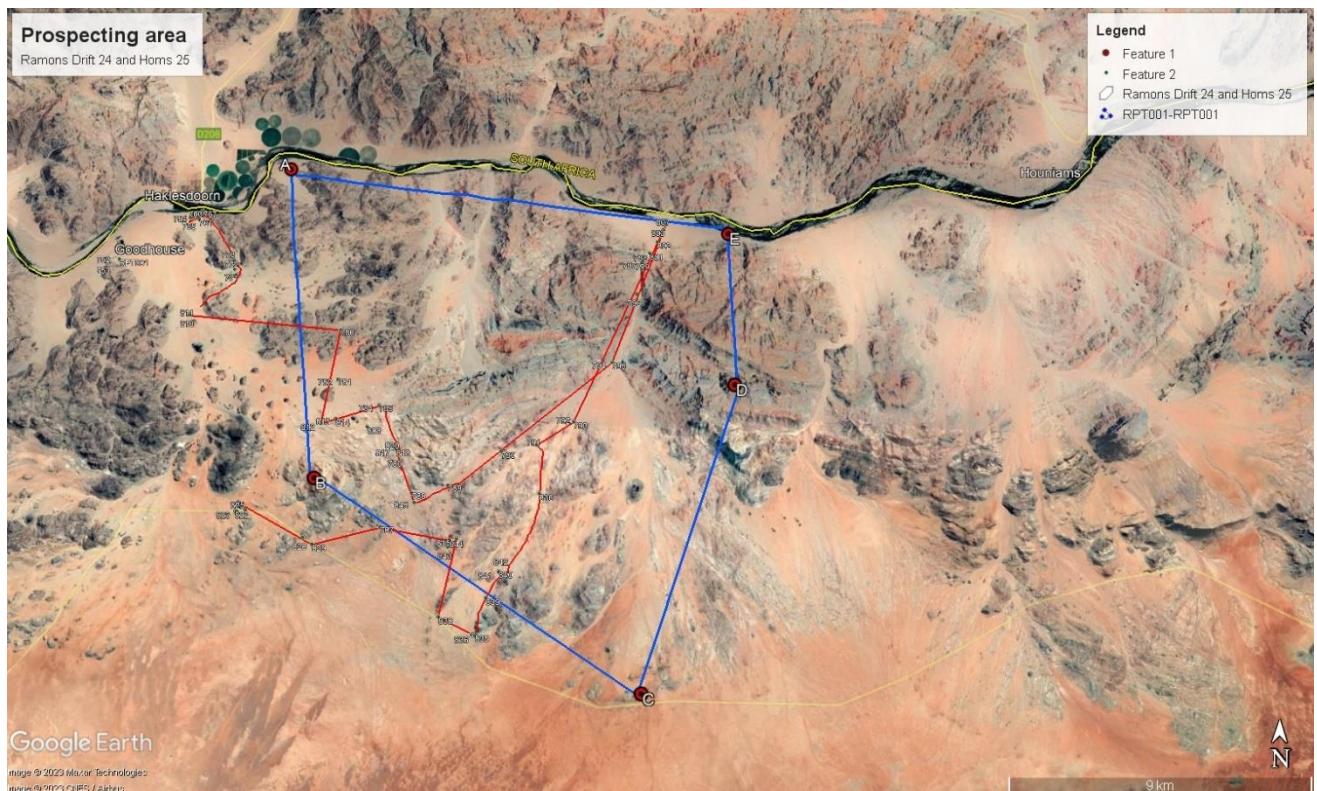


Figure 1: Prospecting area (Google Earth image)

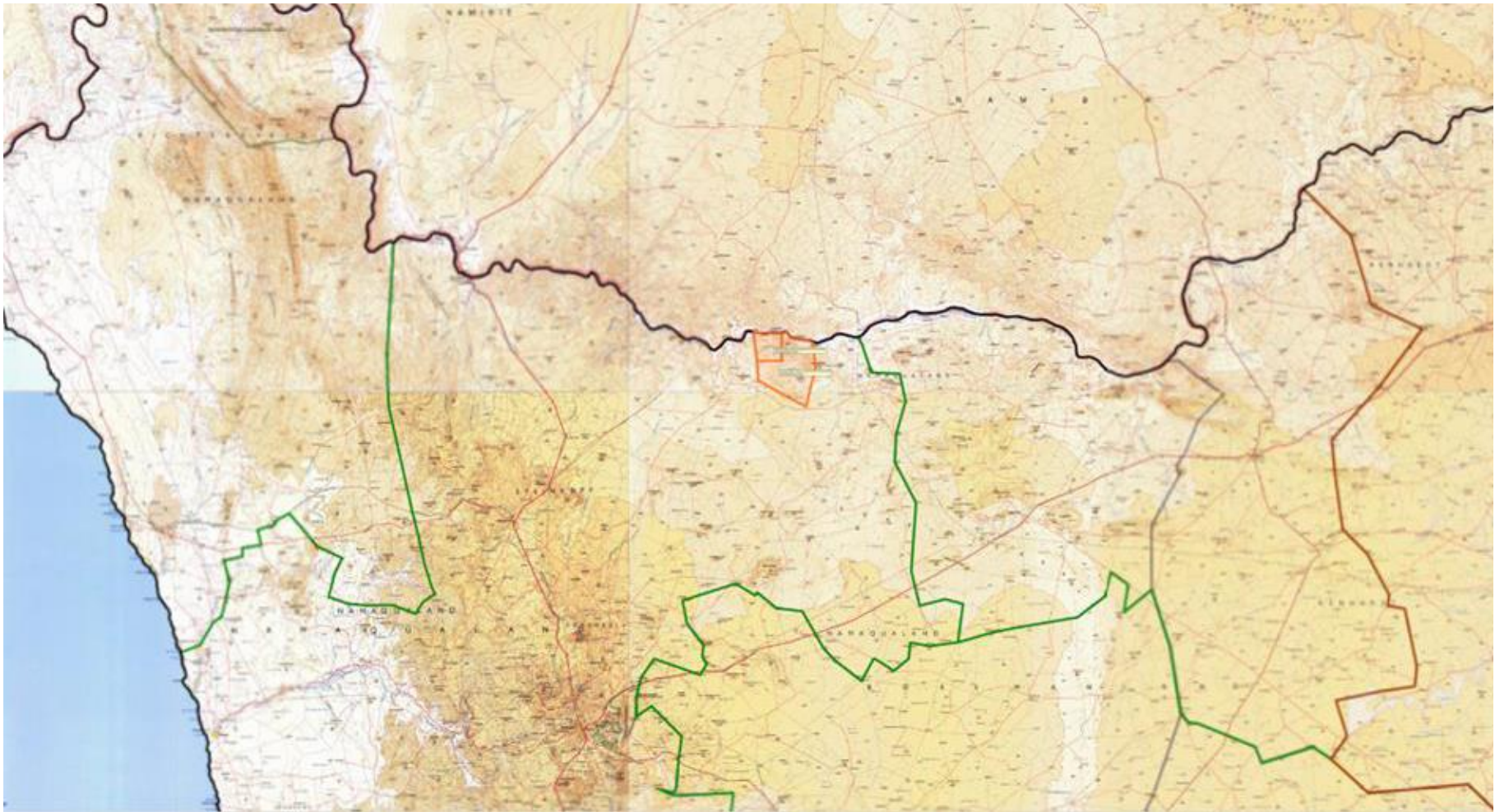


Figure 2: Location of prospecting area

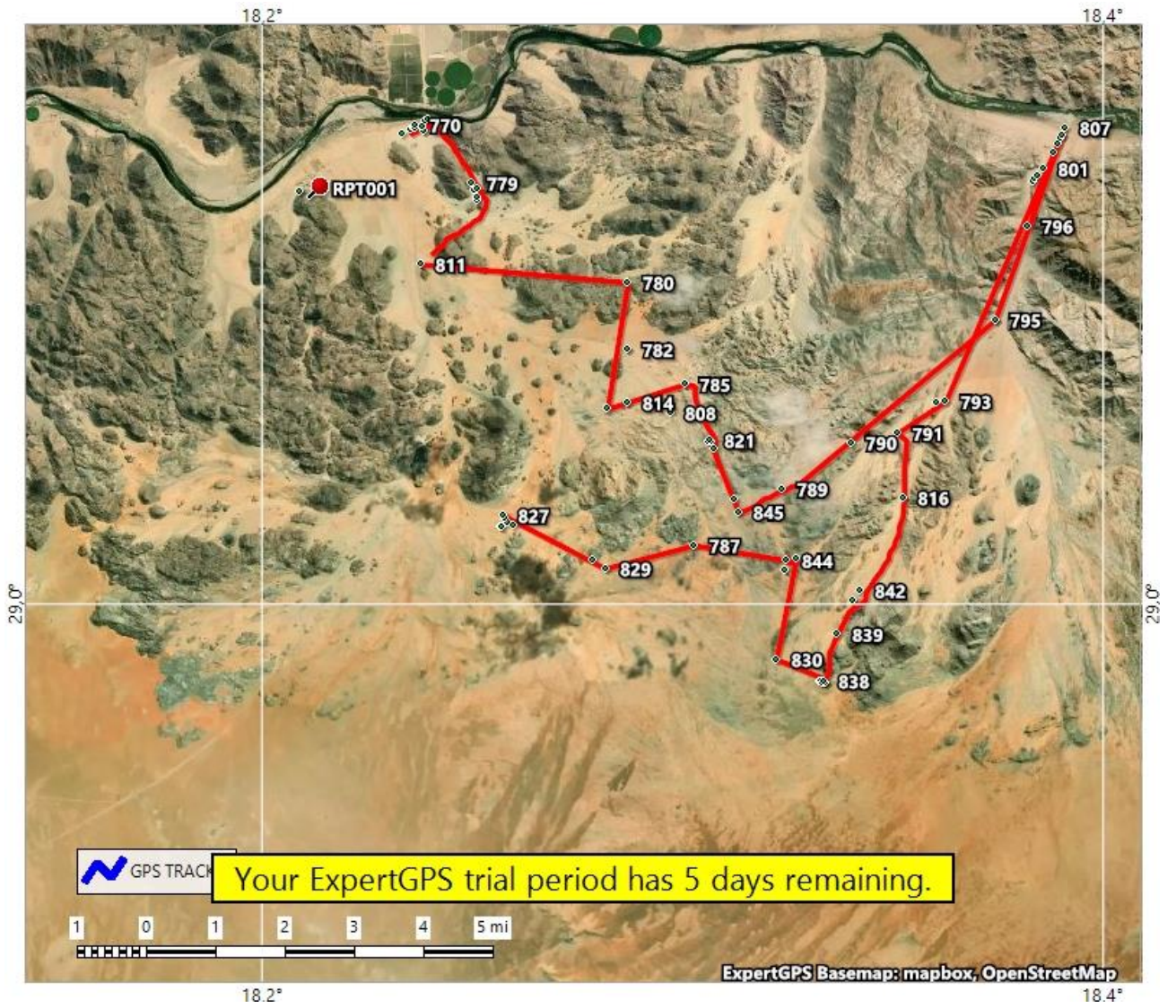


Figure 3: ExpertGPS track for study area

The bio- physiography character of the landscape

The geology of the study area was studied by Coetzee (1941). It is characterised by intrusive granites which carry a profusion of sedimentary xenoliths of the Kheis Series. Coetzee survey the geology of the area between Goodhouse and Pella. The landscape is characterised by ragged hills and mountains and valleys. The mountains clearly show evidence of plate tectonic where in the form of two continental plates moved towards each other. The results were the formation of folding mountains with a south or southeast inclination. There are slopping plains, rocky hills and mountains. In the same landscape *Kagnasaurus* and *extracods* were recorded in the volcanic lake sediments from Kangas near Goodhouse on Orange River (Rogers 1913, Haughton 1915, Cooper 1985, De Wit et al 1992, Agenbacht 2007, Almond 2008). The soils in the study area are predominantly red to yellowish sandy soils.



Figure 4: Folding mountains in the study area



Figure 5: Folding Mountain/hill inclined towards the south. The rocks are highly weathered and mechanical weathering is the most predominant process.



Figure 6: Southward inclination of folding mountain in the study area indicating block mechanical weathering.



Figure 7: Southward inclination of folding mountain in the study area indicating block mechanical weathering. Trees also growing on the rocks causing the biological weathering process of the rocks.



Figure 8: Quartz hill with mica and feldspar minerals

Vegetation

The study area is devoid of vegetation except for scattered bushes and certain xerophytes. The vegetation comprises typical desert shrub and desert grass, which increase in abundance towards the east and outside the bare canyon of the Orange River. The green trees are found along the banks of the Orange River, thus marking the riverbanks. These are some of the alluvial vegetation that occur with the riparian zones limited to macro-channel banks. Goodhouse comprises of scattered perennial dwarf shrubs, few scatters of the *Aloe dichotoma*. The areas between the hills are vegetated by *Stipagrotis* species in some areas, however, much flat spaces are characterised by shrubs and herbs (Mucin and Rutherford 2006). The study area is also sparsely dotted with with the Sherpard's tree (*Boscia albitrunca*), *Hoodia gordonii*, *Klein longifolia*, and *Euphobia avasmontana* (Cook 2013).



Figure 9: Orange River with green trees on its banks



Figure 10: *Boscia albitrunca* in open spaces that interrupt the hills



Figure 11: *Hoodia gordonii* growing on rocks.



Figure 12: *Klein longifolia*



Figure 13: *Euphobia avasmontana*



Figure 14: *Aloe dichotoma* growing on a rocky hill.



Figure 15: Tree growing on bare rocks with very shallow soil.



Figure 16: Landscape view showing open areas between hills with vegetation patches.

LEGISLATIVE REQUIREMENTS

Archaeological patrimony is finite as it is non-renewable and hence it needs to be sustainably utilized. This ensured by putting in place protective legislations. Numerous Acts are incorporated into legislation to provide for the protection of archaeological and heritage resources in South Africa. Overarching these is the Constitution of South Africa Act No 108 of 1996. The National Heritage Resources Act (NHRA), Act 25 of 1999, the Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA), the National Environmental Management Act (NEMA) 107 of 1998 section 39 (3) (b) (iii) the National Environment Management Protected Areas Act No 57 of 2003 (NEMPAA), and the Human Tissues Act (HTA) 65 of 1983 as amended. The Environment Management Biodiversity Act of 2004, Act No 10 of 2004, is one of the pieces of legislation that help in the protection of the various forms of the South African heritage. The National Heritage Resources Act (NHRA) no 25 of 1999 is the most relevant of these as it provides for the protection of the following resources:

- a) palaeontological and archaeological deposits, objects and sites,
- b) built structures older than 60 years,
- c) burial grounds and graves which include graves younger than 60 years; graves older than 60 years; graves of victims of conflict and or graves of individuals of royal descent, as well as
- d) cultural landscapes.

The NHRA (No. 25 of 1999) is a piece of legislation that defines heritage resources of cultural significance or other special value for the present community and for the posterity that are considered part of the national estate such as “places, buildings, structures and equipment of cultural significance; places that are associated with oral traditions are attached, historical settlements, and townships landscapes and natural features of cultural significance; geological sites of scientific or cultural importance; archaeological and palaeontological sites; or graves and burial grounds, including ancestral graves; royal graves and graves of traditional leaders; graves of victims of conflict; graves of individuals designated by the Minister by notice in the Gazette; historical graves and cemeteries; and other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983); sites of significance relating to the history of slavery in South Africa; movable objects, including objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens; objects to which oral traditions are attached or which are associated with living heritage; ethnographic art and objects”

According to NHRA Act 1999, developments which alter the character of a site, and, which exceed prescribed limitations require specialist assessment. These activities trigger the need for Heritage Impact Assessments (HIA) and are listed in sections 34, 35 and 38. The limitations are listed below:

Section 34(1) No person may alter or demolish any structure or part of a structure which is more than 60 years old without permission by the relevant provincial heritage resources authority.

Section 35(4) No person may, without a permit issued by the responsible heritage resources authority, destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site.

Section 36(3) No person may, without a permit issued by SAHRA or the responsible provincial heritage resources authority, destroy, damage, alter exhume, remove from its original position

or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or bring onto or use at a burial ground or grave any excavation equipment or any equipment which assists in detection or recovery of metals.

Section 38 (1) of the National Heritage Resources Act, 1999: Requirements of heritage impact assessment nature, to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as – (a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length; (b) the construction of a bridge or similar structure exceeding 50m in length; (c) any development or other activity which will change the character of a site (i) exceeding 5 000 m² extent; or (ii) involving three or more existing erven or subdivisions thereof; or (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or (iv) the cost of which exceed a sum set in terms of regulations b SAHRA or a provincial heritage resources agency; (d) the re-zoning of a site exceeding 10 000 m² in extent; or (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources agency, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.”

Relevance of the current development

The proposed prospecting at Farm Ramons Drift 24 and Homs 25 has an impact on the archaeology, cultural heritage, and natural heritage of the area, therefore the need for an Archaeological and Heritage Impact Study. The proposed project has phases that include preliminary exploration work, exploratory drilling, based on the results of the geophysics and loam sampling. Currently a number of existing roads and tracks traverse the proposed project area and where practicable, these roads will be used. It is envisaged that more temporary access roads will be established for repeated access to the drilling sites if the identified drill sites cannot be access via existing roads and tracks.

Table 2: Evaluation of the proposed development as guided by the criteria in NHRA, MPRDA and NEMA.

ACT	Stipulations of development	Requirement details
NHRA Section 38	Construction of 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
	Development exceeding 5000 sq. m	Yes
	Development involving three or more existing erven or subdivisions	No

	Development involving three or more erven or divisions that have been consolidated within past five years	No
	Rezoning of site exceeding 10 000 sq. m	No
	Any other development category, public open space, squares, parks, recreation ground	No
NHRA Section 34	Impacts on buildings and structures older than 60 years	No
NHRA Section 35	Impacts on archaeological and paleontological heritage resources	Subject to identification during the Phase 1
NHRA Section 36	Impacts on graves	No
NHRA Section 37	Impacts on public monuments	No
Chapter 5 (21/04/2006) NEMA	HIA is required as part of an EIA	Yes
Section 39(3)(b) (iii) of the MPRDA	AIA/HIA is required as part of an EIA	Yes

METHODOLOGY

Desktop Assessment

The HIA study for the proposed project area was implemented through the various methods. Firstly a desktop study was conducted to gain access to the following literature sources: academic literature, South African Heritage Resources Authority (SAHRA) impact assessment reports on the region, South African Heritage Resources Information System (SAHRIS) map, Genealogical society database, South African archives database, McGregor, Africana libraries, digital collections, as well as previous HIA reports in the Northern Cape and specifically in the Namakwa area of the Namakwa District. The second method involved a field survey.

Field Survey

The field study was undertaken on 22-24 April 2023 on foot and by car. Environmental parameters such as geology, soils, and types of vegetation, river valleys and hills / mountains were taken into consideration when deciding the areas to investigate for archaeological and heritage sites. The survey was undertaken by archaeologist, Dr J Chikumbirike, assisted by Andre Jacobs. On the day of the survey, the weather was bright and sunny, with clear visibility. Relative to desktop predictions it was found that the area had no potentially significant

archaeological exposure. Artefact assemblages consisting of mostly cores and flakes were in sporadic and isolated occurrences, most occurring near or at the surface exposures. The hilly areas were bereft of any artefacts meaning that the scatters are isolated to the area below the hills. The rock outcrops and exposures yielded no traces of engravings or past inhabitation. Overall, it was found that the prospecting area has a generally low surface density of isolated Stone Age artefacts ranging from Pleistocene but mainly Holocene. The artefact scatters are of low archaeological integrity and therefore have limited significance.

The Built Environment, Cultural and Historical Landscapes

While the dry arid and isolated African landscapes, such as the Kalahari, is uninhabited, barren, and some sort of a *Terra Nullis*- an empty land- devoid of any human connections, historically, symbolically or materially. This disavowal of human connection, or ownership has influenced discourses, historical accounts, and development imperatives in these isolated areas. Thus, establishment of historical and contemporary human and cultural; connections to desert landscapes is vital.

Within the project area, though the existence of such important historical and cultural sites, the likely impacts adjacent to the development area can be managed by avoidance, and /or possibly preservation. These remnant sites related to human, historical and symbolic attachments within, or adjacent to the proposed development area are highlighted in the following narrative. Generally, the identified properties are protected by section 34 of the *National Heritage Resources Act* (NHRA) which states that ‘No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority’.

1. Built Environment

The general site is composed of ruins and foundations of the historical buildings, an old cemetery and occupancy by one Mr Ben Cloete, who has a few farm animals and a little garden. These are remnants of an old crossing point across the Orange River, which is no longer in use. The foundations of the original main house / hotel and other structures are still relatively intact, but in an advanced state of decay (Figure 17a-c). Further off, just before the site is an old site, with abandoned buildings, whose ruins are partly dilapidated and in disrepair.¹ On account of these old structures, The old Goodhouse site,² does lie in the 60 years protection category.



Figure 17a, b and c: Partly abandoned buildings at Goodhouse old settlement

¹ The abandoned building is now occupied by the Border Military Patrol.

² Credited to Caroline Wedner (Nee Dartsek 02/07/1876 -29/07/1945)- and her husband Carl Weidener (10/03/1869-12/11/1940), who established the settlement of Good house.

2. Graves

The Cemetery (Figure 3 and 4) contains 5 Commonwealth war graves from World War I, 4 in a cement/concrete enclosure (Figure 5)³ and 1 outside. The cemetery contains approximately 70 graves, with the possibility of many others buried within the desert sand. The cemetery is demarcated into an old section- with old colonial graves, and a contemporary section, where burials are still done.



Figure 18: Graves of the early inhabitants at Goodhouse



Figure 19: Cemetery showing the new section in the foreground, and the old section in the background, with the view of Hakiesdoorn, Namibia across the Orange River.

³ See also the *South African Graves War project* (<https://www.southafricawargraves.org/>).



Figure 20: War graves rehabilitated by the South African Graves War project (see <https://www.southafricawargraves.org/>).

3. Other Markers of the cultural Landscape

Herding posts scattered in the landscape (Figure 21-23), a few abandoned enclaves, but also relatively few still in use particularly close to the river.



Figure 21: An abandoned enclosure-herding post- possibly used seasonally (Observation 10)



Figure 22: Foundations/Markings of a possible herding post



Figure 23: Manmade wall

4. Contemporary Human Activity

4.1. Goodhouse Town

Evidence of the importance is reflected in the naming of the area, and a few physical markers on the landscape. In relation to the naming, Goodhouse (Nama: *Gádaos*). The name is a folk etymological adaptation of the Khoekhoen Gudaos, 'sheep ford', said to be the place where the Namas crossed the Orange River with their sheep when they trekked from Little Namaqualand

to Great Namaqualand.⁴ The site, and it being on the frontier between Namibia and South Africa, forms part of a network of treks associated with colonial period travel, adventure, and exploration of the frontier. Next to the old site, and the cemetery, physical marker of the historical importance includes a self-made plaque in recognition of a traveller.



Figure 24: A cross/Plaque commemorating a traveller who passed through this crossing in the 1930s.

Though the town is located outside of the project area, because of its proximity to the project area, the inhabitants, and some cultural sites next to the demarcated area are likely to be indirectly impacted by the activities of the project.

5. Desert Adventures and Tourism

The area lies at the centre of the popular *Kalahari 4x4 Trail*, with camping sites dotted across the landscape.



Figure 25: Part of the extensive off-road trails in the project area.

⁴ See Raper, Peter E. (1987). *Dictionary of Southern African Place Names*. Internet Archive. p. 182. Retrieved 28 August 2013.

6. Impacts

The “cultural significance” of the identified structures in and adjacent to the project area are Built Environment, Historical sites and burial grounds and graves. Though there are no graded sites/ but the possibility of sites like the old Goodhouse settlement/gravesite cannot be ruled out from potential grade III categorisation in future.

6.1. Burial grounds and graves

The SAHRA Act also offer general protection to sites such as this- declared or not thus as per 34. (1) covering all structures/grave older than 60 years without a permit issued by the relevant provincial heritage resources authority. As per the SAHACT 3.2.1 (e) The range Burial grounds and graves include—

- (i) ancestral graves;
- (ii) royal graves and graves of traditional leaders;
- (iii) graves of victims of conflict;
- (iv) graves of individuals designated by the Minister by notice in the *Gazette*;
- (v) historical graves and cemeteries; and
- (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);

Given the history of settlement in the area, there is a Possibility of discovering more burials in or adjacent to the project area, and in this case as per made a concerted effort to contact and consult communities and individuals. In such cases and As for the identified gravesite, and as per SAHRA 36.5A, who by tradition have an interest in such grave or burial ground; and

(b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority ...

6.2. Built Environment

- Structures at Goodhouse fall within the category of general protection as that are likely to be over 60 years old.
- Most seem to lie outside of the project area and therefore will not directly be impacted by the proposed development.
- However, engagement with the current owners/custodians is recommended, for good public relations purposes.

6.3. Other Remnants of Human Activity

- The few identified remnants of other human activities- mainly herding posts - which are either wholly or partly abandoned. These could be avoided in the process of development.
- The 4x4 Trails can be integrated din the project planning, preserving their integrity and co-exist with project activities.

HERITAGE ASSESSMENT AND REPORT COMPILATION

Assessing significance

The assessment of the heritage significance is the measure of value that the heritage carries to various stake holders. It is based on the importance that people attach to a physical object, or abstract concept attached to an event, landscape, or people. The heritage significance is its worthiness to different stake holders. The intrinsic worth of cultural, or natural patrimony (sites and object) is linked to various sectors of the local, national, and global population. The types of significances or values below are in accordance with SAHRA which is the national heritage authority in South Africa

Type of Significance and definition

Aesthetic: the site or object are significant in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Historical: Is its importance in the community, or pattern of history. It also reflects a strong or special association with the life or work of a person, group or organisation of importance in history. According to SAHRA heritage may demonstrate significances relating to the history of slavery.

Rarity: is when heritage possess uncommon, rare, or endangered aspects of natural or cultural heritage.

Representivity: shows the principal characteristics of a particular class of natural or cultural places or objects, whether they indicate a range of landscapes or environments, the attributes of which identify it as being characteristic of its class. The other factor is that is whether it shows principal characteristics of human activities that include the way of life, philosophy, custom, process, land-use, function, design, or technique in the environment of the nation, province, region, or locality.

Scientific/Technical: is the potential to yield information that will contribute to an understanding of natural or cultural heritage. It shows a high level of creative or technical achievement at a particular time period.

Social: this when the heritage has a strong or special association with a particular community or cultural group for social, cultural, or spiritual purposes

Tourism: this when the site or object carries a commercial value that is associated with tourism, thus the heritage does possess the potential to be used for education/economic benefits. Site Grading Assessment for heritage significances paves way for site grading.

Site Grading

Assessment for heritage significances paves way for site grading. Site grading or weighting is contingent on the geographical extent (local/provincial/national) and the importance (low/medium/high) of the value. Based on these two elements, possible recommendations on future action on the sites are prescribed. These recommendations may include no further action, mitigation measures or destruction of a site. It is important to note that SAHRA is the one that approves to developers or any other interested and or affected parties the destruction of any heritage site. This may only take place upon SAHRA issuing a permit. The permit may also be issued by a provincial heritage resources authority (PHRA).

Table 3: Recommended grading as well as associated recommendation measures. In all the scenarios approval will be required from SAHRA.

South African Legislation (National Heritage Resources Act) Ranking	Sites within the study area	Sites immediately outside study area
National Heritage Sites (Grade 1)	None	None
National Heritage Sites (Grade 1), Grade 2 (Provincial Heritage Sites), burials	None	None
Grade 3a	None	None
Grade 3b	None	None
Grade 3c	None	None

Report compilation

The desktop analysis and physical surveys were employed to identify and locate possible heritage sites and their associated significance and impacts.

BACKGROUND TO THE ARCHAEOLOGICAL AND HERITAGE HISTORY OF THE STUDY AREA

The South African pre-history follows a complex sequence of stratigraphic deposition, which is preserved in the deep layers underground. There are three progressive phases, namely the Palaeontological phase, the Archaeological phase and the Colonial/historical periods. The present study deals with the last two.

The Northern Cape is known for its rich and varied archaeological resources specifically relating to the Stone Age (Morris 2006). In Namaqualand extensive archaeological research has been done in and around the coastal areas such as Kleinsee, Dreyer (north-west from Kammagas, and Buffelsriver to name a few (Webley 2012; Orton 2017; Morris & Webley 2004). In which material ranging from ESA to LSA (more common) has been found.

Stone Age

Archaeological and historical evidence show that the Middle Orange River and Bushmanland regions have been populated continuously during prehistoric times and that the region was extensively occupied by Khoi herders and San hunter-gatherers during the last 2000 years (Morris & Beaumont 1991; Beaumont et al. 1995; Smith 1995). According to Beaumont (1986) archaeological visibility in the region was high during the Last Glacial Maximum, a viewpoint that is in contrast to that indicated for southern Africa as a whole (Deacon and Thackeray 1984). Beaumont et al. 1995 also noted that MSA artifact occurrences are widespread in the Bushmanland area but are mainly preserved as low density surface scatters on the landscape. Morris (2010, 2013a, 2013b) noted very sparse localized scatters of MSA stone tools at the top of Gamsberg at Aggeneys, including a MSA knapping site, and ESA material, including a Victoria West core on quartzite within the Gamsberg basin. The importance of Gamsberg as an archaeological/historical focal point is further alluded to in early 19th century records (Penn 2005) as a place of refuge and conflict during the colonial frontier period and by the meaning of its name, which is derived from the Khoikhoi word Gaams, meaning 'grassy spring'. The

principal Khoikhoi inhabitants of the Middle Orange River were the Einiqua who belonged to the same language group as the Namaqua and Korana, namely the Orange River Khoikhoi (Penn 2005). The Einiqua occupied the area around and east of the Augrabies Falls while the Korana occupied the Middle-Upper Orange River further to the east. A large number of burial cairns were excavated near the Orange River in the Kakamas area and appear to be related to Korana herders (Morris 1995). It is pointed out that while Bushmanland sites in the surrounding area appear to be ephemeral occupations by small hunter-gatherer groups, substantial herder encampments found along the Orange River itself indicate that the banks and floodplains of the river were more intensely exploited (Morris & Beaumont 1991; Beaumont 1995).

Colonial

Copper was discovered by Dutch colonials in 1685 in the Northern Cape province of South Africa during an expedition led by Simon van der Stel. They discovered deposits of malachite (Miller 1995) in an area located near the present-day towns of Okiep and Springbok. After this discovery, little development took place, mostly because of the remoteness and harsh conditions of the area and for many years the area was only prospected and explored (Smuts 2015).

The beginning of commercial mining in the area only commenced once The South African Mining Company started mining operations in 1846 (Smalberger 1975). In 1852, a company called Phillips and King purchased the farm upon which the town of Springbok is located today. Phillips and King owned the Spektakel, Nababeep and Okiep mines which were later taken over by the Cape Copper Company. Another company called Namaqua Copper Company had mining operations at Concordia, an area northeast of Okiep. In 1919, the Cape Copper Company ceased their operations in the area due to the post First World War economic slump. Most of the mines today are inactive with only remnants of past usage.

DESCRIPTION OF THE AFFECTED ENVIRONMENT

The project study area is characterised by exposed bedrock granite rocks of various sizes, huge granite and gneiss domes, rounded hills, steep rocky slopes, and open veld with shallow soils colonized by shrubs and succulents. The current land use in the project footprint is cattle farming and agriculture.



Figure 26: Landscape of study area

THE FINDS

Stone tools

This study observed deficit of significant archaeological sites particularly those that are still well preserved and undisturbed in their primary contexts. However, isolated scatters of Stone Age material culture of **LOW** significance were observed which were highly weathered with probably secondary context. Some of the Stone Age material culture recorded include stone tool scrapers, cores, and arrowheads. Late Stone Age microliths were also observed at one site. Historical structures that include old pump bouse, old buildings and rectangular structure with cement floors was recorded. These, however, are of **LOW** significance, and mining or prospecting activities can avoid areas where these structures are sited. It is recommended that development goes ahead. The notable observations made are tabulated below.

Table 4: plotted observations made.

	Latitude (S)	Longitude (E)	Comment	Significance
1	28° 54'02.4"	18° 14'11.5"	1930s/1940s old building (Figure 17)	HIGH
2	28° 54'04.0"	18° 14'18.8"	Cemetery (Figure 28)	HIGH
3	28° 54'00.9"	18° 14'17.6"	Farm	LOW
4	28° 53'59.7"	18° 14'11.2"	Historical Military bunker (Figure 17)	HIGH
5	28° 54'47.6"	18° 15'04.1"	MSA quartz flake (Figure 29)	LOW
6	28° 56'48.9"	18° 17'24.2"	Rock outcrop	LOW
7	28° 57'58.4"	18° 18'58.54"	Lithic scatter (Figure 30)	LOW
8	29° 00'58.8"	18° 19'22.9"	Lithic scatter (Figure 31)	LOW
9	29° 00'59.2"	18° 20'00.0"	Lithic scatter (Figure 32)	LOW
10	28° 59'57.4"	18° 20'26.1"	Historical foundation (Figure 21)	LOW

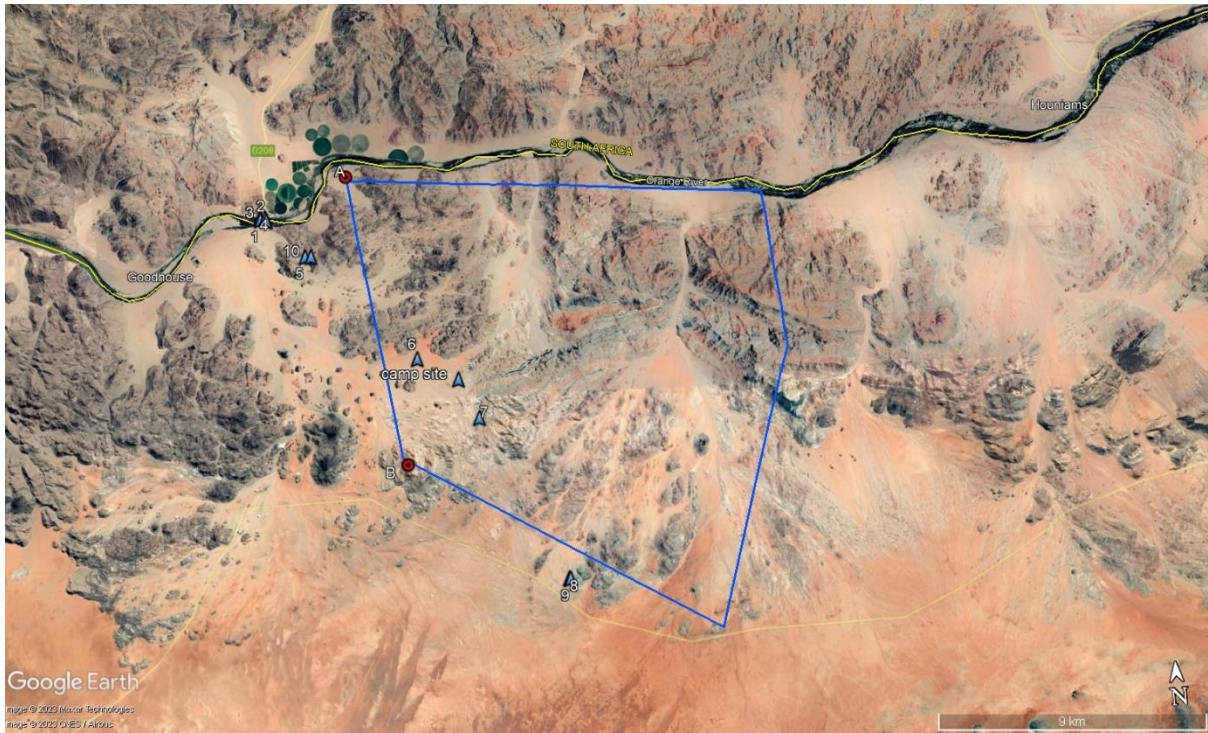


Figure 27: Google Earth image of Tabulated Observations



Figure 28: Cemetery (observation 2)



Figure 29: MSA quartz Flake (observation 5)



Figure 30: Lithic scatter (observation 7)



Figure 31: Stone Age lithic materials showing arrowheads (observation 8)

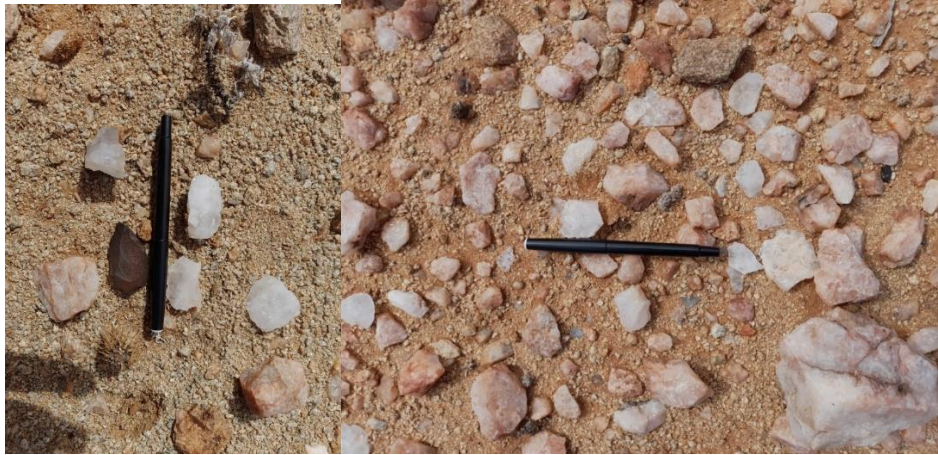


Figure 32: Concentration of Stone Age lithic tools (observation 9)

SITE SIGNIFICANCE

GRADING

The significance rating for the historical buildings is HIGH, however, they are not going to be directly affected by the project development. Due to This no mitigation is required.

RECOMMENDATIONS

The stone tools discovered in the study area require no further action. The historical structures mostly occur on current homesteads and do not mean to be threatened by the prospecting activities. Therefore, based on the study presented in this assessment, the proposed prospecting is supported.

Chance findings procedures

It has already been highlighted that sub-surface materials may still be lying hidden from surface surveys. Therefore, absence (during surface survey) is not evidence of absence all together. The following monitoring and reporting procedures must be followed in the event of a chance find, in order to ensure compliance with heritage laws and policies for best practice. This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. Accordingly, all construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds.

- If during the drilling operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- The senior on-site Manager must then make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area before informing SAHRA/PHRA (Natasha Higgitt).
- If a human grave/burial is encountered, the remains must be left as undisturbed as possible before the local police and SAHRA or PHRA are informed. If the burial is

deemed to be over 60 years old and no foul play is suspected, an emergency exhumation permit may be issued by SAHRA for an archaeologist to exhume the remains.

CONCLUSIONS

Pulafel 4D Consulting Pty Ltd was commissioned to undertake a field-based Heritage Impact assessment on Farm Ramons Drift 24 and Homs 25 in the Namakwa District in Northern Cape Province (NC 30/5/1/1/2/12835 PR). No significant cultural material was found on the development footprint, except for historical structures that lie outside the prospecting activities. Without identifiable cultural material, there is therefore, no heritage grounds to halt the prospecting activities. Chance findings are still possible and reporting procedures have been outlined to the developer.

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