

**PHASE I HERITAGE IMPACT ASSESSMENT (INCLUDING PALAEOLOGICAL
ASSESSMENT) REQUESTED IN TERMS OF SECTION 38 OF THE NATIONAL
HERITAGE RESOURCES ACT NO 25/1999 FOR THE PROPOSED MINE PROSPECTING
ON A PORTION OF THE REMAINING EXTENT OF THE FARM REMHOOGHTE 152
PRIESKA, NORTHERN CAPE PROVINCE**

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DOCUMENT CONTROL

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DECLARATION OF INDEPENDENCE

AHSA (Pty) Ltd is an independent consultancy: We hereby declare that we have no interest, be it business, financial, personal or other vested interest in the undertaking of the proposed activity, other than fair remuneration for work performed, in terms the National Heritage Resources Act (No 25 of 1999).

DISCLAIMER

All possible care was taken to identify and document heritage resources during the survey in accordance with best practices in archaeology and heritage management. However it is always possible that some hidden or subterranean sites are overlooked during a survey. AHSA will not be held liable for such oversights and additional costs thereof.



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ABBREVIATIONS

| | |
|-------|---|
| BP | Before Present |
| EIA | Environmental Impact Assessment |
| HIA | Heritage Impact Assessment |
| LSA | Late Stone Age |
| LIA | Later Iron Age |
| PHRA | Provincial Heritage Resources Authority |
| MSA | Middle Stone Age |
| NHRA | National Heritage Resources Act |
| SAHRA | South African Heritage Resources Agency |

GLOSSARY

Archaeological material: remains resulting from human activity left as evidence of their presence which, as proscribed by South African heritage legislation, are older than 100 years, which are in the form of artefacts, food remains and other traces such as rock paintings or engravings, burials, fireplaces and structures.

Artefact/Ecofact: Any movable object that has been used, modified or manufactured by humans.

Catalogue: An inventory or register of artefacts and/or sites.

Conservation: All the processes of looking after a site/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This include intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural landscape: “the combined works of nature and man” and demonstrate “the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external”.

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.

Early Stone Age: Predominantly the Acheulean hand axe industry complex dating to + 2Myr yrs – 250 000 yrs. before present.

Early Iron Age: Refers cultural period of the first millennium AD associated with the introduction of metallurgy and agriculture in Eastern and Southern Africa

Later Iron Age: Refers to the period after 1000AD marked by increasing social and political complexity. Evidence of economic wealth through trade and livestock keeping especially cattle

Excavation: A method in which archaeological materials are extracted, involving systematic recovery of archaeological remains and their context by removing soil and any other material covering them.

Grave: a place of burial which include materials such as tombstone or other marker such as cross etc.

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

Intangible heritage: Something of cultural value that is not primarily expressed in a material form e.g. rituals, knowledge systems, oral traditions, transmitted between people and within communities.

Historical archaeology: the study of material remains from both the remote and recent past in relationship to documentary history and the stratigraphy of the ground in which they are found; or archaeological investigation on sites of the historic period. In South Africa it refers to the immediate pre-colonial period, contact with European colonists and the modern industrial period.

In situ material: means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.

Later Iron Age: The period from the beginning of the 2nd millennium AD marked by the emergence if complex state society and long-distance trade contacts.

Late Stone Age: The period from ± 30 000-yr. to the introduction of metals and farming technology

Middle Stone Age: Various stone using industries dating from ± 250 000 yr. - 30 000 yrs. ago

Monuments: architectural works, buildings, sites, sculpture, elements or structures of an archaeological nature, inscriptions, cave dwellings which are outstanding from the point of view of history, art and science.

Place: means site, area, building or other work, group of buildings or other works, together with pertinent contents, surroundings and historical and archaeological deposits.

Preservation: means protecting and maintaining the fabric of a place in its existing state and retarding deterioration or change, and may include stabilization where necessary.

Sherd: ceramic fragment.

Significance grading: Grading of sites or artefacts according to their historical, cultural or scientific value.

Site: a spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

EXECUTIVE SUMMARY

1. This Heritage Impact Assessment (HIA) report has been prepared in compliance with Section 38 of the National Heritage Resources Act (No 25/1999). The Client, Pioneer Mining (Pty) Ltd, will lodge an application for a prospecting right on the Remaining Extent the Farm Remhoogte 152 (North & South sections), Prieska District, Northern Cape Province. The HIA is part of an Environmental Impact Assessment (EIA) that has to be undertaken to pave way for the proposed development activities.

2. Twenty seven (27) sites are recorded, all but one dating to the Stone Age period. The stone tool assemblages comprise mainly scrapers, cores, flake waste and blades. A relatively high frequency of blades is noticeable when compared to encounters from other properties in the broader area. The predominant raw material is chert; dolomites were encountered in one instance. Chert was locally sourced and there is a significant occurrence of cores suggesting manufacturing activity. The grindstone is a rare find (Site RHT16). None of these finds warrants further action, unless the Mine or a local museum is interested in the grindstone as a collectible.

3. *The Iron Age*

No Iron Age sites were found on the property.

4. *Early commercial farming*

The function or purpose of the cross-shaped setting of stones could not be ascertained (Site RHT08). It was possibly a beacon. It did not appear to be older than 100 years. There are no compelling circumstance than can warrant its destruction.

5. *Graves and burial grounds*

No graves or burial grounds were reported on the property.

6. Significance ranking of findings

The significance ranking (with a colour scheme) refers to perceived impacts and risk of the proposed development. Appropriate interventions and mitigation strategies are also proposed.

| | RANKING | TYOLOGY & SIGNIFICANCE | NO OF SITES |
|---|----------------|--|--------------------|
| 1 | High | National and Provincial heritage sites (Section 7 of NHRA). All burials including those protected under Section 36 of NHRA. They must be protected. | 0 |
| 2 | Medium A | Substantial archaeological deposits, buildings protected under Section 34 of NHRA. Footprint of early modern mining. These may be protected at the recommendations of a heritage expert. | 0 |
| 3 | Medium B | Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented. | 27 |
| 4 | Low | Heritage sites which have been recorded, but considered of minor importance relative to the proposed development. | 0 |
| | | TOTAL | 27 |

7. Conclusion and Recommendations

The mine prospecting can go ahead mindful of the fact that archaeological deposits are usually buried underground. Should archaeological artefacts or skeletal material be exposed in the area during development activities, such activities should be halted, and the provincial heritage resources authority or SAHRA notified in order for an investigation and evaluation of the finds to take place.

8. Site inventory spreadsheet Table: Remaining Extent of the Farm Remhoogte 152 (South)

| SITE NO | LATITUDE | LONGITUDE | PERIOD | DESCRIPTION | RANKING |
|---------|---------------|---------------|---------|--|----------|
| RHT01 | 29°34'2.94"S | 22°58'56.72"E | MSA/LSA | Open flat area with acacia shrubs. An extensive scatter of tools and flakes suggesting a raw material source and manufacturing area. | Medium B |
| RHT02 | 29°34'13.34"S | 22°58'52.30"E | MSA/LSA | Open flat area with acacia shrubs. 4 lithics. Flaked core, scraper, blade and flake. | Medium B |
| RHT03 | 29°34'42.21"S | 22°58'38.57"E | MSA/LSA | Open flat area with acacia shrubs. Grit with calcretic waste. 2 cores, scraper and flakes. | |
| RHT04 | 29°34'37.81"S | 22°58'55.44"E | MSA/LSA | Flat area, sparse vegetation, calcretic waste. 10 lithics including core, blades, scraper and flakes | Medium B |
| RHT05 | 29°35'14.40"S | 22°58'35.58"E | MSA/LSA | Flat area, sparse vegetation, calcretic waste. 9 lithics. 2 blades and flakes. | Medium B |
| RHT06 | 29°34'33.55"S | 22°59'16.73"E | MSA/LSA | Calcretic bedrock and gravelly waste. 9 lithics, scraper, blades and flake waste. | Medium B |
| RHT07 | 29°34'46.87"S | 22°59'22.05"E | MSA/LSA | Calcretic hardpan and gravelly waste. Acacia scrub. 7 lithics. Blades and scrapers. | Medium B |
| RHT10 | 29°35'59.14"S | 22°58'28.99"E | MSA/LSA | Calcretic hardpan, acacia bushes. 6 lithics. Blade, scraper and flake waste. | Medium B |
| RHT11 | 29°34'34.34"S | 22°59'43.80"E | MSA/LSA | Open flat area, sparse vegetation. 9 lithics. Blades, core, scraper and flakes | Medium B |

9. Site inventory spreadsheet Table: Remaining Extent of the Farm Remhoogte 152 (North)

| SITE NO | LATITUDE | LONGITUDE | PERIOD | DESCRIPTION | RANKING |
|---------|---------------|---------------|---------|---|----------|
| RHT08 | 29°32'52.10"S | 22°59'44.90"E | MSA/LSA | Open flat area with sparse vegetation. Setting of stones in the shape of a "voting" cross. Each arm 2m long to the intersection (total length of each pair is 4m). Purpose/meaning uncertain. | Medium B |
| RHT09 | 29°32'47.60"S | 22°59'49.40"E | MSA/LSA | An area with Kalahali sand overburden. 7 lithics. Scraper and flake waste. | Medium B |
| RHT12 | 29°32'25.20"S | 23° 0'9.60"E | MSA/LSA | On the edge of valley overlooking the plantations on the banks of the Orange River. Calcretic hardpan exposed on the edge of the cliff. 8 lithics including blades, scraper and waste material. | Medium B |
| RHT13 | 29°32'18.20"S | 23° 0'16.70"E | MSA/LSA | Red-brown gravels on a spur below the cliff edge of the Orange River valley. Two blades and flake material. | Medium B |
| RHT14 | 29°32'22.90"S | 23° 0'15.70"E | MSA/LSA | Gravelly surface on a spur below the cliff edge of the Orange River valley. Blade and flake material. | Medium B |
| RHT15 | 29°32'29.12"S | 23° 0'10.51"E | MSA/LSA | Kalahali sand overburden on the plain above the Orange River valley. Small scraper, point and flake material. | Medium B |
| RHT16 | 29°32'26.70"S | 23° 0'1.60"E | MSA/LSA | Kalahali sand overburden on a plain above the Orange River valley. 3 blades, scraper, grindstone. | Medium B |
| RHT17 | 29°32'49.60"S | 23° 2'16.30"E | MSA/LSA | Gravelly surface which mantles the glacial tillite ridge. 5 lithics | Medium B |
| RHT18 | 29°32'51.00"S | 23° 2'4.00"E | MSA/LSA | Red-brown and black gravels on the glacial tillite ridges. 6 lithics include a blade (or blades core), point and scrapers. | Medium B |
| RHT19 | 29°32'46.60"S | 23° 2'2.00"E | MSA/LSA | Red-brown gravels. 7 lithics including a blade, scrapers and core. | Medium B |
| RHT20 | 29°32'39.50"S | 23° 2'15.50"E | MSA/LSA | Red-brown gravels. 6 lithics including cores, broken blade, point. | Medium B |
| RHT21 | 29°32'40.40"S | 23° 2'35.90"E | MSA/LSA | Red-brown / black gravels. Sparse vegetation. 2 blades. | Medium B |
| RHT22 | 29°32'41.10"S | 23° 2'40.80"E | MSA/LSA | Red-brown / black gravels, sparse vegetation. 2 lithics –scrapers | Medium B |
| RHT23 | 29°32'43.20"S | 23° 2'44.00"E | MSA/LSA | Red-brown / black gravels. 2 lithics. Flake/core and point. | Medium B |
| RHT24 | 29°32'51.80"S | 23° 2'31.90"E | MSA/LSA | Red-brown / black gravels. 8 lithics mostly flakes and a blade. | Medium B |

| | | | | | |
|-------|---------------|---------------|---------|---|----------|
| RHT25 | 29°32'51.10"S | 23° 2'26.80"E | MSA/LSA | Red-brown gravels. 7 lithics including chert scraper, blade and core. Also 2 dolomite lithics (scrapers or points) | Medium B |
| RHT26 | 29°32'47.10"S | 23° 2'31.20"E | MSA/LSA | Red-brown gravels, sparse vegetation. 3 lithics – point, scraper and blade. | Medium B |
| RHT27 | 29°32'51.18"S | 23° 2'53.86"E | MSA/LSA | Red-brown gravels, the eastern end of the surveyed area. 3 lithics – a point and scrapers. | Medium B |

1. INTRODUCTION

This Heritage Impact Assessment (HIA) report has been prepared on behalf of Pioneer Minerals Pty Ltd in respect of a mine prospecting right application on the Remaining Extent of the Farm Remhoogte 152 (two Portions identified in this report as North section and South section). The farm is situated on the south banks of the Orange River between the towns of Douglas and Prieska in the Northern Cape Province. This report complies with Section 38 of the National Heritage Resources Act (25/1999). Two site visits were made on 24 January and 7 February 2019 during which ground surveys were undertaken to assess the heritage sensitivity of the area and to determine potential adverse impacts of the proposed activities on the heritage.

Prospecting for minerals entail the following which may result in the disturbance or destruction of heritage resources.

- Open excavations and trenches
- Test pits
- Drilling
- Opening of temporary service roads
- Location of processing plant
- Establishing temporary camp sites

1.1. Location and description of the receiving environment

The Farm Remhoogte 152 is situated on the south bank of the Orange River a distance of 100 km and 30 km respectively from Douglas (east) and Prieska (west). Further from the Orange River, to the south the ground rises to a plateau generally flat with extensive exposures red-brown gravels / grit. In the South section of the property calcareous waste can be seen mixed with the gravels, and chert is abundant on the surface and occasionally jaspilite stones. In the North section the south bank of the Orange River is flanked by moraines called tillite transported and deposited by ice during the last Ice Age. Through the deposits several streams incised channels. From the Google-Earth aerial view the impression is created of a corrugated topography, while the pattern of the channels resemble a tree trunk with multiple branches. Drainage channels start on the plain trending northwest to the Orange

River in the upper reaches shallow streams with the depth of incision increasing as they cross the glacial tillites, forming ridges and spurs which flank the Orange River. Vegetation is karoo scrub with acacia dominating. In the North section there are dense stands of the hooked thorn *Acacia mellifera subsp. Detinens* (haakbos - Afrikaans).

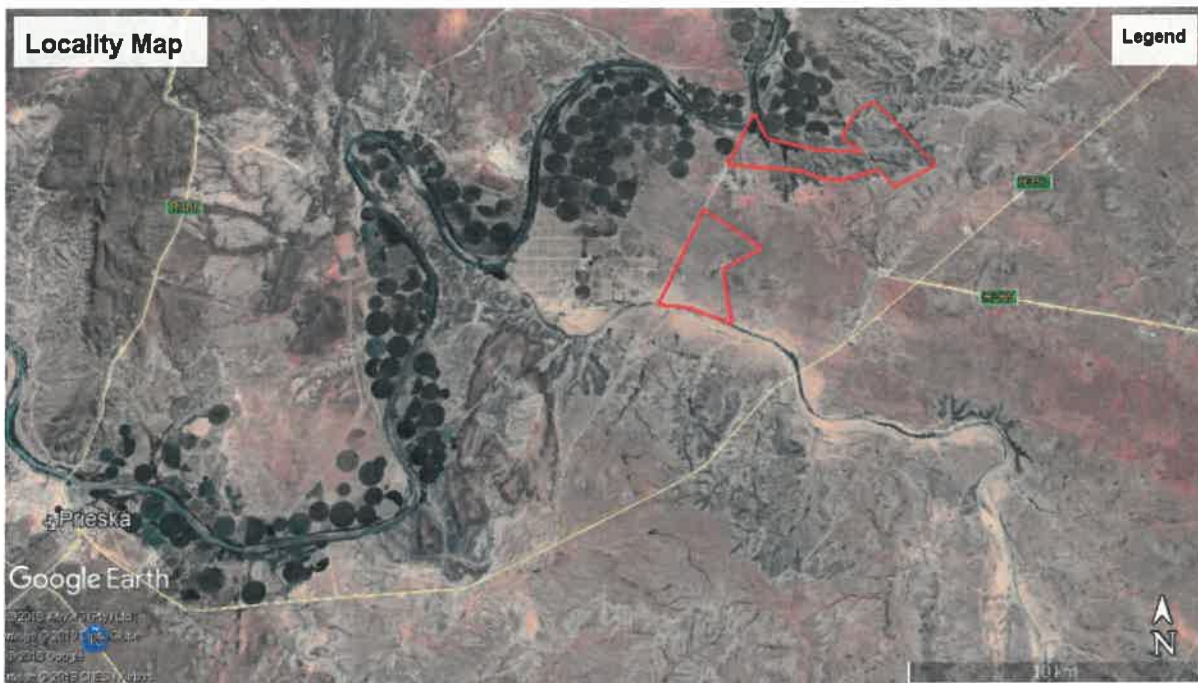


Fig 1: Google-Earth map shows the location the Farm Remhoogte 152 on the south bank of the Orange River, Prieska District, Northern Cape Province.

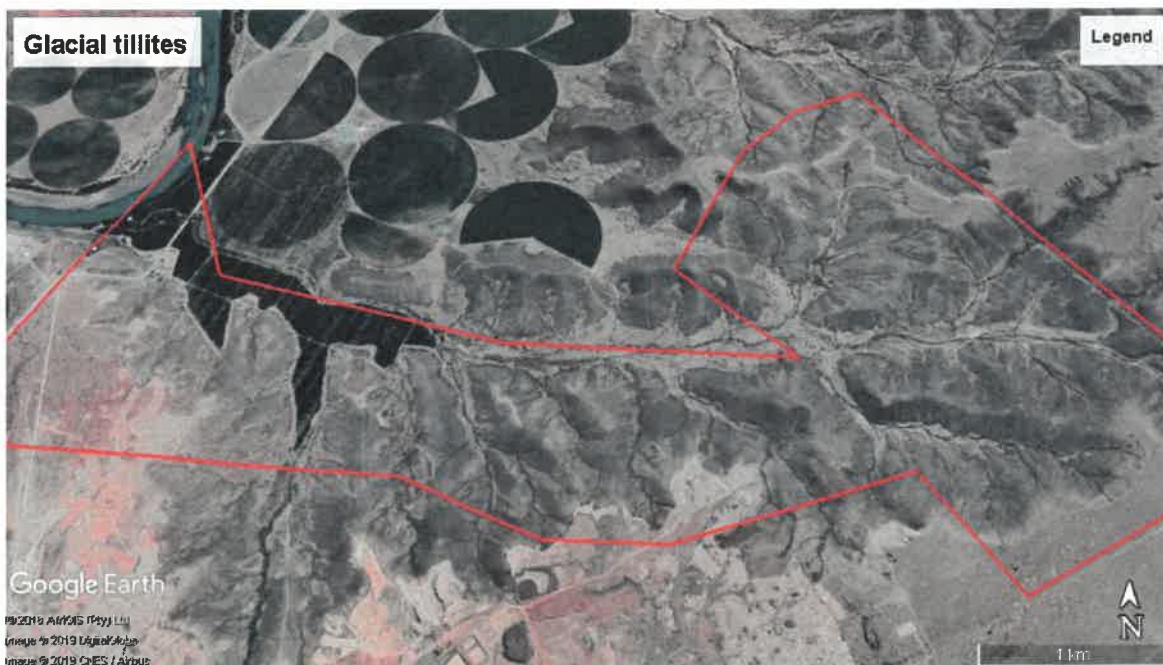


Figure 2: Google-earth view of the glacial moraines (tillites) and stream incisions, Remhoogte 152 (North section).



Figure 3: Landscape view from the South section of Remhoogte 152 north towards the Orange River (the farm buildings and green areas are located outside the proposed prospecting area).



Figure 4: Calcretic hardpan, South section of Remhoogte 152.



Figure 5: Portions covered by Kalahari sand overburden are found on both the South and North sections of the farm.



Figure 6: A calcrete mantle forms a cliff edge on the southern limits of the Orange River valley



Figure 7: The North section of the farm part in large part has glacially deposited tillite on overlain by red-brown gravels of a large size mixed with cherts and occasionally jaspilite. Acacia shrubs (*haakbos*) is relatively dense.

2. LEGAL FRAMEWORK

Sections 34, 35, 36 and 38 of the National Heritage Resources Act (No 25 of 1999) form the legal context in which this HIA report has been prepared.

2.1. Section 38 of NHRA: Heritage Impact Assessments

Section 38 of the NHRA states the nature and scale of development which triggers a HIA:

38. (1) *Subject 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, powerline, 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 50 m in length;

(c) any development or other activity which will change the character of a site—

*(i) **exceeding 5 000 m² in extent¹**; 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 costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) the re-zoning of a site exceeding 10 000 m² in extent; or

(e) any other category of development provided for in the regulations by SAHRA or a provincial heritage resources authority,

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.

2.2. Protection of buildings and structures older than 60 years

Section 34 provides automatic protection for buildings and structures more than 60 years old until it can be proven that they do not have heritage value:

(1) 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 Areal extent of the proposed development triggers the HIA.

2.3. Protection of archaeological sites

Section 35 (4) of the NHRA prohibits the destruction of archaeological, palaeontological and meteorite sites:

No person may, without a permit issued by the responsible heritage resources authority—

(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;

(b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

(c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

(d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

A specialist palaeontological desktop assessment is appended to the Report.

2.4. Graves and burial grounds

Section 36 of the NHRA provides for the protection of certain graves and burial grounds. Graves are generally classified under the following categories:

- Graves younger than 60 years;
- Graves older than 60 years, but younger than 100 years;
- Graves older than 100 years; and
- Graves of victims of conflict
- Graves of individuals of royal descent
- Graves that have been specified as important by the Ministers of Arts and Culture.

This study is however mindful of public sensibilities about the sanctity of graves and burial grounds whether they are protected by the law or not.

2.5. The National Environmental Management Act

This environmental Act states that a survey and evaluation of cultural resources must be done in areas where development projects that will affect the environment will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made. Environmental management is a much broader undertaking to cater for cultural and social needs of people. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

2.6. The Burra Charter on Conservation of Places of Cultural Significance

Some generic principles and standards for the protection of heritage resources in South Africa are drawn from international charters and conventions. In particular South Africa has adopted the **ICOMOS Australia Charter for the Conservation of Places of Cultural Significance (the Burra Charter 1999)** as a benchmark for best practice in heritage management.

3. METHODOLOGY AND THEORETICAL APPROACHES

3.1. Literature survey

A review of available relevant literature included reports of previous HIAs conducted in the general locality of the study area, historical books, and maps provided by the Client. This author has conducted three HIA studies in the broader locality of Douglas and Prieska which provides a good desktop impression of the heritage potential of the area.

3.2. Fieldwork

The ground survey was facilitated by a vehicle and as we drove along the farm tracks areas were chosen for intensive foot reconnaissance. Locations of artefacts were recorded with a GPS coordinates from a Garmin Etrex 20x. Photographs were taken to show the general character of the landscape as well as artefacts and features seen. A site inventory is in Section 7 and catalogue of the findings presented in Section 8 of this Report.

3.3. Limitations and constrains

The North portion of the farm has no access roads meaning that only foot reconnaissance was possible. The team conducted random walks over the ridges, spurs and down the valleys. The *haakbos* armed with stubborn hooks slowed progress. It was a tedious exercise and certain areas were simply impenetrable.

4. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

The cultural sequence in South Africa is presented here as a theoretical framework for the identification of features / structures and objects of archaeological, historical and cultural interest.

4.1. Cultural sequence summary²

| PERIOD | EPOCH | ASSOCIATED CULTURAL GROUPS | TYPICAL MATERIAL EXPRESSIONS |
|--|------------------------------|--|--|
| Early Stone Age 2.5m – 250 000 YCE | Pleistocene | Early Hominids: <i>Australopithecines</i> <i>Homo habilis</i> <i>Homo erectus</i> | Typically large stone tools such as hand axes, choppers and cleavers. |
| Middle Stone Age 250 000 – 25 000 YCE | Pleistocene | First <i>Homo sapiens</i> species | Typically smaller stone tools such as scrapers, blades and points. |
| Late Stone Age 20 000 BC – present | Pleistocene / Holocene | <i>Homo sapiens</i> including San people | Typically small to minute stone tools such as arrow heads, points and bladelets. |
| Early Iron Age / Early Farmer Period c300 – 900 AD (or earlier) | Holocene | Iron Age Farmers | Typically distinct ceramics, bead ware, iron objects, grinding stones. |
| Later Iron Age 900ADff | Holocene | Iron Age Farmers, emergence of complex state systems | Typically distinct ceramics, evidence of long distance trade and contacts |
| (ii) Mapungubwe (K2) | 1350AD | | Metals including gold, long distance exchanges |
| (ii) Historical period | Tswana / Sotho, Nguni people | Iron Age Farmers | Stone walls Mfecance / Difaqane |
| (iii) Colonial period | 19 th Century | European settlers / farmers / missionaries/ industrialisation | Buildings, Missions, Mines, metals, glass, ceramics |

4.2. Appearance of hominids

The cultural sequence begins with the appearance of hominids, of which a good fossil record exists in South Africa. Hominids were proto-humans which existed more than 3million years ago. Three famous sites in Gauteng, Limpopo and Northwest Provinces have been collectively named the Cradle of Humankind and

² Adapted from Exigo Consultancy. 2015. Frances Baard District Municipality: Proposed Nkandla Extension 2 Township Establishment, Erf 258 Nkandla, Hartswater, Northern Cape Province.

inscribed as UNESCO World Heritage Site as a serial nomination.³ One of these sites Taung near Vryburg is 250 km northwest of the study area. To my knowledge no hominid sites have been reported in the vicinity of the study area.

4.3. The Early Stone Age

4.3.1. The Early Stone Age (2 million to 250 000 years BP)

The Stone Age commenced more than 2 million years before present (BP) representing a more explicit beginning of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages. These early people made stone and bone implements. Material evidence is found in caves, rock-shelters and on river sides and edges of streams, and very rarely seen in open country.⁴ Such tools bore a consistent shape such as the pear-shaped handaxe, cleavers and core tools. These tool industries have been called Oldowan and Acheulean and were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus. Acheulean artefacts are usually found near sites where they were manufactured and thus in close proximity to the raw material or at kill sites. The early hunters are classified as hominids meaning that they had not evolved to the present human form.

Progressively a good profile of the Stone Age in the Northern Cape has been reconstructed from many heritage impact assessments that have been conducted in recent years. Locales along and adjacent to the Orange – Vaal River systems have yielded evidence of great interest.⁵ Further north the Wonderwerk Cave has become a benchmark for the characterisation of the Stone Age. Excavations reveal a long sequence of occupation spanning the Early (ESA), Middle (MSA) and Later Stone Ages.⁶ Much nearer to the study early stone implements have been found near Douglas (Morris 2009), on the Farm Annex Viegulands Put 42⁷ and Rietfontein 11 near Prieska.⁸

³ Deacon, J. and N. Lancaster. 1986. *Later Quaternary Palaeo-environments of Southern Africa*. Oxford: Oxford University Press.

⁴ <http://archaeology.about.com/od/bterms/g/bordercave.htm>

⁵ Morris, D. 2009. Phase 1 Archaeological Impact Assessment at Bucklands Settlement near Douglas, Northern Cape, p3.

⁶ <http://www.southafrica.net/za/en/articles/entry/article-southafrica.net-the-wonderwerk-cave>.

⁷ Matenga, E. 2017. Phase I Heritage Impact Assessment (including Palaeontological Assessment) requested in terms of section 38 of the National heritage resources act (no 25/1999) for the proposed mine prospecting on

4.3.2. Middle Stone Age (MSA) [250 000 yrs – 30 000 yrs BP]

The Middle Stone Age (MSA), which appeared 250 000 years ago, is marked by the introduction of a new tool kit which included prepared cores, parallel-sided blades and triangular points hafted to make spears. By then humans had become skilful hunters, especially of large grazers such as wildebeest, hartebeest and eland. It is also believed that by then, humans had evolved significantly to become anatomically modern. Caves were used for shelter suggesting permanent or semi-permanent settlement. Furthermore there is archaeological evidence from some of the caves indicating that people had mastered the art of making fire.⁹ A number of field surveys have been carried out around Danielskuil 130km northwest of Kimberley confirming significant hunter gatherer activity in the area from the MSA onwards. In the studies this author has encountered in the broader earlier lithics of the MSA to LSA period have been encountered in varying densities.

4.3.3. Later Stone Age (LSA)[40 000 yrs to ca2000 yrs BP]

By the beginning of the LSA, humans are classified as *Homo sapiens* which refer to the modern physical form and thinking capabilities. Several behavioural traits are exhibited, such as rock art and purposeful burials with ornaments, became a regular practice. LSA technology is characterised by microlithic scrapers and segments made from very fine-grained rock. Spear hunting continued, but LSA people also hunted small game with bows and poisoned arrows. Because of poor preservation, open sites become of less value compared to rock shelters. The practitioners of the Late Stone Age as with Rock Art are ancestors of the Khoisan.¹⁰ A number of rock engravings have been reported in the vicinity of Lime Acres and Danielskuil north of

the remaining extent of portion 1 of the farm Annex Viegulands Put 42, Prieska District, Northern Cape Province.

⁸ Matenga, E. 2019. Phase I Heritage Impact Assessment (including Palaeontological Assessment) requested in terms of section 38 of the national heritage resources act (no 25/1999) for the proposed mine prospecting on the Remaining Extent of Portions 13 and 9 of the of the Farm Rietfontein 11, Prieska District, northern cape province.

⁹ Deacon, J & H. Deacon. 1999. *Human Beginnings in South Africa*. Cape Town: David Philip.

¹⁰ Gaigher, S. 2012. Heritage Impact Assessment Report for the proposed establishment of the Prieska Solar Energy facility located east of Prieska on Portion 3 of the Farm Holsoot 47, Northern Cape Province, p15.

the Vaal River.¹¹ The rock engravings and Wildebeest Kuil 20km outside Kimberley has been developed into a museum site.

4.4. The Iron Age Culture [ca. 2000 years BP]

The Iron Age culture supplanted the Stone Age at least 2000 years ago, associated with the introduction of farming and use of several metals and pottery. Iron Age communities are believed to have been speakers of Bantu languages who practiced agriculture and kept domestic animals such as cattle, sheep, goat and chickens. There is however increasing evidence that sheep and probably cattle as well might have moved into the area much earlier than the Iron Age.¹²

4.4.1. Early Iron Age

Two migration streams of Early Iron Age (EIA) communities are postulated converging in South Africa, one originating in eastern Africa which has been called the *Urewe-Kwale Tradition* (or the eastern stream) and another from the west, spreading through Zambia and Angola, which he termed the *Kalundu Tradition* (or western stream). An alternative perspective is to see the IA as a gradual spread or expansion of settlement of different groups of people indigenous to the continent which took place over a long period of time. There are few if any sites attributed to the EIA in the western parts of the country. Most IA settlements are concentrated in the eastern part of South Africa. The woodland zone was preferred for settlement, but there is strong possibility that transhumant pastoralism was practiced and seasonal hunting camps were established in the inhospitable western regions of the country.

¹¹ Collins, S. 1973. Rock-engravings of the Danielskuil Townlands. *South African Archaeological Bulletin* 109-110: 49-57.; Eastwood, E.B. & Smith, B.W. 2005. Fingerprints of the Khoekhoen: geometric and handprinted rock art in the Central Limpopo Basin, southern Africa. *South African Archaeological Society Goodwin Series* 9: 63-76.

¹² Evers, T. M. 1988. *Recognition of Groups in the Iron Age of Southern Africa*. Unpublished PhD Thesis, University of Witwatersrand. Huffman 2007. *A Handbook on the Iron Age*. Scottsville: UKZN Press

4.4.2. *The Later Iron Age*

The LIA is marked by the presence of extensive stonewalled settlements such as the Tlhaping capital at Dithakong near Kuruman.¹³

4.5. **Historical Context**

The study area is historically home to the various groups of Tswana speakers certainly descending from the Iron Age and possibly some with Stone Age roots. Prieska was established in the 1870s becoming a municipality in 1878. The town is historically associated with a Cape Afrikaner revolt in 1900, which was suppressed by Lord Kitchener. This happened at the time of the Anglo-Boer War, and the rebels involved were moved to the Transvaal. As a precaution the British forces established a fort on the hills outside the town. There is a British Military memorial garden in town.¹⁴

The above is context for the identification of heritage resources in the study area.

5. **FINDINGS OF THE HERITAGE SURVEY**

5.1. **The Stone Age**

Twenty seven sites are recorded all but one belonging to the Stone Age period. The assemblages comprise mainly scrapers, cores, flake waste and blades. A relatively high frequency of blades is noticeable when compared to encounters from other properties in the broader area. The predominant raw material is chert, dolomites were encountered in one instance. Chert was locally sourced and there is a significant occurrence of cores suggesting manufacturing activity. The grindstone is a rare find. All artefacts date to the Middle Stone Age / Later Stone Age (Site RHT16, Figure 8). None of these finds warrants further action, unless the Mine or a local museum is interested in the grindstone as a collectible.

¹³ De Jong 2010: De Jong, R.C. 2010. Heritage impact assessment report: proposed manganese and iron ore mining right application in respect of the remainder of the farm Paling 434, Hay Registration Division, Northern Cape. Unpublished report prepared for Kai Batla Minerals Industry Consultants. Pretoria: Cultmatrix, p 36

¹⁴ Gaigher, S. 2012. Heritage Impact Assessment Report for the proposed establishment of the Prieska Solar Energy facility located east of Prieska on Portion 3 of the Farm Holsoot 47, Northern Cape Province.



Figure 8: Grindstone (Site RHT16)

5.2. The Iron Age

No Iron Age sites were found on the property.

5.3. Early commercial farming

The function or purpose of the cross-shaped setting of stones could not be ascertained (Site RHT08, Figure 9). It was possibly a beacon. It did not appear to be older than 100 years. There are no compelling circumstance than can warrant its destruction.



Figure 9: Cross-shaped setting of stones.

5.4. Graves and burial grounds

No graves or burial grounds were reported on the property.

5.5. Significance ranking of findings

The significance ranking (with a colour scheme) refers to perceived impacts and risk of the proposed development. Appropriate interventions and mitigation strategies are also proposed.

| | RANKING | TPOLOGY & SIGNIFICANCE | NO OF SITES |
|---|----------------|--|--------------------|
| 1 | High | National and Provincial heritage sites (Section 7 of NHRA). All burials including those protected under Section 36 of NHRA. They must be protected. | 0 |
| 2 | Medium A | Substantial archaeological deposits, buildings protected under Section 34 of NHRA. Footprint of early modern mining. These may be protected at the recommendations of a heritage expert. | 0 |
| 3 | Medium B | Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented. | 27 |
| 4 | Low | Heritage sites which have been recorded, but considered of minor importance relative to the proposed development. | 0 |
| | | TOTAL | 27 |

5.6. Risk assessment of the findings

| EVALUATION CRITERIA | RISK ASSESSMENT |
|--|--|
| Description of potential impact | Negative impacts range from partial to total destruction of surface and under-surface movable/immovable relics. |
| Nature of Impact | Negative impacts can both be direct or indirect. |
| Legal Requirements | Sections 34, 35, 36, 38 of National Heritage Resources Act (25/1999). |
| Stage/Phase | Prospecting for minerals (test pits, drilling). Mining by opencast or shaft methods |
| Nature of Impact | Negative, both direct & indirect impacts. |
| Extent of Impact | Test pits, drilling, opencast excavation and trenching have potential to damage heritage resources above and below the surface not seen during the survey. |
| Duration of Impact | Any accidental destruction of surface or subsurface relics is not reversible, but can be mitigated. |
| Intensity | Uncertain. |
| Probability of occurrence | Medium. |
| Confidence of assessment | High. |
| Level of significance of impacts before mitigation | High. |
| Mitigation measures | If heritage resources are discovered during prospecting the heritage resources authorities must be informed and a heritage expert called to attend. |
| Level of significance of impacts after mitigation | Low. |
| Cumulative Impacts | None. |
| Comments or Discussion | None. |

6. CONCLUSION AND RECOMMENDATIONS

The mine prospecting can go ahead mindful of the fact that archaeological deposits are usually buried underground. Should archaeological artefacts or skeletal material be exposed in the area during development activities, such activities should be halted, and the provincial heritage resources authority or SAHRA notified in order for an investigation and evaluation of the finds to take place.

7. SITE INVENTORY SPREADSHEET TABLE

7.1. Remaining Extent of the Farm Remhoogte 152 (South)

| SITE NO | LATITUDE | LONGITUDE | PERIOD | DESCRIPTION | RANKING |
|---------|---------------|---------------|---------|--|----------|
| RHT01 | 29°34'2.94"S | 22°58'56.72"E | MSA/LSA | Open flat area with acacia shrubs. An extensive scatter of tools and flakes suggesting a raw material source and manufacturing area. | Medium B |
| RHT02 | 29°34'13.34"S | 22°58'52.30"E | MSA/LSA | Open flat area with acacia shrubs. 4 lithics. Flaked core, scraper, blade and flake. | Medium B |
| RHT03 | 29°34'42.21"S | 22°58'38.57"E | MSA/LSA | Open flat area with acacia shrubs. Grit with calcretic waste. 2 cores, scraper and flakes. | |
| RHT04 | 29°34'37.81"S | 22°58'55.44"E | MSA/LSA | Flat area, sparse vegetation, calcretic waste. 10 lithics including core, blades, scraper and flakes | Medium B |
| RHT05 | 29°35'14.40"S | 22°58'35.58"E | MSA/LSA | Flat area, sparse vegetation, calcretic waste. 9 lithics. 2 blades and flakes. | Medium B |
| RHT06 | 29°34'33.55"S | 22°59'16.73"E | MSA/LSA | Calcretic bedrock and gravelly waste. 9 lithics, scraper, blades and flake waste. | Medium B |
| RHT07 | 29°34'46.87"S | 22°59'22.05"E | MSA/LSA | Calcretic hardpan and gravelly waste. Acacia scrub. 7 lithics. Blades and scrapers. | Medium B |
| RHT10 | 29°35'59.14"S | 22°58'28.99"E | MSA/LSA | Calcretic hardpan, acacia bushes. 6 lithics. Blade, scraper and flake waste. | Medium B |
| RHT11 | 29°34'34.34"S | 22°59'43.80"E | MSA/LSA | Open flat area, sparse vegetation. 9 lithics. Blades, core, scraper and flakes | Medium B |



7.2. Remaining Extent of the Farm Remhoogte 152 (North)

| SITE NO | LATITUDE | LONGITUDE | PERIOD | DESCRIPTION | RANKING |
|---------|---------------|---------------|---------|---|----------|
| RHT08 | 29°32'52.10"S | 22°59'44.90"E | MSA/LSA | Open flat area with sparse vegetation. Setting of stones in the shape of a "voting" cross. Each arm 2m long to the intersection (total length of each pair is 4m). Purpose/meaning uncertain. | Medium B |
| RHT09 | 29°32'47.60"S | 22°59'49.40"E | MSA/LSA | An area with Kalahali sand overburden. 7 lithics. Scraper and flake waste. | Medium B |
| RHT12 | 29°32'25.20"S | 23° 0'9.60"E | MSA/LSA | On the edge of valley overlooking the plantations on the banks of the Orange River. Calcretic hardpan exposed on the edge of the cliff. 8 lithics including blades, scraper and waste material. | Medium B |
| RHT13 | 29°32'18.20"S | 23° 0'16.70"E | MSA/LSA | Red-brown gravels on a spur below the cliff edge of the Orange River valley. Two blades and flake material. | Medium B |
| RHT14 | 29°32'22.90"S | 23° 0'15.70"E | MSA/LSA | Gravelly surface on a spur below the cliff edge of the Orange River valley. Blade and flake material. | Medium B |
| RHT15 | 29°32'29.12"S | 23° 0'10.51"E | MSA/LSA | Kalahali sand overburden on the plain above the Orange River valley. Small scraper, point and flake material. | Medium B |
| RHT16 | 29°32'26.70"S | 23° 0'1.60"E | MSA/LSA | Kalahali sand overburden on a plain above the Orange River valley. 3 blades, scraper, grindstone. | Medium B |
| RHT17 | 29°32'49.60"S | 23° 2'16.30"E | MSA/LSA | Gravelly surface which mantles the glacial tillite ridge. 5 lithics | Medium B |
| RHT18 | 29°32'51.00"S | 23° 2'4.00"E | MSA/LSA | Red-brown and black gravels on the glacial tillite ridges. 6 lithics include a blade (or blades core), point and scrapers. | Medium B |
| RHT19 | 29°32'46.60"S | 23° 2'2.00"E | MSA/LSA | Red-brown gravels. 7 lithics including a blade, scrapers and core. | Medium B |
| RHT20 | 29°32'39.50"S | 23° 2'15.50"E | MSA/LSA | Red-brown gravels. 6 lithics including cores, broken blade, point. | Medium B |
| RHT21 | 29°32'40.40"S | 23° 2'35.90"E | MSA/LSA | Red-brown / black gravels. Sparse vegetation. 2 blades. | Medium B |
| RHT22 | 29°32'41.10"S | 23° 2'40.80"E | MSA/LSA | Red-brown / black gravels, sparse vegetation. 2 lithics –scrapers | Medium B |
| RHT23 | 29°32'43.20"S | 23° 2'44.00"E | MSA/LSA | Red-brown / black gravels. 2 lithics. Flake/core and point. | Medium B |
| RHT24 | 29°32'51.80"S | 23° 2'31.90"E | MSA/LSA | Red-brown / black gravels. 8 lithics mostly flakes and a blade. | Medium B |

| | | | | | |
|-------|---------------|---------------|---------|---|----------|
| RHT25 | 29°32'51.10"S | 23° 2'26.80"E | MSA/LSA | Red-brown gravels. 7 lithics including chert scraper, blade and core. Also 2 dolomite lithics (scrapers or points) | Medium B |
| RHT26 | 29°32'47.10"S | 23° 2'31.20"E | MSA/LSA | Red-brown gravels, sparse vegetation. 3 lithics – point, scraper and blade. | Medium B |
| RHT27 | 29°32'51.18"S | 23° 2'53.86"E | MSA/LSA | Red-brown gravels, the eastern end of the surveyed area. 3 lithics – a point and scrapers. | Medium B |

8. CATALOGUE OF SITES

8.1. REMAINING EXTENT OF THE FARM REMHOOGTE 152 (SOUTH)

| SITE NO | COORDINATES | | PERIOD |
|--|---|---------------|---------|
| RHT01 | 29°34'2.94"S | 22°58'56.72"E | MSA/LSA |
| <div style="text-align: center;">   </div> | | | |
| <p>OBSERVATIONS: Open flat area with acacia shrubs. An extensive scatter of tools and flakes suggesting a raw material source and manufacturing area.</p> | | | |
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA | | |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - | | |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT02 | 29°34'13.34"S | 22°58'52.30"E | MSA/LSA |



OBSERVATIONS: Open flat area with acacia shrubs. 4 lithics. Flaked core, scraper, blade and flake.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT03 | 29°34'42.21"S | 22°58'38.57"E | MSA/LSA |



OBSERVATIONS: Open flat area with acacia shrubs. Grit with calcretic waste. 2 cores, scraper and flakes.

| | |
|------------------------|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
|------------------------|---|

| | |
|--|---|
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |
|--|---|

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT04 | 29°34'37.81"S | 22°58'55.44"E | MSA/LSA |



OBSERVATIONS: Flat area, sparse vegetation, calcretic waste. 10 lithics including core, blades, scraper and flakes

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT05 | 29°35'14.40"S | 22°58'35.58"E | MSA/LSA |



OBSERVATIONS: Flat area, sparse vegetation, calcretic waste. 9 lithics. 2 blades and flakes.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT06 | 29°34'33.55"S | 22°59'16.73"E | MSA/LSA |



OBSERVATIONS: Calcretic bedrock and gravelly waste. 9 lithics, scraper, blades and flake waste.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT07 | 29°34'46.87"S | 22°59'22.05"E | MSA/LSA |



OBSERVATIONS: Calcretic hardpan and gravelly waste. Acacia scrub. 7 lithics. Blades and scrapers.

| | |
|------------------------|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
|------------------------|---|

| | |
|--|---|
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |
|--|---|

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT10 | 29°35'59.14"S | 22°58'28.99"E | MSA/LSA |



OBSERVATIONS: Calcretic hardpan, acacia bushes. 6 lithics. Blade, scraper and flake waste.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |


| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT11 | 29°34'34.34"S | 22°59'43.80"E | MSA/LSA |



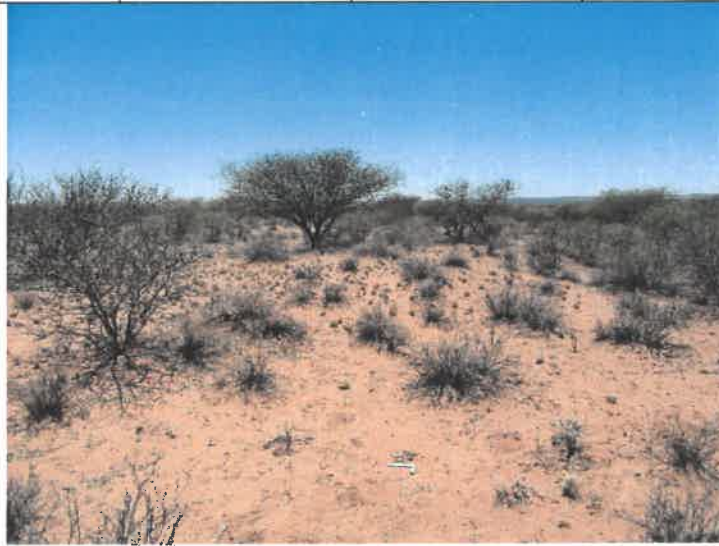
OBSERVATIONS: Open flat area, sparse vegetation. 9 lithics. Blades, core, scraper and flakes.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

8.2. REMAINING EXTENT OF THE FARM REMHOOGTE 152 (NORTH)

| SITE NO | COORDINATES | | PERIOD |
|---|---|---------------|---------|
| RHT08 | 29°32'52.10"S | 22°59'44.90"E | MSA/LSA |
|  | | | |
| <p>OBSERVATIONS: Open flat area with sparse vegetation. Setting of stones in the shape of a “voting” cross. Each arm 2m long to the intersection (total length of each pair is 4m). Purpose/meaning uncertain.</p> | | | |
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA | | |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - | | |

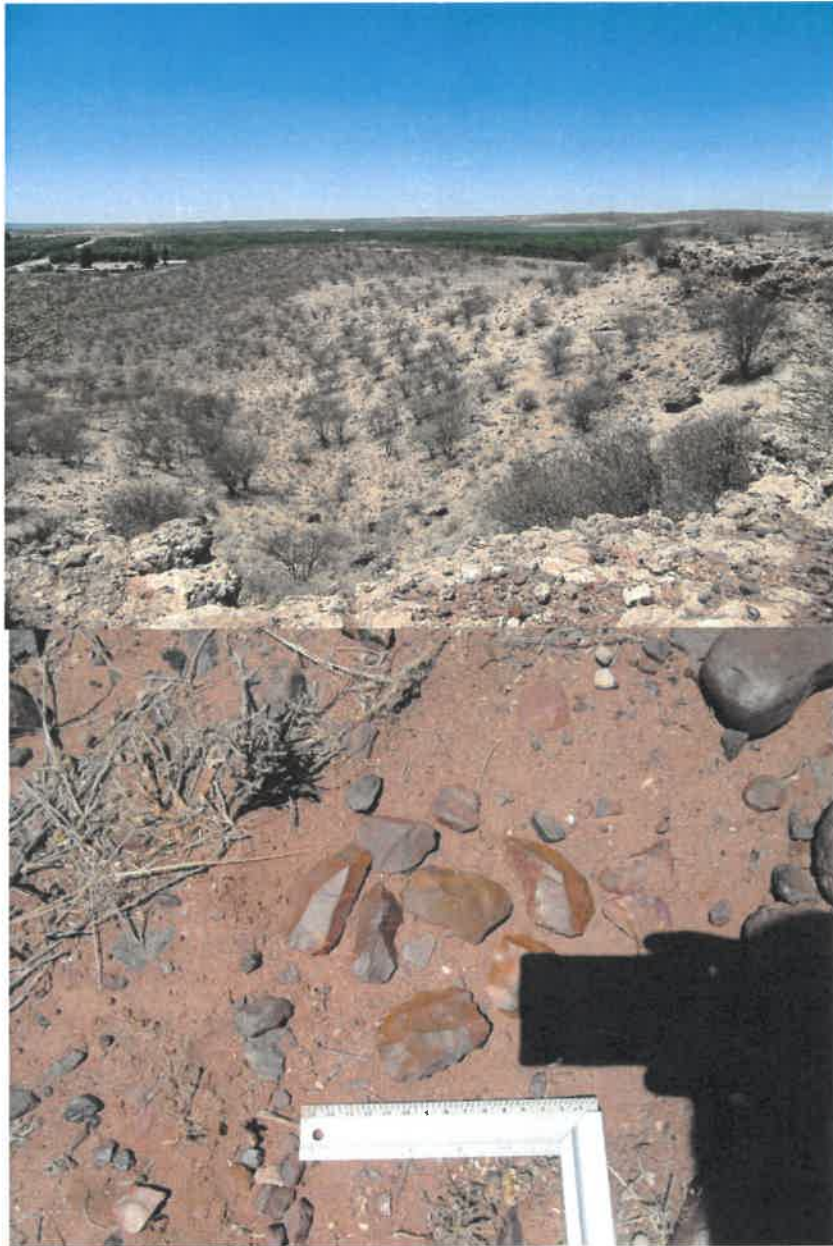
| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT09 | 29°32'47.60"S | 22°59'49.40"E | MSA/LSA |



OBSERVATIONS: An area with Kalahali sand overburden. 7 lithics. Scraper and flake waste.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|--------------|---------|
| RHT12 | 29°32'25.20"S | 23° 0'9.60"E | MSA/LSA |



OBSERVATIONS: On the edge of valley overlooking the plantations on the banks of the Orange River. Calcretic hardpan exposed on the edge of the cliff. 8 lithics including blades, scrapper and waste material.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT13 | 29°32'18.20"S | 23° 0'16.70"E | MSA/LSA |



OBSERVATIONS: Red-brown gravels on a spur below the cliff edge of the Orange River valley. Two blades and flake material.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

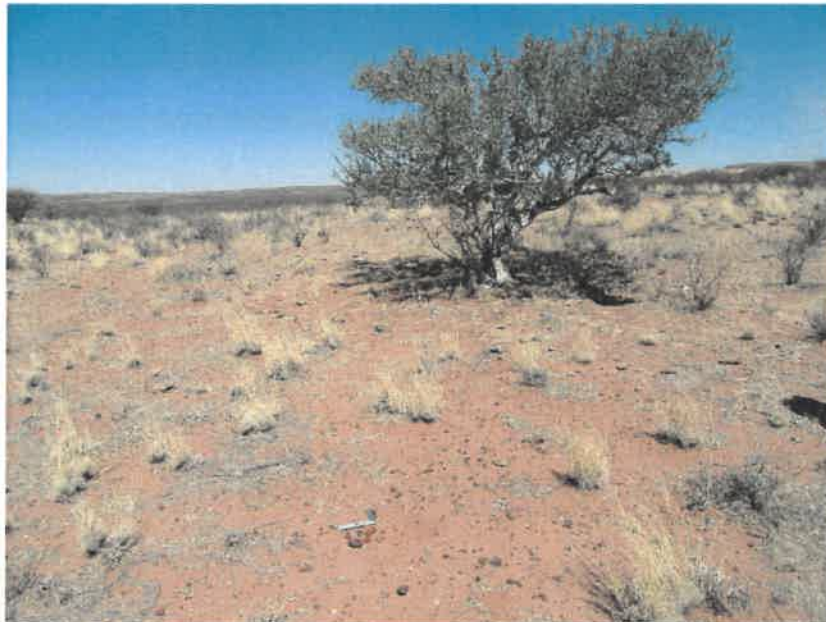
| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT14 | 29°32'22.90"S | 23° 0'15.70"E | MSA/LSA |



OBSERVATIONS: Gravelly surface on a spur below the cliff edge of the Orange River valley. Blade and flake material.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT15 | 29°32'29.12"S | 23° 0'10.51"E | MSA/LSA |



OBSERVATIONS: Kalahali sand overburden on the plain above the Orange River valley. Small scraper, point and flake material.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|--------------|---------|
| RHT16 | 29°32'26.70"S | 23° 0'1.60"E | MSA/LSA |



OBSERVATIONS: Kalahali sand overburden on a plain above the Orange River valley. 3 blades, scraper, grindstone.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT17 | 29°32'49.60"S | 23° 2'16.30"E | MSA/LSA |



OBSERVATIONS: Gravelly surface which mantles the glacial tillite ridge. 5 lithics.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|--------------|---------|
| RHT18 | 29°32'51.00"S | 23° 2'4.00"E | MSA/LSA |



OBSERVATIONS: Red-brown and black gravels on the glacial tillite ridges. 6 lithics include a blade (or blades core), point and scrapers.

| | |
|------------------------|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
|------------------------|---|

| | |
|--|---|
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |
|--|---|

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|--------------|---------|
| RHT19 | 29°32'46.60"S | 23° 2'2.00"E | MSA/LSA |



OBSERVATIONS: Red-brown gravels. 7 lithics including a blade, scrapers and core.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT20 | 29°32'39.50"S | 23° 2'15.50"E | MSA/LSA |



OBSERVATIONS: Red-brown gravels. 6 lithics including cores, broken blade, point.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT21 | 29°32'40.40"S | 23° 2'35.90"E | MSA/LSA |



OBSERVATIONS: Red-brown / black gravels. Sparse vegetation. 2 blades.

| | |
|------------------------|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
|------------------------|---|

| | |
|--|---|
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |
|--|---|

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT22 | 29°32'41.10"S | 23° 2'40.80"E | MSA/LSA |



OBSERVATIONS: Red-brown / black gravels, sparse vegetation. 2 lithics –scrapers.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT23 | 29°32'43.20"S | 23° 2'44.00"E | MSA/LSA |



OBSERVATIONS: Red-brown / black gravels. 2 lithics. Flake/core and point.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT24 | 29°32'51.80"S | 23° 2'31.90"E | MSA/LSA |



OBSERVATIONS: Red-brown / black gravels. 8 lithics mostly flakes and a blade.

| | |
|--|---|
| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

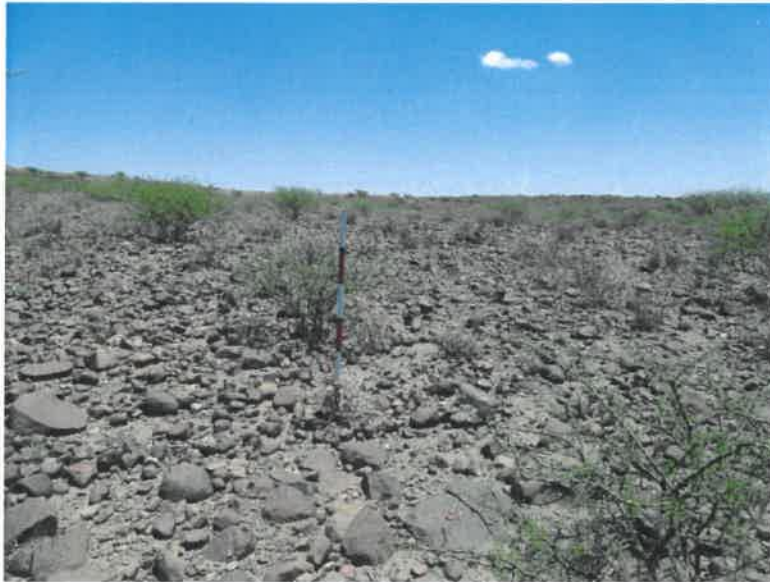
| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT25 | 29°32'51.10"S | 23° 2'26.80"E | MSA/LSA |



OBSERVATIONS: Red-brown gravels. 7 lithics including chert scraper, blade and core. Also 2 dolomite lithics (scrapers or points)

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| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT26 | 29°32'47.10"S | 23° 2'31.20"E | MSA/LSA |



OBSERVATIONS: Red-brown gravels, sparse vegetation. 3 lithics – point, scraper and blade.

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| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

| SITE NO | COORDINATES | | PERIOD |
|---------|---------------|---------------|---------|
| RHT27 | 29°32'51.18"S | 23° 2'53.86"E | MSA/LSA |



OBSERVATIONS: Red-brown gravels, the eastern end of the surveyed area. 3 lithics – a point and scrapers.

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| HERITAGE STATUS | Evidence of stone tool manufacture and use during the MSA/LSA |
| POTENTIAL IMPACTS & PROPOSED MITIGATION | - |

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Legislation and Policies

National Heritage Resources Act (No 25: 1999)

National Environmental Management Act (No 107/1998)

ICOMOS Australia Charter for the Conservation of Places of Cultural Significance (the Burra Charter 1999)

The ICOMOS Charter for the Conservation of Historic Towns and Urban Areas (the Washington Charter 1987)