

**PHASE I HERITAGE IMPACT ASSESSMENT & PALAEOANTHROPOLOGICAL DESK
ASSESSMENT FOR A MINE PROSPECTING APPLICATION ON THE FARMS
GAMAHULI, MALLEY & LA ROCHELLE NEAR OLIFANTSHOEK, UNDER THE
GAMAGARA LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE**



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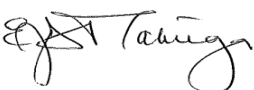
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DOCUMENT CONTROL

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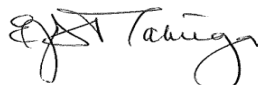
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DECLARATION OF INDEPENDENCE

AHSA Pty Ltd is an independent consultancy: I hereby declare that I 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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EXECUTIVE SUMMARY

1. This Heritage Impact Assessment (HIA) Report has been prepared on behalf of Specialized Animal Solutions (Pty) Ltd in support of a mine prospecting right application on the farms Malley, Gamauli and La Rochelle under the Gamagara Local Municipality, Northern Cape Province. The target mineral is diatomaceous earth which is buried below a sand overburden and is processed into a supplement for stock feed. Preparation of the report entailed a site visit and ground survey undertaken on 5-6 July 2021 during which the heritage sensitivity of the area and potential adverse impacts of the proposed activities were assessed.
2. The farms Malley and Gamauli are coterminous with a shared border, and they can be approached by a gravel road from Olifansthoek a distance of 40 km in a north-westerly direction. The third property, La Rochelle lies 35 km northeast of the other two properties and it can be approached by a gravel road from Kathu.
3. The heritage sensitivity of the property is summarised as follows:

4. *General observations*

A thick cover of grass impaired ground visibility. Barring this constraint, over a long period of time the windblown Kalahali sands would tend to cover surface scatters of artefacts.

5. *The Stone Age*

On the farm Malley, scatters of Stone Age lithics were found along the base of a quartzite ridge. Among the finds were hand-axes, a cleaver and scrapers and flake tools. Together the assemblage represents all three epochs of the Stone Age from the Early Stone Age through the Middle Stone Age to the Later Stone Age. There were no significant concentrations of artefacts to warrant further mitigation action.

6. *The Early Iron Age*

No sites dating to the Iron Age were found.

7. *The Later Iron Age*

No sites of the Later Iron Age period were found.

8. *Commercial farming heritage*

A number buildings and structures were noted on all three farms. Of particular significance is a farmhouse, the principal dwelling structure, on La Rochelle built in 1921, which is an exemplar of the architectural quality of houses in rural areas at the time. The house will not be affected by the project; neither are there any compelling circumstances for alteration or destruction of the building without permission being sought from the heritage authority.

9. *Burial grounds*

There is a burial ground on the farm La Rochelle. The graves are fenced off. As a standard precaution a 100 m buffer will be reserved as illustrated in Figure 8. If it become necessary for the stated activities to be extended into the servitude, an application for a permit must be lodged with the heritage authority.



Burial ground on La Rochelle and prescribed servitude

5.1. Ranking of sites and Risk Assessment

	RANKING	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.	1 burial ground
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. Footprint of early modern mining. Cultural Landscapes. These may be protected at the recommendations of a heritage expert.	2 buildings
3	Medium B	Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented.	8
4	Low	Heritage sites which have been recorded, but considered of minor importance relative to the proposed development.	3
		TOTAL	14

Table 2: Table of Heritage Sites

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING	MITIGATION
MLY01	27°41'52.20"S	22°29'29.50"E	MSA/LSA	North end of a quartzite ridge in the centre of Malley. 1 scraper.	Medium B	No further action
MLY02	27°41'53.20"S	22°29'29.10"E	MSA/LSA	North end of a quartzite ridge in the centre of Malley. 2 scrapers.	Medium B	No further action
MLY03	27°41'48.70"S	22°29'32.50"E	MSA/LSA	North end of a quartzite ridge in the centre of Malley. Hand-axe and flakes.	Medium B	No further action
ML04	27°41'47.80"S	22°29'33.40"E	MSA/LSA	North end of a quartzite ridge in the centre of Malley. 6 flake tools.	Medium B	No further action
MLY05	27°42'34.40"S	22°29'35.40"E	MSA/LSA	Western foot of ridge in the centre of Malley. 2 scrapers.	Medium B	No further action
MLY06	27°42'41.10"S	22°29'34.20"E	MSA/LSA	Western foot of ridge in the centre of Malley. 1 hand axe.	Medium B	No further action
MLY07	27°42'43.20"S	22°29'34.40"E	MSA/LSA	Western foot of ridge in the centre of Malley. 2 scrapers and a cleaver.	Medium B	No further action
MLY08	27°42'52.20"S	22°28'56.82"E	20 th century	Farmstead located on the sandveld. There are several building and the main dwelling structure with a multi-shaped hipped roof. A number of other buildings.	Medium A	Protection under Section 34 of NHRA
GML09	27°41'31.10"S	22°31'19.40"E	20 th century	On the sandveld on Gamauli. Cattle pens and watering site.	Medium B	No further action

GML10	27°42'37.90"S	22°32'18.10"E	MSA/LSA	Gamauli: Location between hills. Cattle pens and watering site.	Low	No further action
GML11	27°42'37.01"S	22°32'17.68"E	Uncertain	Gamauli: Location between hills. A polished stone which forms half of an ellipsoid.	Low	No further action
LRC12	27°22'54.78"S	22°40'27.55"E	20 th Century	La Rochelle: Flat area with scattered mature camel thorn trees. 5 Graves, 4 in a row, and 1 in one isolated 5 m to the south. Enclosed by square fencing. Cairn burial, 4 with headstone, one with concrete head bearing the name of Richard Mataudee, DOD June 1954.	High	100 m servitude applied
LRC13	27°23'7.80"S	22°40'37.40"E	20 th century	La Rochelle farmstead. The main dwelling structure with a hipped roof, gabled wing and a veranda on two sides. Other outbuildings and a wind pump. Built in 1921.	Medium A	Protection under Section 34 of NHRA
LRC14	27°22'1.60"S	22°41'33.80"E	20 th century	Cattle post on the sandveld in the centre of La Rochelle. A rondavel and wind pump. Cattle pens.	Low	No further action

6. CONCLUSION AND RECOMMENDATIONS

In light of these findings it is recommended that the proposed mineral prospecting can go ahead subject to precautions taken to protect the burial ground. As archaeological deposits are usually buried underground, should archaeological artefacts or skeletal material be exposed when prospecting commences, work should be halted, and the provincial heritage resources authority or SAHRA notified for an investigation and evaluation of the finds.

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ABBREVIATIONS

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
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency
BP	Before Present

DEFINITIONS

Archaeological material: remains older than 100 years, resulting from human activities left as evidence of their presence, which are in the form of structure, artefacts, food remains and other traces such as rock paintings or engravings, burials, fireplaces etc.

Artefact: 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 or place including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeontological sites, historic and prehistoric 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. These include intangible resources such as religious practices, ritual ceremonies, oral histories, memories, indigenous knowledge.

Cultural landscape: a stretch of land that reflects “the combined works of nature and man” and demonstrates “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”.¹

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management and sustainable utilization for present and future generations.

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

Early Iron Age: refers to cultural remains dating to the first millennium AD associated with the introduction of metallurgy and agriculture.

Early Stone Age: a long and broad period of stone tool cultures with chronology ranging from around 3 million years ago up to the transition to the Middle Stone Age around 250 000 years ago.

Excavation: a method in which archaeological materials are extracted from the ground, which involves systematic recovery of archaeological remains and their context by removing soil and any other material covering them.

¹ This definition is taken from current terminology as listed on the World Heritage Convention website, URL: <http://whc.unesco.org/en/culturallandscape/#1> accessed 17 March 2016.

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

Historical: means belonging to the past, but often specifically the more recent past, and often used to refer to the period beginning with the appearance of written texts.

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

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 of complex state society and long-distance trade contacts.

Late Stone Age: The period from \pm 30 000 years ago up until the introduction of metals and farming technology around 2000 years ago, but overlapping with the Iron Age in many areas up until the historical period.

Middle Stone Age: a period of stone tool cultures with complex chronologies marked by a shift towards lighter, more mobile toolkit, following the Early Stone Age and preceding the Late Stone Age; the transition from the Early Stone Age was a long process rather than a specific event, and the Middle Stone Age is considered to have begun around 250 000 years ago, seeing the emergence of anatomically modern humans from about 150 000 years ago, and lasting until around 30 000 years ago.

Monuments: architectural works, buildings, sites, sculpture, elements, structures, inscriptions or cave dwellings of an archaeological nature, 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 the protecting and maintaining of the fabric of a place in its existing state and retarding deterioration or change, and may include stabilization where necessary.

Rock Art: various patterned practices of placing markings on rock surfaces, ranging in Southern Africa from engravings to finger paintings to brush-painted imagery.

Sherds: ceramic fragments.

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.

Site Recording Template: a standard document format for site recording.

1. INTRODUCTION

This document is a Heritage Impact Assessment (HIA) Report which has been prepared on behalf of Specialized Animal Solutions Pty Ltd in support of a mine prospecting right application on three farms, namely Malley, Gamauli and La Rochelle under the Gamagara Local Municipality, Northern Cape Province. Preparation of the report entailed a site visit and ground survey undertaken on 5-6 July 2021 during which heritage sensitivity and potential adverse impacts of the proposed activities were assessed.

1.1. Nature of proposed activities

The target mineral is diatomaceous earth which is buried below a sand overburden and is processed into a supplement for stock feed. Prospecting for the mineral may entail the following activities:

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

As heritage resources above and below the surface are likely to be damaged or destroyed, the rationale of an HIA is mitigation based on a clear understanding beforehand of what is culturally significant on the property.

1.2. Location and physical setting

The farms Malley and Gamauli are coterminous with a shared north-south aligned border, and they can be approached by a gravel road from Olifansthoek a distance of 40 km in a north-westerly direction. The third property, La Rochelle lies 35 km northeast of the other two properties and it can be approached by a gravel road from Kathu.

Malley and Gamauli lie on a sandveld on the wetter margins of the Kalahari Desert. On both farms an extensive flat terrain is broken by north-south quartzite ridges that

are prominent in the landscape. The flat areas support a grassland and thick ground cover impairing visibility due to good rains in the past rainy season. Trees and shrubs are scattered on the plain while acacia scrub dominated by hooked thorn bushes, *haakbos* (*Senegalia mellifera*) grows on the hill sides and forms a shield along the foot of the ridges (Figures 1-4).

On the farm La Rochelle terrain features are basically similar to those observed on the other farms except for the absence trending hills. Instead there are two prominent dome-shaped hills on the boundaries of the property. Another vegetation element are scattered mature camel thorn trees (*Acacia erioloba*) which provide visual breaks in the flat landscape (Figures 1, 5-6).

LATITUDE	LONGITUDE	PROPERTY
27°42'17.40"S	22°29'1.35"E	Approx. centre of Malley
27°43'15.49"S	22°32'3.17"E	Approx. centre of Gamauli
27°22'13.76"S	22°41'47.98"E	Approx. centre of La Rochelle

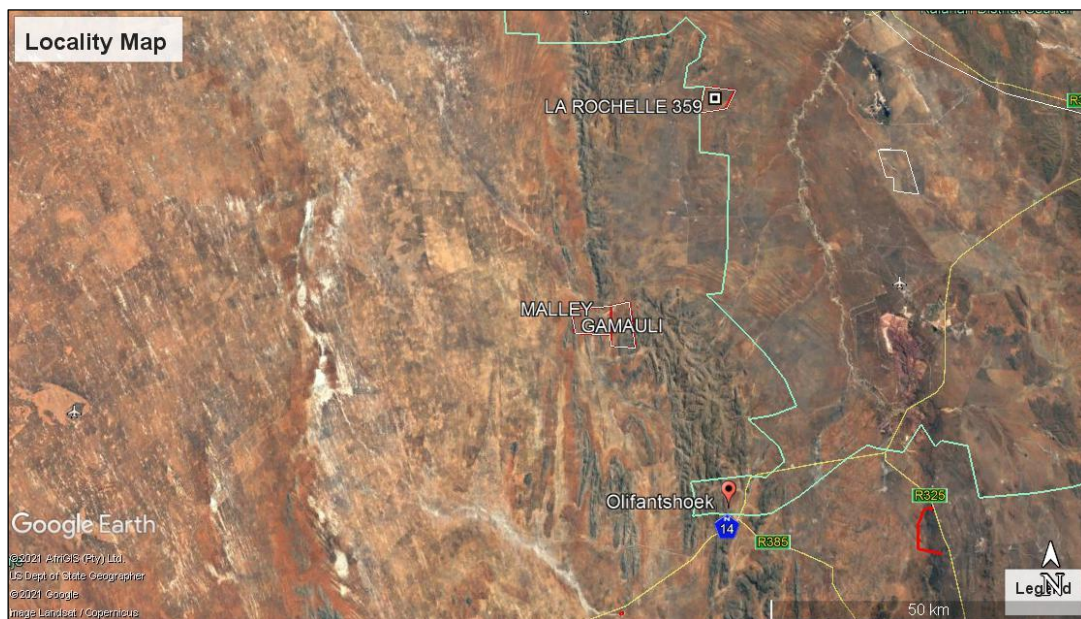


Figure 1: Google Earth map shows the location of the farms Malley, Gamauli and La Rochelle north of Olifantshoek in the Northern Cape Province



Figure 2. View east from Malley shows a grass plain in the foreground and a north-south trending ridge in the background. The ridge lies in the centre of the property



Figure 3: Close view of ridge on Malley, note acacia scrub vegetation



Figure 4. On Gamauli, a typical cattle post and watering site



Figure 5: A mature camel thorn (*Acacia erioloba*) situated near the farmstead on La Rochelle



Figure 6: A stand of mature camel thorn trees on the farm La Rochelle



Figure 7: A dome-shaped hill at the southeast boundary corner of La Rochelle. The farm road exposes superficial sands

2. LEGAL FRAMEWORK

This heritage impact assessment fulfils an onus on developers to safeguard heritage resources. This obligation has been legislated with Sections 34, 35, 36 and 38 of the National Heritage Resources Act (No 25 of 1999) forming the context in which this HIA report has been prepared.

2.1. Section 38 of National Heritage Resources Act (No 25 of 1999) on Heritage Impact Assessments

Section 38 of the NHRA lists activities and thresholds that trigger an 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 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 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. Definition of heritage (National Estate)

² Areal extent of the proposed development triggers the HIA.

Section 3 of NHRA lists a wide range of cultural phenomena which could be defined as heritage, or the *National Estate* (3(2)). Section 3(3) outlines criteria upon which heritage value is ascribed. This Section is useful as a field checklist for the identification of heritage resources.

2.3. Protection of buildings and structures older than 60 years

Section 34 of the NHRA 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.

2.4. 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.

2.5. 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.

2.6. The National Environmental Management Act (No 107 of 1998)

This 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.

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

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 search through existing literature was undertaken to understand the archaeological and historical context for the study area. Reports of previous HIA studies which have

been conducted in the locality of the study were particularly useful. The following reports provide indicators on the archaeological potential of the broader area:

Fourie, W. 2015. *The proposed upgrade of the 66kV network in the Kuruman area, Northern Cape Province* (PGS Heritage)

The report concerned a heritage survey along the servitude of a proposed Eskom power line from Kuruman to Hotazel passing north of the farm La Rochelle (map on p. 10 of the report). Two cemeteries, several historic farmsteads, historic asbestos mines, a sacred site, a Provincial Monument and a memorial were recorded. No Stone Age finds were reported (p. iv).

Schalkwyk, J. A. 2020. *The development of a power line, access road and above ground storage of LPG gas as part of the Proposed Kagiso Solar Power Plant on the Remaining Extent of the Farm Kameelaar No 315 Registration Division Kuruman, Northern Cape Province.*

The footprint of the development lies south of Hotazel. No heritage finds were reported.

Dreyer, Corbus. 2014. *First Phase Archaeological & Heritage Investigation of the Proposed Mine Prospecting at the Remaining Extent of the Farm Inglesby 580 near Olifantshoek, Northern Cape Province: pp7-8.*

Stone Age material of all periods has been reported in the farm Paling which lies southeast of Olifantshoek and northwest of Postmasburg. Rock engravings have also been reported in the same area at Beeshoek Mine and Paling Farm where core flakes, blades, segments and scrapers made out of silcrete, jasper and quartzite have been seen. Rock paintings have been documented at Inglesby Farm neighbouring Gamayana 532 northwest of Olifantshoek.

Matenga, E. 2021. *Heritage Impact Assessment in terms of Section 38(8) of the National Heritage Resources Act (No 25/1999) for the Proposed Agricultural*

Development (Hydroponics Systems Project) on the Remaining Extent of the Farm Marsh Near Kathu, Northern Cape.

Scatters of lithics comprising a few scrapers and significantly many flakes were recorded. While the area around Kathu has a significant Early Stone Age footprint, the finds on the farm Marsh 467 appear to date to the Middle Stone Age and none of the of the ESA type tools were found

3.2. Fieldwork

During a ground survey 6 July 2021 observations were made by means walking surveys and a vehicle.

3.3. Limitations of the study

On both farms a thick cover of grass impaired ground visibility (Figure 7). It is possible that surface discard of artefacts and manufacturing waste were covered by the windblown sand (Figure 7).



Figure 7: A thick cover of grass on La Rochelle impaired ground visibility

4. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

An outline of the cultural sequence in South Africa provides a theoretical framework for the identification of features / structures and objects of archaeological, historical and cultural interest. As summary of the reconstructed cultural sequence is given below:

4.1. Cultural sequence summary³

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

4.3. Appearance of hominids

South Africa has yielded a very good record of fossil hominids, proto-humans which appeared in South Africa more than 3million years ago. Three famous sites in

³ Adapted from Exigo Consultancy. 2015. Frances Baard District Municipality: Proposed Nkandla Extension 2 Township Establishment, Erf 258 Nkandla, Hartswater, Northern Cape Province.

Gauteng, Limpopo and Northwest Provinces have been collectively named the Cradle of Humankind and inscribed as a serial UNESCO World Heritage Site. No hominid fossils have been reported in the broader locality of the study area. On the farm Eselkloupan off the N8 highway near Groblershoop, c 120 km southwest of Olifantshoek, there is fossilised track resembling donkey spoor. The age of the fossil imprints is not known.⁴

4.4. The Early Stone Age

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

The Stone Age dates back more than 2 million years representing a more explicit record of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages. These early humans 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. Such tools bore a consistent shape such as the pear-shaped handaxe, cleavers and core tools (Deacon & Deacon, 1999). 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. The Wonderwerk Cave near Kuruman has become a benchmark for the characterisation of the Stone Age. Excavations revealed a long sequence of occupation spanning the Early (ESA), Middle (MSA) and Later Stone Ages.⁵

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

⁴ Groblershoop: Green Kalahari Region. Found at:

<https://www.experiencenortherncape.com/visitor/citiesandtowns/groblershoop>

⁵ <http://www.southafrica.net/za/en/articles/entry/article-southafrica.net-the-wonderwerk-cave>.

The Middle Stone Age (MSA) appeared 250 000 years ago and 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.⁶

Several surveys by this author undertaken along the banks of the Orange River have consistently established the Middle Stone Age footprint.

4.4.3. 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. The practitioners of rock art were the ancestors of the San and sites abound in the whole of Southern Africa. 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.

Stone Age material of all periods has been reported in the farm Paling which lies southeast of Olifantshoek and northwest of Postmasburg. Rock engravings have also been reported in the same area at Beeshoek Mine and Paling Farm where core flakes, blades, segments and scrapers made out of silcrete, jasper and quartzite have been seen. Rock paintings have been documented at Inglesby Farm northwest of Olifantshoek. There may be more painted sites in the area, but farmers are reported to be cautious about disclosure fearing exposure to public visits.⁷

⁶ Deacon, J & H. Deacon. 1999. *Human Beginnings in South Africa*. Cape Town: David Philip.

⁷ Pers. Comm. May 2015. Mr Rean Van De Luytgaarden, Owner of Elephant Rock Inn, Olifantshoek.

On a more general note Stone Age material occurs in sparse distribution described as background scatters over the broader area.

4.5. 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.

4.5.1. Early Iron Age

According to Huffman (2007) there were two migration streams of Early Iron Age (EIA) communities 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.

4.5.2. The Later Iron Age

The LIA is marked by the presence of extensive stonewalled settlements such as the Tlhaping capital at Dithakong near Kuruman.⁸

⁸ 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

4.6. Colonial Occupation

4.6.1. *Early contact with Europeans*

The area encompassing Olifantshoek, Groblershoop, the Langeberg (Majeng) and the Korannaberg ranges was home to a number of Tswana groups, of particular significance being the Tlaping and Tlaro. On the eve of colonial occupation a number of traders, hunters, explorers and missionaries transited the area. A few can be named here - PJ Truter's and William Somerville (arriving in 1801), Donovan, Burchell and Campbell, James Read (arriving around 1870) William Sanderson. The arrival of large numbers of Great Trek Boers from the Cape Colony to the borders of Bechuanaland and Griqualand West in 1836 caused conflict with many Tswana groups and the missionaries of the London Mission Society.

The Boers entered the area in the 1860s, and conflict with Tswana communities escalated when the Korana and Griqua communities and the British government became involved. The annexation of Bechuanaland by the British in 1885 imposed further territorial restrictions on these groups. In 1895, when British Bechuanaland was incorporated into the Cape Colony, the land inside the reserves remained the property of the Tswana and could only be alienated with the consent of the British Secretary of State (Engelbrecht & Fivaz, 2018: 17-18, 19).

4.6.2. *The Langberg Rebellion 1896-7*

Mounting anger among the Tlaping and Tlaro over the confiscation of land, confinement to reserves and continued demands for land at the expense of the African reserves led to rebellion. The outbreak of the bovine disease, rinderpest, in many parts of southern Africa provided the ignition. Demand by the British that the Tlaro put down their horses to contain the epidemic was interpreted as sabotage in preparation for war.⁹ Chief Toto Makgolokwe of the Tlaro led his people into war and made a good account of himself by defeating British Forces in one of the encounters which lasted 8 months.¹⁰ (Figure 10). British war graves on a farm west of Olifantshoek are a tourist attraction. The farms Langkloof, Inglesby, Lukin,

⁹ Information provided by Mr Rean Van De Luytgaarden, Owner of Elephant Rock Inn, Olifantshoek (2015).

¹⁰ http://en.wikipedia.org/wiki/Toto_Makgolokwe (August 2015)

Gamayana, Pudahush, Toto, Luka and Hopkins west of Olifantshoek are named after major role players in the Langberg Rebellion¹¹

The British forces eventually captured Toto Makgolokwe and his son Phemelo together with King (Kgosi) Galeshewe who had sheltered in the area. Toto and his son were taken prisoners to Robben Island; Toto died there (Figure 9).

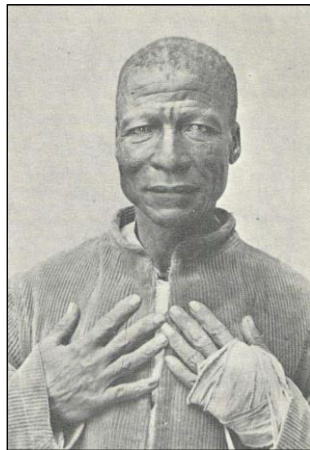


Figure 8: Toto, leader of the Tlaro (From Fourie, 2018: 34).

4.6.3. *Olifantshoek and Kathu: A brief history*

Olifantshoek was founded in 1912 on the foot of the Lange Mountains. It was named after the tusk of an elephant which was used as payment for the farm on which the town was built. It is said that the area was abundant with elephants and many elephant bones were found in the vicinity.¹²

Kathu was founded in the late-1960s or early-1970s and developed on the back of a mining boom based on abundant iron and manganese ores in the region.

The above is the framework for identifying heritage resources in the area.

¹¹ Corbus Dreyer, 2014. First Phase Archaeological & Heritage Investigation of the Proposed Mine Prospecting at the Remaining Extent of the Farm Inglesby 580 near Olifantshoek, Northern Cape Province

¹² About Olifantshoek. Found at: <https://www.sa-venues.com/attractionsnc/olifantshoek.php> Consulted in July 2021

5. FINDINGS OF THE HERITAGE SURVEY

The heritage sensitivity of the property is summarised as follows:

6.1. General observations

A thick cover of grass impaired ground visibility. Barring this constraint, over a long period of time it is likely that surface scatters of artefacts were buried by the windblown Kalahali sands.

6.2. The Stone Age

On the farm Malley, scatters of Stone Age lithics were found along the base of a quartzite ridge. Among the finds were hand-axes, a cleaver, scrapers and flake tools. The assemblage represents all three epochs of the Stone Age from the Early Stone Age through the Middle Stone Age to the Later Stone Age. There were no significant concentrations of artefacts to warrant further mitigation action.

6.3. The Early Iron Age

No sites dating to the Iron Age were found.

6.4. The Later Iron Age

No sites of the Later Iron Age period were found.

6.5. Commercial farming heritage

A number buildings and structures were noted on all three farms. Of particular significance is a farmhouse, the principal dwelling structure on La Rochelle, built in 1921 which is an exemplar of the architectural quality of houses in commercial areas at the time. The house will not be affected by the proposed mining operations; neither are there other compelling circumstances for alteration or destruction of the building.

6.6. Burial grounds

There is a burial ground on the farm La Rochelle. The graves are fenced off. As a standard precaution a 100 m buffer will be reserved as illustrated in Figure 8. If an

extension of the stated activities into the servitude becomes necessary, an application for a permit must be lodged with the heritage authority.



Figure 8: Burial ground on La Rochelle and prescribed servitude

6.7. Ranking of sites and Risk Assessment

	RANKING	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.	1 burial ground
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. Footprint of early modern mining. Cultural Landscapes. These may be protected at the recommendations of a heritage expert.	2 buildings
3	Medium B	Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented.	9
4	Low	Heritage sites which have been recorded, but considered of minor importance relative to the proposed development.	2
		TOTAL	14

Table 2: Table of Heritage Sites

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING	MITIGATION
MLY01	27°41'52.20"S	22°29'29.50"E	MSA/LSA	North end of a quartzite ridge in the centre of Malley. 1 scraper.	Medium B	No further action
MLY02	27°41'53.20"S	22°29'29.10"E	MSA/LSA	North end of a quartzite ridge in the centre of Malley. 2 scrapers.	Medium B	No further action
MLY03	27°41'48.70"S	22°29'32.50"E	MSA/LSA	North end of a quartzite ridge in the centre of Malley. Handaxe and flakes.	Medium B	No further action
ML04	27°41'47.80"S	22°29'33.40"E	MSA/LSA	North end of a quartzite ridge in the centre of Malley. 6 flake tools.	Medium B	No further action
MLY05	27°42'34.40"S	22°29'35.40"E	MSA/LSA	Western foot of ridge in the centre of Malley. 2 scrapers.	Medium B	No further action
MLY06	27°42'41.10"S	22°29'34.20"E	MSA/LSA	Western foot of ridge in the centre of Malley. 1 hand axe.	Medium B	No further action
MLY07	27°42'43.20"S	22°29'34.40"E	MSA/LSA	Western foot of ridge in the centre of Malley. 2 scrapers and a cleaver.	Medium B	No further action
MLY08	27°42'52.20"S	22°28'56.82"E	20 th century	Farmstead located on the sandveld. There are several building and the main dwelling structure with a multi-shaped hipped roof. A number of other buildings.	Medium A	Protection under Section 34 of NHRA

GML09	27°41'31.10"S	22°31'19.40"E	20 th century	On the sandveld on Gamauli. Cattle pens and watering site.	Medium B	No further action
GML10	27°42'37.90"S	22°32'18.10"E	MSA/LSA	Gamauli: Location between hills. Cattle pens and watering site.	Low	No further action
GML11	27°42'37.01"S	22°32'17.68"E	Uncertain	Gamauli: Location between hills. A polished stone which forms half of an ellipsoid.	Low	No further action
LRC12	27°22'54.78"S	22°40'27.55"E	20 th Century	La Rochelle: Flat area with scattered mature camel thorn trees. 5 Graves, 4 in a row, and 1 in one isolated 5 m to the south. Enclosed by square fencing. Cairn burial, 4 with headstone, one with concrete head bearing the name of Richard Mataudee, DOD June 1954.	High	100 m servitude applied
LRC13	27°23'7.80"S	22°40'37.40"E	20 th century	La Rochelle farmstead. The main dwelling structure with a hipped roof, gabled wing and a veranda on two sides. Other outbuildings and a wind pump. Built in 1921.	Medium A	Protection under Section 34 of NHRA
LRC14	27°22'1.60"S	22°41'33.80"E	20 th century	Cattle post on the sandveld in the centre of La Rochelle. A rondavel and wind pump. Cattle pens.	Medium B	No further action



Figure 9: Heritage sites on the farms Malley and Gamahuli

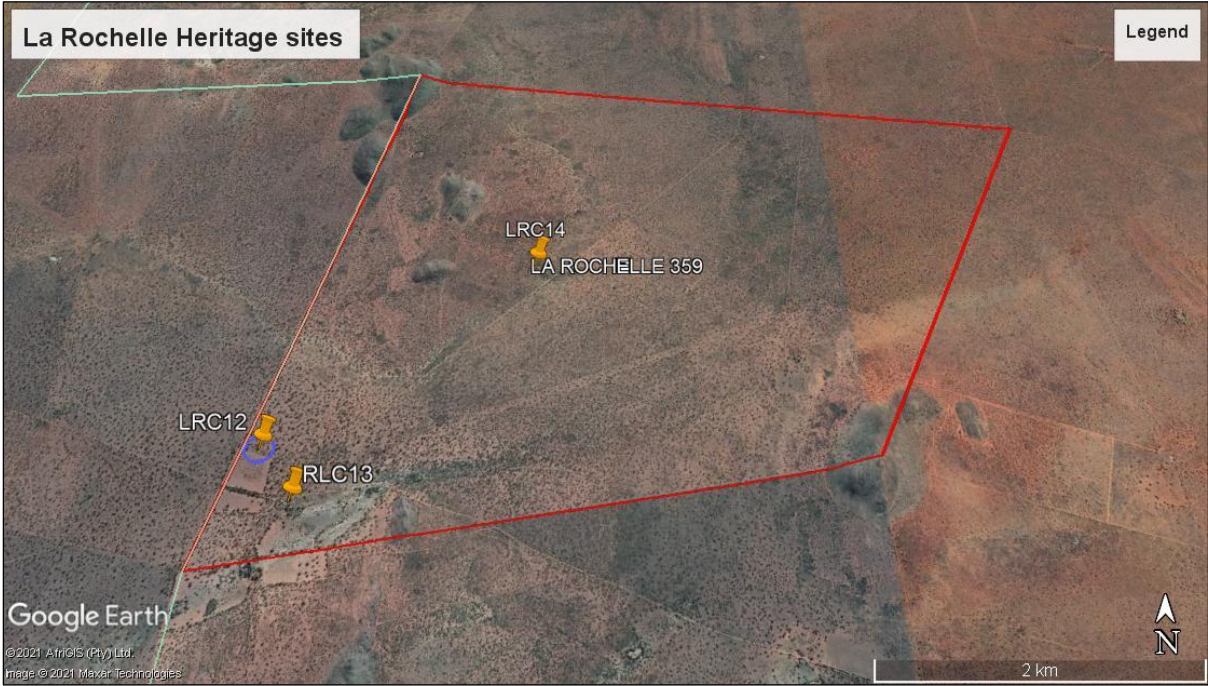


Figure 10: Heritage sites on the farm La Rochelle

6.8. Assessment of Impacts using the Heritage Impact Assessment Statutory Framework

Section 38 of the NHRA

Section 38 (Subsection 3) of the National Heritage Resources Act also provides a schedule of tasks to be undertaken in an HIA process:

Section 38(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

(a) The identification and mapping of all heritage resources in the area affected
14 heritage sites were recorded.

(b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7

There are no Grade I or Grade II sites.

(c) An assessment of the impact of the development on such heritage resources
N/A.

(i) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development

Mining in the Northern Cape offers great prospect for recovery and growth of the South African economy which is currently constrained by a number of factors including the global coronavirus pandemic. Diatomaceous earth is processed into a supplement for stock feeds, and it has many other industrial uses. Stock farming is critical for sustainable management of food security.

(e) The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources

Public Participation for the management of heritage resources was undertaken at the same time as the stakeholder engagements for the broader EIA process. The outcomes of the engagements are found in the main EIA report.

(f) If heritage resources will be adversely affected by the proposed development, the consideration of alternatives

N/A

(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.

In the event of the discovery of other heritage resources during the construction phase, the Provincial Heritage Resources Authority or SAHRA will be informed immediately and an archaeologist or heritage expert called to attend.

6.9. 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 No. 25 (1999)
Stage/Phase	Excavation of test pits, ground clearance.
Extent of Impact	Excavations and ground clearance can result in the damage and destruction of archaeological 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 archaeological or other heritage relics are found during the construction phase, heritage authorities will be advised immediately and a heritage specialist will be called to attend.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

7. CONCLUSION AND RECOMMENDATIONS

In light of these findings it is recommended that the proposed mineral prospecting can go ahead subject to precautions taken to protect the burial ground. As archaeological deposits are usually buried underground, should archaeological artefacts or skeletal material be exposed when prospecting commences, work should be halted, and the provincial heritage resources authority or SAHRA notified for an investigation and evaluation of the finds.

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

9. ACKNOWLEDGEMENTS

Mr Kotie van der Merwe, owner of Malley.

10. CATALOGUE OF HERITAGE SITES

SITE NO	COORDINATES		PERIOD
MLY01	27°41'52.20"S	22°29'29.50"E	MSA/LSA
			
DESCRIPTION: North end of a quartzite ridge in the centre of Malley. 1 scraper.			
HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA		
MITIGATION	No further action required.		

SITE NO	COORDINATES		PERIOD
MLY02	27°41'53.20"S	22°29'29.10"E	MSA/LSA

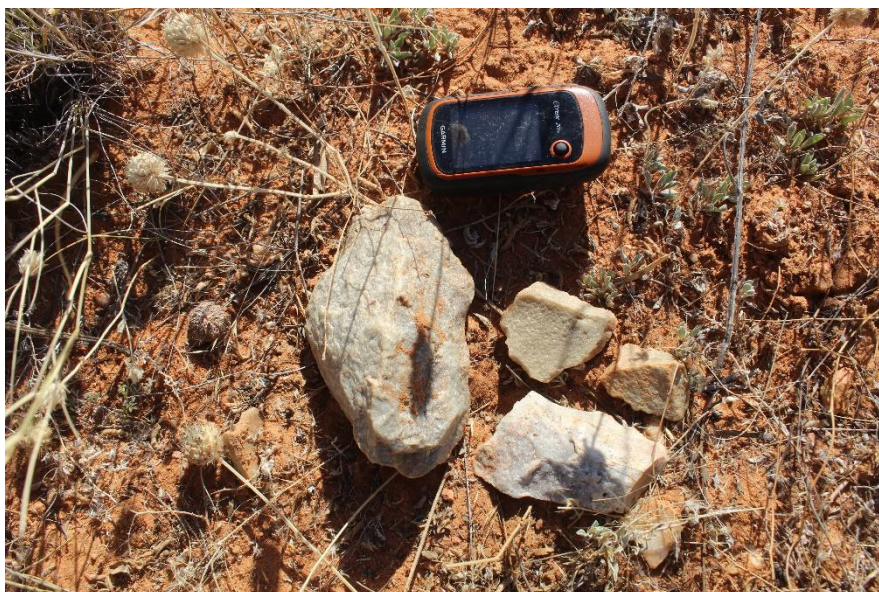


DESCRIPTION: North end of a quartzite ridge in the centre of Malley. 2 scrapers.

HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA
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MITIGATION	No further action required.
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SITE NO	COORDINATES		PERIOD
MLY03	27°41'48.70"S	22°29'32.50"E	MSA/LSA



DESCRIPTION: North end of a quartzite ridge in the centre of Malley. Handaxe and flakes.

HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA
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MITIGATION	No further action required.
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SITE NO	COORDINATES		PERIOD
ML04	27°41'47.80"S	22°29'33.40"E	MSA/LSA



DESCRIPTION: North end of a quartzite ridge in the centre of Malley. 6 flake tools.

HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA
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MITIGATION	No further action required.
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SITE NO	COORDINATES		PERIOD
MLY05	27°42'34.40"S	22°29'35.40"E	MSA/LSA



DESCRIPTION: Western foot of ridge in the centre of Malley. 2 scrapers.

HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA
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MITIGATION	No further action required.
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SITE NO	COORDINATES		PERIOD
MLY06	27°42'41.10"S	22°29'34.20"E	MSA/LSA



DESCRIPTION: Western foot of ridge in the centre of Malley. 1 hand axe.

HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA
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MITIGATION	No further action required.
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SITE NO	COORDINATES		PERIOD
MLY07	27°42'43.20"S	22°29'34.40"E	MSA/LSA



DESCRIPTION: Western foot of ridge in the centre of Malley. 2 scrapers and a cleaver.

HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA
MITIGATION	No further action required.


SITE NO	COORDINATES		PERIOD
MLY08	27°42'52.20"S	22°28'56.82"E	20 th century



DESCRIPTION: Farmstead located on the sandveld. There are several building and the main dwelling structure with a multi-shaped hipped roof. A number of other buildings.

HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA
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MITIGATION	No further action required.
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SITE NO	COORDINATES		PERIOD
GML09	27°41'31.10"S	22°31'19.40"E	20 th century
			
<p>DESCRIPTION: On the sandveld on Gamauli. Cattle pens and watering site.</p>			
HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA		
MITIGATION	No further action required.		

SITE NO	COORDINATES		PERIOD
GML10	27°42'37.90"S	22°32'18.10"E	20 th century



DESCRIPTION: Gamauli: Location between hills. Cattle pens and watering site.

HERITAGE SIGNIFICANCE Association with modern commercial farming.

MITIGATION No further action required.

SITE NO	COORDINATES		PERIOD
GML11	27°42'37.01"S	22°32'17.68"E	Uncertain



DESCRIPTION: Gamauli: Location between hills. A polished stone which forms half of an ellipsoid.

HERITAGE SIGNIFICANCE Evidence of hunter-gatherer activities during the MSA/LSA

MITIGATION No further action required.

SITE NO	COORDINATES		PERIOD
LRC12	27°22'54.78"S	22°40'27.55"E	20 th Century



4 graves obscured by twigs



DESCRIPTION: La Rochelle: Flat area with scattered mature camel thorn trees. 5 Graves, 4 in a row, and 1 in one isolated 5 m to the south. Enclosed by square fencing. Cairn burial, 4 with headstone, one with concrete head bearing the name of Richard Mataudee, DOD June 1954.

HERITAGE SIGNIFICANCE	Section 36 of NHRA
MITIGATION	100m servitude around the burial ground.

SITE NO	COORDINATES		PERIOD
LRC13	27°23'7.80"S	22°40'37.40"E	20 th century



DESCRIPTION: La Rochelle farmstead. The main dwelling structure with a hipped roof, gabled wing and a veranda on two sides. Other outbuildings and a wind pump. Built in 1921.

HERITAGE SIGNIFICANCE Association with modern commercial farming

MITIGATION Building protected under Section 34 of NHRA.

SITE NO	COORDINATES		PERIOD
LRC14	27°22'1.60"S	22°41'33.80"E	20 th century



DESCRIPTION: Cattle post on the sandveld in the centre of La Rochelle. A rondavel and wind pump. Cattle pens.

HERITAGE SIGNIFICANCE

MITIGATION

No further action required.