

Heritage Impact Assessment in Terms of Section 38(8) of the National Heritage Resources Act (no 25/1999) for a Mine Prospecting Application on Portion 20 of the Farm Mamatwan 331 near Hotazel, in the Gamagara Local Municipality, Northern Cape

Prepared by

Edward Matenga

(Ph.D. Archaeology & Heritage, MPhil, Archaeology; Uppsala/Sweden)

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(A)HSA Archaeological and Heritage Services Africa (Pty) Ltd

Reg. No. 2016/281687/07

48 Jacqueline Street, The Reeds, 0157, Centurion, Pretoria

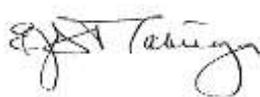
Email: e.matenga598@gmail.com.

Cell: +27 73 981 0637 / +2784 073 7774

Website: www.archaeologicalheritage.co.za

DOCUMENTS CONTROL

APPLICANT	ENVIRONMENTAL CONSULTANT
Yone STEM Frontiers (Pty) Ltd	Abantu Environmental Consultants (Pty) Ltd

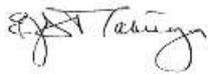
	Name	Signature	Date
FIELD WORK & REPORT	E. Matenga		24 July 2023

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 interests in the undertaking of the proposed activity, other than to be remunerated for work performed, in terms of 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.



Full Name: Edward J. Matenga

Title / Position: Heritage Management Consultant

Qualifications: PhD (Archaeology & Heritage, Uppsala University, Sweden), MPhil (Uppsala), Certificate in the Integrated Conservation of Territories and Landscapes of Heritage Value (ICCROM, Rome)

EXECUTIVE SUMMARY

1. This Heritage Impact Assessment (HIA) report has been prepared using desktop resources in support of a prospecting application on Portion 20 of the Farm Mamatwan 331 near Hotazel, in the Gamagara Local Municipality, Northern Cape.
2. The Applicant, Yone STEM Frontiers (Pty) Ltd, intends to mine iron and manganese.
3. The report is based on consultation of heritage studies that have been undertaken in the broader area to provide contextual data while arrangements are being made for access to the property to conduct a ground survey.

4. Findings of the desktop assessment (general observations)

There is an established presence of Stone Age material in the broader area represented by scattered distributions of artifacts sometimes localized along the edges of streams and less likely on the sand-covered plains. They are referred to as “background scatters” and none of these occurrences have been considered to warrant further action after they have been recorded.

Other heritage resources that might occur in the broader area are:

5. Rock engravings (petroglyphs) dating from the Middle Stone Age to the Late Stone Age periods.
6. Rock Paintings dating from the Middle Stone Age to the Later Stone Age periods.
7. Buildings and objects associated with modern commercial farming from the 19th century.
8. Graves, burial grounds, and human bones.
9. The Table below provides a summary of the probability of the occurrence of different typologies of heritage and a confidence rating of the predictions. The ranking system relates to the national grading of heritage sites (adapted from Guidelines for Involving

Heritage Specialists in EIA processes by Winter S and & N. Baumann (2005, p19). The probability of the occurrence of different grades of sites confirms the view that no finds that may occur in the study area (except for graves) will warrant further action apart from documentation.

10. Probability of occurrence of heritage resources

GRADE	RANKING	SIGNIFICANCE	PROBABILITY OF OCCURRENCE	CONFIDENCE RATING
1a	National	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e., formally declared or potential Grade 1, 2 or 3A heritage resources,	0%	High
1b	Burial grounds	Graves are sacred and their treatment is a sensitive issue.	50%	High
2	Provincial	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e., formally declared or potential 2 heritage resources	0%	High
3A	Local	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e., formally declared or potential Grade 3A heritage resources	10%	Medium
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e., potential Grade 3B heritage resources	10%	High
3C	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e., potential Grade 3C heritage resources	75%	High

11. Chance Finds Procedure (CPF)

When prospecting commences, an Archaeological and Heritage Chance Find Procedure (CPF) will be used for the curation of heritage resources that may occur in the footprint of the prospecting right.

12. Conclusion and recommendations

In light of the findings of the desk assessment, the prospecting right application may be approved. The study is mindful that some important discoveries may be made during prospecting. If this happens, operations 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.

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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
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency

1. INTRODUCTION

This Heritage Impact Assessment (HIA) report has been prepared in support of a mine prospecting application on Portion 20 of the Farm Mamatwan 331 near Kuruman, Northern Cape in the Gamagara Local Municipality in the Northern Cape Province. It is a desktop report based on a literature study and first-hand knowledge from impact assessment ground surveys that have been undertaken by this author on several properties in the broader locality.

1.1. Nature of proposed activities

The applicant intends to conduct bulk sampling for manganese and iron, which entails the following activities:

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

Heritage resources may be destroyed or disturbed if they occur in the footprint of the proposed development. The duty to protect heritage resources likely at risk as a result is enacted in Section 38 of the National Heritage Resources Act, which requires that a Heritage Impact Assessment is conducted to inform decisions on the mitigation of potentially harmful impacts. Since a site visit is not possible at the present time a desktop report is an initial screen of the property to determine its heritage sensitivity.

1.2. Location and physical setting

The portion of the farm Mamatwan is situated 20 km south of Hotazel. The terrain is a flat sandveld supporting savanna grasses and scattered trees. Drainage is controlled by the Gamagara River with its headstreams between Kathu and Olifansthoek. The river cuts a north-westerly course through the high plain passing 8 km west of Mamatwan, before turning southwest in a arc towards its confluence with the Orange River a short distance before the border of South Africa and Namibia. There are no other prominent features in the topography except the extensive and deep opencast pit operations at the nearby Tshipi Mine. The

superficial sandy loam soils on Mamatwan are windblown Kalahari sand believed to cover the manganese / iron ore hosting deposits. The sand overburden accumulated over millions of years of wind action. Pictures taken in the vicinity of the property during other field excursions in the area may help to illustrate the physical setting and vegetation characteristics (Figures 3-4).

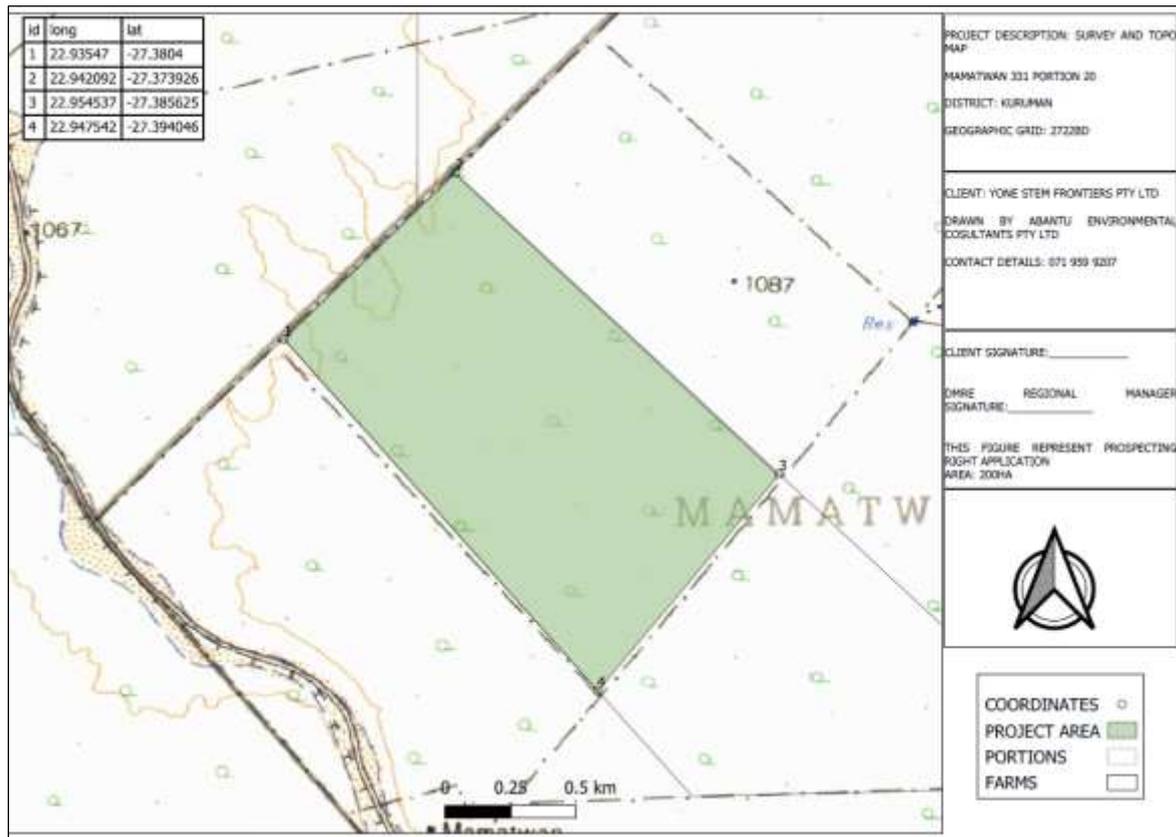


Figure 1: Locality map shows the extent of Portion 20 of the Farm Mamatwan



Figure 2: Google Earth Map showing the location of the Portion 20 of the Farm Mamantwan in close proximity to the opencast mineworks at Tshipi Mine



Figure 3: Typical view of the landscape on in the vicinity of Mamantwan shows scattered trees and grass on sand soils



Figure 3: Another view of the terrain characteristics in the vicinity of Mamatwan

2. LEGAL FRAMEWORK

The principal law on the management of heritage resources is the National Heritage Resources Act (No 25 / 1999) (MHRA).

2.1. Heritage Impact Assessments

Section 38 of the NHRA lists activities and thresholds that trigger an HIA:

38. (1) any person who intends to undertake a development categorised as—

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m 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 regulations by SAHRA or a provincial heritage resources authority.

2.2. Protection of buildings and structures

Section 34 of the NHRA is a precautionary statutory provision to protect all buildings at least 60 years old in case it is found that they are worth retaining as landmarks of cultural heritage significance. It 34 reads:

(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.

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

2.4. 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.

2.5. 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. APPROACH AND METHODOLOGY

3.1. Literature study

This study is based on an intensive search through existing literature for data on the heritage sensitivity of the broader area around Hotazel, Kathu and Kuruman. Heritage Impact Assessment studies conducted in the area are the principal source of information. These reports have been carefully selected considering factors such as distance from the property under study. Using this information, the potential yield of the target area could be reasonably predicted by extrapolation. Extrapolation is a scientific method of building a hypothesis by estimating or predicting results by assuming that what is known and has been established about a particular situation is likely to apply more or less for a neighbouring area/quantity that is unknown.

The author has conducted several heritage impact assessment studies on properties in the vicinity of Kuruman, Kathu and Olifantshoek. See figure 5 for the location of these properties in relation to Mamatwan.

Matenga, E. 2020. *Phase I heritage impact assessment (including palaeontological desk assessment) in terms of Section 38 of the National Heritage Resources Act No 25/1999 for the proposed prospecting and mining right on the Farms Titanic 773 and Gasesa 272 near Kuruman, Northern Cape Province.*

Titanic and Gasesa lie 30 and 10 km respectively northeast of Hotazel. Findings included lithics comprising scrapers, blades cores and flakes recorded in twenty-three (23) places

representing all three epochs. The occurrence of these artefacts along the Matlhwaring River is a pattern consistent with findings of other studies in the broader area (Kusel 2018). An Early Stone Age pear-shaped hand-axe was found. Farm buildings were also noted on the property.

Matenga, E. 2020. *Phase 1 Heritage Impact Assessment Requested in Terms of Section 38 of the National Heritage Resources Act No 25/1999 for the Proposed Prospecting and Mining Right on the Farm Gamolilo 72 near Kuruman, Northern Cape Province*

The farm Gamolilo is situated 42 km NE of Mamatwan. Background scatters of lithics comprising scrapers, blades cores and flakes were recorded in 21 places (sites) dating from the Early Stone Age through the Middle Stone Age to the Late Stone Age. Among these finds were rock engravings (petroglyphs) a recommendation of which was made to protect them. Farm buildings were flagged as contributing to landscape elements associated modern commercial farming.

Matenga, E. 2021. *Phase I Heritage Impact Assessment & Palaeontological Desk Assessment for a Mine Prospecting Application on the Farms Gamahuli, Malley & La Rochelle near Olifantshoek, under the Gamagara Local Municipality, Northern Cape Province*

La Rochelle is lies 25 km west of Mamatwan, while Gamahuli and Malley are 50 km SW to the SW. Two burial grounds of a 19th-20th century date were recorded.

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.*

The farm Marsh 467 is 10 km north of Kathu and 23 km south of Mamatwan. 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.

Matenga, E. 2023. *Phase 1 Heritage Impact Assessment & Palaeontological Assessment (Desktop) for a Mine Prospecting Application on the Farm Perth 343 near Hotazel in the Joe Morolong Local Municipality, Northern Cape.*

The farm Perth lies 75 km north of Mamatwan. Stone Age material was sparsely distributed and confined to an ironstone ridge. There was an occasional hand-axe probably dating to the transition from the Early Stone Age to the Middle Stone Age. Scrapers and blades also recorded date from the Middle Stone Age to the Late Stone Age periods. There were old farm buildings dating from the early 20th century.

On the other hand, several studies in support of Heritage Impact Assessments in the broader area have recorded occurrences of artifacts dating from the Early Stone Age (ESA) through the Middle Stone Age (MSA) to the Late Stone Age (LSA), with a majority falling under the MSA/LSA periods. Generally, finds occur as scatters of scrapers, blades and cores while concentrated finds which may represent manufacturing sites or settlements are rare.

Pelser, A J. and A C Vollenhoven. 2011. *A report on a Heritage Impact Assessment (HIA) for a Proposed New Rail Crossing over the Gamagara River for the Gloria Mine Operations, Assmang Black Rock, on Gloria 266, North of Hotazel, Northern Cape.*

The site of bridge across the Gamagara River is 5 km NW of Hotazel. Fourteen (14) Stone Age sites were recorded. The railway bridge across the Gamagara River was considered of historic significance (page 15).

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. 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).

Mlilo, T. & F Bandama. 2016 *Phase 1 Archaeological Impact Assessment Report for Proposed John Taole Gaetsewe School and Hostels on Portion 0 of the Farm Motiton 509 HM in Dithakong, Joe Morolong Local Municipality, Northern Cape Province*

The proposed development was located in Dithakong Village about 100 km to the NE of Mamatwan. Dithakong has an eventful history as a 19th century village with stone walls. It was the theatre of fighting during the Difaqane and the war of resistance to colonial occupation. No archaeological or historical relics were found during the survey, although Stone Age relics had been reported in the vicinity (page 24).

PGS. 2018. *Proposed Waste Rock Dump Project at Tshipi Borwa Mine, near Hotazel, Northern Cape Province.*

The proposed infrastructural development was located on the Farm Mamatwan 331 and Moab 700. This is an adjacent property situated on the south side. No archaeological or historical relics were found within the footprint of the proposed development (page v).

Kusel, U. 2018. *East Manganese: Phase 1 Heritage Impact Assessment on the farm East 270 (Portion 1 & Re) within the John Taolo Gaetsewe District Municipality, Northern Cape.* The heritage study was undertaken in the vicinity of Hotazel. Stone tools were found in the vicinity of the Ga-Mogara River (a tributary of the Matlhwaring, the latter flows through the property of the present study). The lithics represented all three periods of the Stone Age with a few cutting tools typical of the Early Stone Age (ESA). A majority of lithics such as blades, a knife (exhibiting secondary trimming or retouch), and triangular flakes are typical of the Middle Stone Age (pp. 22-23).

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.

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	Nguni / Sotho/Venda people	Iron Age Farmers	Mfecane / Difaqane
(iii) Colonial period	19 th Century	European settlers / farmers / missionaries/ industrialisation	Buildings, Missions, Mines, metals, glass, ceramics

4.2. Appearance of Hominids

Hominid or proto-humans appeared in South Africa more than 3 million years ago. These were primate species which are the immediate ancestors of man. Hominid sites and their fossil remains are largely confined to dolomite caves on the highveld in Gauteng, Limpopo and Northwest Provinces.¹

To my knowledge the nearest hominid fossil site is at Taung near Vryburg (180 km to the east). This site is inscribed on the UNESCO World Heritage Site in a serial nomination with the Sterkfontein (Krugersdorp) and Makapans Valley (Mokopane). The preservation of hominid may be a function of geology and in the South African context these are almost always found in association with limestone deposits.

4.3. The Stone Age

The Stone Age dates back more than 1 million years and is seen as the beginning of more definitive features of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages. Stone and bone implements manifest the technology of the time and fall into distinct typologies indicating chronological development. Material evidence of human activities has been found in caves, rock-shelters and riverside sites, and very rarely seen in open country. The Late Stone Age is also associated with the execution of paintings mostly in rock shelters and caves.

4.3.1. The Early Stone Age [1.4 million – 100 000 yrs BP]

¹ Deacon, J. and N. Lancaster. 1986. *Later Quaternary Palaeo-environments of Southern Africa*. Oxford: Oxford University Press.

The Early Stone Age marks the earliest appearance of stone artefacts about 1.4 million years ago. The pear-shaped hand-axe, cleavers and cores are archetypal artefacts (Deacon & Deacon, 1999). These tools, which have been called Acheulean after a site in France, were probably used to cut up 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 butchering sites. The early hunters are classified as hominids or proto-human beings, meaning that they had not evolved to the present human form.

Significant occurrences of ESA artefacts around Kathu have been published. They represent intensive occupation and exploitation for stone tool manufacture (Walker, et al 2013, p8). At Wonderwerk Cave c. 60km to the east occupation horizons of the same period have produced evidence of fire.

4.3.2. Middle Stone Age (MSA) [200 000 yrs – 30 000 yrs BP]

The Middle Stone Age (MSA), which appeared 200 000 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. These were two remarkable steps in human cultural advancement.² The occupation stratigraphy at the Kathu Pan Sites and Kathu Townlands continued into the Middle Stone Age.

4.3.3. Later Stone Age (LSA)[40 000 yrs to ca 2000 yrs BP]

By the beginning of the LSA, humans had evolved to *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

² Deacon, J & H. Deacon. 1999. *Human Beginnings in South Africa*. Cape Town: David Philip.

rock art are definitely 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 tools of the Middle to Late Stone Age continuum are prevalent in the broader region stretching from the banks of the Vaal and Orange in the south to Kuruman and Hotazel in the north. Rock paintings have been documented at Inglesby Farm near Olifantshoek.³ A picture is gradually crystalizing of the extent of rock engravings (petroglyphs) on dolomite rocks and in some cases glaciated surfaces along the Vaal and Orange River Valleys. The nearest petroglyph site is on the farm Gamollio 72, c 45 km NW of Mamatwan (Matenga 2020 p4). There is evidence of ancient mining of specularite around Postmasburg worked by the Khoisan and Tswana from the Middle Stone Age through to the Iron Age period.⁴

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

The Iron Age culture superseded the Stone Age at around 2000 years ago. The introduction of farming, metal technology and pottery appear to happen at the same time. A sudden synchronized appearance in South Africa and in the whole region of Eastern and Southern Africa has been thought to equate a rapid movement of people which has been associated with speakers of Bantu languages.⁵ The migration theory is a subject of ongoing debate. A gradual “expansion” model is an alternative hypothesis. In the southern part of the farmers associated with the Iron Age may have coexisted and intermingled with Khoisan communities for a long time, the cultural encounters producing the hybrid communities and languages found in the region today.

³ Dreyer, Corbus. 2014. Ibid: 11

⁴ <http://www.southafrica.org.za/south-africa-travel-postmasburg.html>.

Beaumont, Peter. 2007. Phase 1 Heritage Impact Assessment Report on the Farm Portions Potentially Affected by a Proposed Direct Rail Link between the Sishen South Mine near Postmasburg and the Sishen - Saldanha line, Siyanda District Municipality, Northern Cape Province.

⁵ Phillipson, D. W. 2005. *African Archaeology*. Cambridge: University of Cambridge Press: 249.

Two migration streams converge 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). Although no sites in the western parts of the country have been explicitly linked with the Early Iron Age, one cannot rule out possible transhumant pastoralism / seasonal hunting camps in the western regions from early in the Iron Age.

Metal working was a new technology not possessed by the Stone Age hunters. As mixed farmers, iron-using peoples practiced agriculture and kept domestic animals such as cattle, sheep, goat and chicken amongst others. However, there is increasing evidence that sheep and cattle might have been in the area with the Khoikhoi much earlier than the introduction of metals.

4.4.1. The later Iron Age

The Later Iron Age is marked by the presence of extensive stonewalled settlements found in a large swathe of territory across Limpopo, Mpumalanga, Northwest, Northern and Free State Provinces. The stone wall remnants of the Tlhaping capital at Dithakong northeast of Kuruman and c. 100 km from Kathu are significant.⁶

4.5. Precolonial historical context

Kathu falls within the historical land of the Tswana, specifically the Tlhaping (east of Kuruman stretching to Vaal and Orange River valleys) and the Tlaro in the region of Kuruman, Kathu and Olifantshoek. The interface between the Later Iron Age with the Tswana is a grey area in terms of the existing state of research. For now we can postulate that they are descendants of LIA farming communities.

4.6. The Mfecane/Difaqane Upheavals

⁶ 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

In the 1820s Tshaka's unification wars on the eastern seaboard, what became Zululand, set in motion a series of migrations, north, south and west onto the South African highveld. The Ndwandwe under Matiwane wreaked havoc with several groups on the southern highveld. The Ndebele of Mzilikazi penetrated the central highveld causing displacement of Sotho and Tswana groups living there. As the security situation deteriorated, Sotho segments under Sebitoane and Mantatisi drifted out of the Plateau settling on the upper Zambezi flood plains; while Mzilikazi was also dislodged after bloody fights with the Afrikaners in 1837, taking with him assimilated elements of the Sotho and Tswana.⁷

The Battle of Dithakong in 1823 was one of the manifestations of the period of strife in this part of South Africa called Difaqane. It was fought between Mantatisi's Sotho migrants and the Batlhaping with the help of the Griqua. The battle documented by the Missionary Robert Moffat on 23 June 1823. At the behest of Rev Moffat the Griqua sent a relief force of 200 horsemen led by Rev Waterboer in Griquatown, and the Griqua leaders (Barend Barends from Danielskuil and Adam Kok II from Campbell).

4.7. The European Contact Period

4.7.1. Missionaries and explorers

At the beginning of the 19th century the German explorer Martin Henrich and Carl Lichtenstein travelled through the general vicinity of the study area. Crossing the Orange River near present-day Prieska, Lichtenstein's party visited present-day Daniëlskuil, and by June 1805 they were at Blinkklip (Postmasburg), famous for its specularite mines. The party trekked further north and reached the Kuruman River in the middle of Tswana communities.

The explorer William John Burchell travelled through the area in 1811 followed by John Campbell in 1813. During 1813 John Campbell of the London Missionary Society also visited the general vicinity of the study area. He passed through Postmasburg on his way to Kuruman (Fourie 2018: 28).

⁷ Muller, C. F. J. 1986. *Five Hundred Years: A History of South Africa*. 5th Edition. Pretoria: Rasmussen, R. K. 1977. *Mzilikazi of the Ndebele. African Historical Biographies*. London: Heinemann

The London Missionary Society established at Kuruman in 1817 under the tutelage of Robert Moffat. The spot was chosen for its abundant water supply issuing from a spring. The remains of the old mission are treasured heritage, the bicentenary of which was marked on 2017 (Figure 9). Moffat struck a cordial relationship with Mzilikazi in spite of the notorious reputation the Matabele had earned as marauders. The culmination of this friendship was the establishment years later of a mission station at Inyathi (near present day Bulawayo, Zimbabwe) in Mzilikazi's new territory north of the Limpopo River. Moffat's Mission at Kuruman was also the passage of the famous Scottish Doctor and explorer, David Livingstone, credited with the discovery of the Victoria Falls in 1855. The missionary episode is seen as a prelude to expansion of the colonial frontier from the Cape.

4.7.2. Colonial occupation and African resistance

One of the important triggers of European interest in the area was the discovery of diamonds at Kimberley in 1867. With increasing mining activity at Kimberley, the British annexed Griqualand West in 1871, its northern boundary set 30 km south of the present day Olifantshoek.

In 1878, there was a revolt against the British in Griqualand West which spread beyond into the Olifantshoek area. The British sent a force under Sir Charles Warren to put down the revolt. Dithakong was subjected to bombardment by Charles Warren.⁸

Between 1881 and 1883 the Tlalo and Tlhaping mounted resistance against Boer encroachment. In the ensuing fights the Boers prevailed leading to the establishment of the Republics of Stellaland and Goosen. These state systems were however short-lived as the British annexed the two Republics two years later and declared Bechuanaland (land of the Tswana) as a crown land. In 1895, Bechuanaland was incorporated into the Cape Colony.

4.7.3. The Langberg Rebellion 1896-7

Mounting anger among the Tlhaping and Tlalo over the confiscation of land, confinement to reserves and continued demands for land at the expense of the reserves led to rebellion. The

⁸ Dithakong. Found at: <https://en.wikipedia.org/wiki/Dithakong>

outbreak of the bovine disease and rinderpest in many parts of southern Africa provided the ignition. Demand by the British that the Tlalo put down their horses to contain the epidemic was interpreted as sabotage in preparation for war.⁹ Chief Toto Makgolokwe of the Tlalo led his people into war and made a good account by defeating British Forces in one of the encounters which lasted 8 months¹⁰ (Figure 6). British war graves on a farm west of Olifantshoek are a tourist attraction. The farms Langkloof, Inglesby, Lukin, Gamayana, Pudahush, Toto, Luka and Hopkins west of Olifantshoek are named after major role players in the Langberg Rebellion.

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 6: Toto, leader of the Tlalo (Fourie, 2017: 34).

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

5. FINDINGS OF THE DESKTOP ASSESSMENT

5.1. General observations

There is an established presence of Stone Age material in the broader area occurring as scattered distributions of artefacts, sometimes localised along the edges of streams and less likely on the sand-covered plains.

Other heritage resources that might occur in the broader area are:

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

¹⁰ http://en.wikipedia.org/wiki/Toto_Makgolokwe

- Rock engravings (petroglyphs) dating from the Middle Stone Age to Later Stone Age periods.
- Rock Paintings from the Middle Stone Age to the Later Stone Age periods.
- Buildings and objects associated with modern commercial farming from the 19th century.
- Graves, burial grounds and human bones.

The Table below provides a summary of the probability of occurrence of different typologies of heritage and a confidence rating of the predictions. The ranking system relates to the national grading of heritage sites (adapted from Guidelines for Involving Heritage Specialists in EIA processes by Winter S and & N. Baumann (2005, p19). The probability of occurrence of different grades of sites confirms the view that no finds that may occur in the study area (except for graves and rock engravings) are likely to warrant further action apart from documentation. During the exploration phase monitoring will be undertaken using a Chance Finds Procedure.

Table 2: Probability of occurrence of different typologies of heritage resources

GRADE	RANKING	SIGNIFICANCE	PROBABILITY OF OCCURRENCE	CONFIDENCE RATING
1a	National	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e., formally declared or potential Grade 1, 2 or 3A heritage resources,	0%	High
1b	Burial grounds	Graves are sacred and their treatment is a sensitive issue.	30%	High
2	Provincial	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e., formally declared or potential 2 heritage resources	0%	High
3A	Local	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e., formally declared or potential Grade 3A heritage resources	10%	Medium
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e., potential Grade 3B heritage resources	10%	High
3C	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e., potential Grade 3C heritage resources	75%	High

5.2. 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

No ground survey was undertaken.

(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

Sites that may be found during the explorations and are deemed to be significant will be curated in accordance with the procedures in the Heritage Chance Finds Procedure.

(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

The target mineral, iron and manganese, are in high demand of minerals in the country and abroad, especially in China. The country needs such impetus for economic growth to solve growing unemployment. Mining is labour intensive. General improvement in the quality of livelihoods in local communities and the country at large is expected. There is growing expectation that the mining industry will mitigate the vagaries of climate change – characterised by frequent droughts which may have a lasting impact on of the karoo ecosystem.

(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

The Environmental Specialist is dealing with stakeholder issues.

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

A Chance Finds Procedure will be used for the treatment of any sites or objects found during exploration and when actual mining commences.

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

In accordance with the CPF in the event of the discovery of heritage resources deemed of significance during exploration or mining, the Provincial Heritage Resources Authority or SAHRA will be informed and an archaeologist or heritage expert called to attend.

5.3. 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	Prospecting for minerals (test pits, drilling); Mining Phase
Extent of Impact	Test pits, excavations and ground clearing can result in damage and destruction of archaeological resources above and below the surface.
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	Medium.
Mitigation measures	If archaeological or other heritage relics deemed of high significance are found during the exploration 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.

5.4. Chance Finds Procedure (CPF)

An Archaeological and Heritage Chance Find Procedure (CPF) annexed to the report will be applied as a manual for the protection of heritage resources which may occur on the property when prospecting commences.

6. CONCLUSION AND RECOMMENDATIONS

In light of the findings of the desk assessment, the prospecting right application may be approved. The study is mindful that some important discoveries may be made during prospecting. If this happens operations 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. REFERENCES

- Beaumont, Peter. 2007.** Phase 1 Heritage Impact Assessment Report on the Farm Portions Potentially Affected by a Proposed Direct Rail Link between the Sishen South Mine near Postmasburg and the Sishen - Saldanha line, Siyanda District Municipality, Northern Cape Province. McGregor Museum.
- 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 Province. Cultmatrix.
- 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
- Engelbrecht, J and Fivaz, H. 2018.** Phase 1 HIA report on Farm 387 Portion 18 Groblershoop, Northern Cape: Holiday Resort Development on Portion 18 of Farm 387, Gordon Rd, Eastern bank of the Orange River, approximately 1.7km north of Goblershoop, Z.F. Mgcawu District Municipality, Northern Cape.
- Government of South Africa. 1999.** The National Heritage Resource Act (25 of 1999).
- Huffman, T. N. 2007.** A Handbook of the Iron Age. Cape Town: UKZN Press
- Matenga, E. 2020.** Phase I heritage impact assessment (including palaeontological desk assessment) in terms of Section 38 of the National Heritage Resources Act No 25/1999 for the proposed prospecting and mining right on the Farms Titanic 773 and Gasesa 272 near Kuruman, Northern Cape Province
- Matenga, E. 2020.** Phase 1 Heritage Impact Assessment Requested in Terms of Section 38 of the National Heritage Resources Act No 25/1999 for the Proposed Prospecting and Mining Right on the Farm Gamolilo 72 near Kuruman, Northern Cape Province.
- Matenga, E. 2021.** Phase I Heritage Impact Assessment & Palaeontological Desk Assessment for a Mine Prospecting Application on the Farms Gamahuli, Malley & La Rochelle near Olifantshoek, under the Gamagara Local Municipality, Northern Cape Province.

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.

Matenga, E. 2023. Phase 1 Heritage Impact Assessment & Palaeontological Assessment (Desktop) for a Mine Prospecting Application on the Farm Perth 343 near Hotazel in the Joe Morolong Local Municipality, Northern Cape.

Mlilo, T. & F Bandama. 2016 Phase 1 Archaeological Impact Assessment Report for Proposed John Taole Gaetsewe School and Hostels on Portion 0 of the Farm Motiton 509 HM in Dithakong, Joe Morolong Local Municipality, Northern Cape Province

Mlilo, T. 2021. Phase 1 Archaeological and Heritage Impact Assessment Report for the Proposed Prospecting of Manganese Ore, on Portion 2 of Farm East 270 in Joe Morolong Local Municipality, Northern Cape Province

Pelser, A J. and A C Vollenhoven. 2011. A report on a Heritage Impact Assessment (HIA) for a Proposed New Rail Crossing over the Gamagara River for the Gloria Mine Operations, Assmang Black Rock, on Gloria 266, North of Hotazel, Northern Cape. **PGS. 2018.** *Proposed Waste Rock Dump Project at Tshipi Borwa Mine, near Hotazel, Northern Cape Province.*

Phillipson, D. W. 2005. African Archaeology. Cambridge: University of Cambridge Press.

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.

Walker, S J H., M. Chazan & D. Morris 2013. Kathu Pan: Location and Significance: A report requested by SAHRA for the purpose of nomination Found at:

https://www.academia.edu/7773969/Kathu_Pan_Location_and_Significance_A_report_requested_by_SAHRA_for_the_purpose_of_nomination

Walker, S J H., M. Chazan & D. Morris 2014. Kathu Townlands: A High Density Earlier Stone Age Locality in the Interior of South Africa Found at:

https://www.researchgate.net/publication/264203935_Kathu_Townlands_A_High_Density_Earlier_Stone_Age_Locality_in_the_Interior_of_South_Africa

Legislation and Policies

National Heritage Resources Act (No 25: 1999)

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

Websites

Dithakong. Found at: <https://en.wikipedia.org/wiki/Dithakong>

http://en.wikipedia.org/wiki/Toto_Makgolokwe, researched August 2015.

<http://www.southafrica.org.za/south-africa-travel-postmasburg.html>. Researched August 2015.

GLOSSARY

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

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, and 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”.¹¹

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.

Historic material: means remains resulting from human activities, which are younger than 100 years, and 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.

¹¹ 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.

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 societies 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.

DETAILS OF SPECIALIST

(i) Personal details

Surname : Matenga
First name : Edward
Position : Director & Principal Researcher, (AHSA) Archaeological & Heritage Services Africa (Pty) Ltd, Centurion, Pretoria
Cell : 073 981 0637
E-mail : e.matenga598@gmail.com

(ii) Academic qualifications

2009 – 2011: PhD in Archaeology & Heritage (Uppsala University, Sweden) with a published Thesis
2002: Certificate in the Integrated Conservation of Territories and Landscapes of Heritage Value (ICCROM, Rome)
1990 - 1993: MPhil in Archaeology (Uppsala University, Sweden) with a published Thesis

(iii) Professional experience

2016 – present. Director & Principal Researcher, AHSA Archaeological and Heritage Services Africa (Pty) Ltd
2005 – 2016: Heritage Management Consultant (associateship with various specialists), South Africa
1997-2004: Director of Great Zimbabwe World Heritage Site
1994-1997: Senior Curator / Conservator, Great Zimbabwe World Heritage Site
1988-1993: Curator of Archaeology, Museum of Human Sciences, Harare

(iv) Membership of professional bodies/associations

ASAPA – Association of Southern African Professional Archaeologists
ICOMOS – International Council of Monuments and Sites
WAC – World Archaeological Congress

(v) Heritage Impact Assessments & international experience

Edward Matenga has undertaken more than 150 heritage impact assessments and written as many fieldwork-based reports. He has a footprint in the Northern Cape and Limpopo Provinces. Matenga has also been involved in the preparation of Heritage Management Plans otherwise known as

Conservation Management Plans for heritage sites. He has undertaken exhumations and relocations of graves and has gained considerable experience in handling community issues relating to the treatment of human remains. Over the last two decades UNESCO and its affiliated bodies (ICOMOS and ICCROM) sent Matenga on World Heritage advisory missions to Cameroon (2002), Kenya (2006), Mauritius (2007), Ghana (2008) and Ethiopia (2010).