



(AHSA) Archaeological and Heritage Services Africa (Pty) Ltd

Reg. No. 2016/281687/07

**PHASE I HERITAGE IMPACT ASSESSMENT REQUESTED IN TERMS OF
SECTION 38 OF THE NATIONAL HERITAGE RESOURCES ACT NO
25/1999 FOR A MINING RIGHT ON VAALBOS ISLAND ON THE VAAL
RIVER NEAR LONGLANDS, BARKLY WEST DISTRICT, NORTHERN
CAPE PROVINCE**

Prepared by

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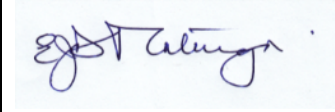
(MPhil, Archaeology; PhD Archaeology & Heritage, Uppsala/Sweden)

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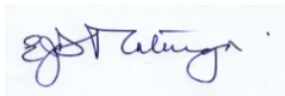
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DECLARATION OF INDEPENDENCE

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 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.



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ABBREVIATIONS

EIA	Environmental Impact Assessment
EIA	Early Iron Age
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

EXECUTIVE SUMMARY

This Heritage Impact Assessment (HIA) report has been prepared in order to secure environmental a Mining Right on Vaalbos Island on the Vaal River near Longlands, Barkly West District, Northern Cape Province. The area is 5ha in extent. Heritage Impact Assessments are prescribed under Section 38 of the National Heritage Resources Act (No 25/1999). The aim of heritage Impact studies is to evaluate the impact a proposed development or site alteration will have on the cultural heritage resources and to recommend an overall approach to the conservation of the resources. An HIA is based on an understanding of heritage and its significance, and if heritage is found in the area of the proposed development mitigation options are considered and recommendations made on a conservation strategy that best conserves the resource(s) within the context of the proposed development.

The findings of the survey are summarised as follows:

The Stone Age

Suitability of the island for settlement in particular during the Stone Age period has been postulated. During the rainy season the island would have been “marooned” as the southern channel filled up. As water receded afterwards the southern channel dried up occasionally retaining isolated pools. On the basis of this seasonal pattern in the flow of the river we can possibly model settlement behaviour in prehistoric times. It was likely that hunter-gatherers settled on the island more or less continuously during the dry season fishing in the river, and they would vacate the place in the wet season. However any such evidence of settlement would have been washed away over time. One stone implement found during the survey (Site 1), is important confirmation of human activity on the island during the MSA/LSA. This implement has a polished surface which is evidence of long-term post-use exposure to water action possibly.

There is an extensive deposit of water-washed (polished) pebbles of various sizes. Certainly some of these stones could have been used for some purpose in ancient times, but the deposit seems entirely to be natural as a result of water action.

Mining heritage

From the late 19th century miners extracted alluvial diamonds, and in order to work during the rainy season they built walls (or artificial dykes) to channel water away from areas they were working. They also constructed stonewall retained ramps for placement of mechanical excavators (Sites 2, 5). It has been recommended that the platform revetment walls be conserved as a footprint of early alluvial diamond mining.

Ranking of Findings

	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.	0
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. Footprint of early modern mining. These may be protected at the recommendations of a heritage expert.	2
3	Medium B	Sites exhibiting archaeological and historical characteristics of the area, but do not warrant further action after they have been documented.	1
4	Low	Heritage sites which have been recorded, but considered of minor importance relative to the proposed development.	2
		TOTAL	5

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 by opencast methods.
Nature of Impact	Negative, both direct & indirect impacts.

Extent of Impact	Test pits, drilling and opencast excavation have potential to damage heritage resources above and below the surface not seen during the survey.
Duration of Impact	Any accidental destruction of surface or subsurface relics is not reversible, but can be mitigated.
Intensity	Uncertain.
Probability of occurrence	Medium.
Confidence of assessment	High.
Level of significance of impacts before mitigation	High.
Mitigation measures	Protect one of the platform revetment walls.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

Recommendations and conclusions

The proposed mining can go ahead subject to the precautions stated above taken. In the event of discovery of other heritage resources in future phases of the project, the Provincial Heritage Resources Authority or SAHRA must be alerted immediately and an archaeologist or heritage expert called to attend.

1. INTRODUCTION

This Heritage Impact Assessment (HIA) report has been prepared on behalf of Emmanuel Diamonds (Pty) Ltd in support of an application for a Mining Right on Vaalbos Island on the Vaal River near Longlands, Barkly West District, in the Northern Cape Province. The area is 5ha in extent. The Client, Mr Patrick Mason, accompanied me to the property on 25 April 2017 and I carried out a ground survey for possible occurrence of archaeological and historical material.

The report is in compliance with Section 38 of the National Heritage Resources Act (No 25 of 1999) which requires that mitigation measures be considered where a proposed development is likely to result in the disturbance or destruction of heritage resources.

1.1. Nature of development and expected impacts

The applicant intends to mine alluvial diamonds in the superficial gravels (placers) on a portion of Vaalbos Island. These may be found on channels and detritus on the island. The planned mining technique is opencast block mining process with oversize material from the plant being used as backfill material prior to final rehabilitation. Excavations may extend to the river sides. Where there are fillings of potholes digging may reach the river bedrock. Such operations may result in the disturbance or destruction of heritage resources where they exist. For this reason a HIA is conducted so as to prepare a heritage impact statement which presents the palaeontological resources present and or what is likely to occur at the site.

1.2. Location and physical setting

The property forms a northern portion of an Island on the Vaal River 20km northwest of Barkly West and 8.5km upstream of its confluence with the Harts River (Lat: 28°27'32.70"S, Long: 24°20'18.50"E). The locality is called Longlands, a village located on the northern bank of the Vaal River 18km west of Barkly West. The key geomorphological feature is the Vaal River itself (known in seSotho as 'Lekwa'). This perennial river meanders across the semi-arid southern plains from its sources on the western foot of the Drakensberg Mountains, only 240km from the Indian Ocean. But it follows a course west some 1 120km to its confluence with the Orange River, which continues another 1 350km to the Atlantic Ocean. The river has been a strategic lifeline

for communities living in these semi-arid parts of the highveld from Stone Age times and it continues to hold that vital importance as a precious source of water (Figs 1-3).

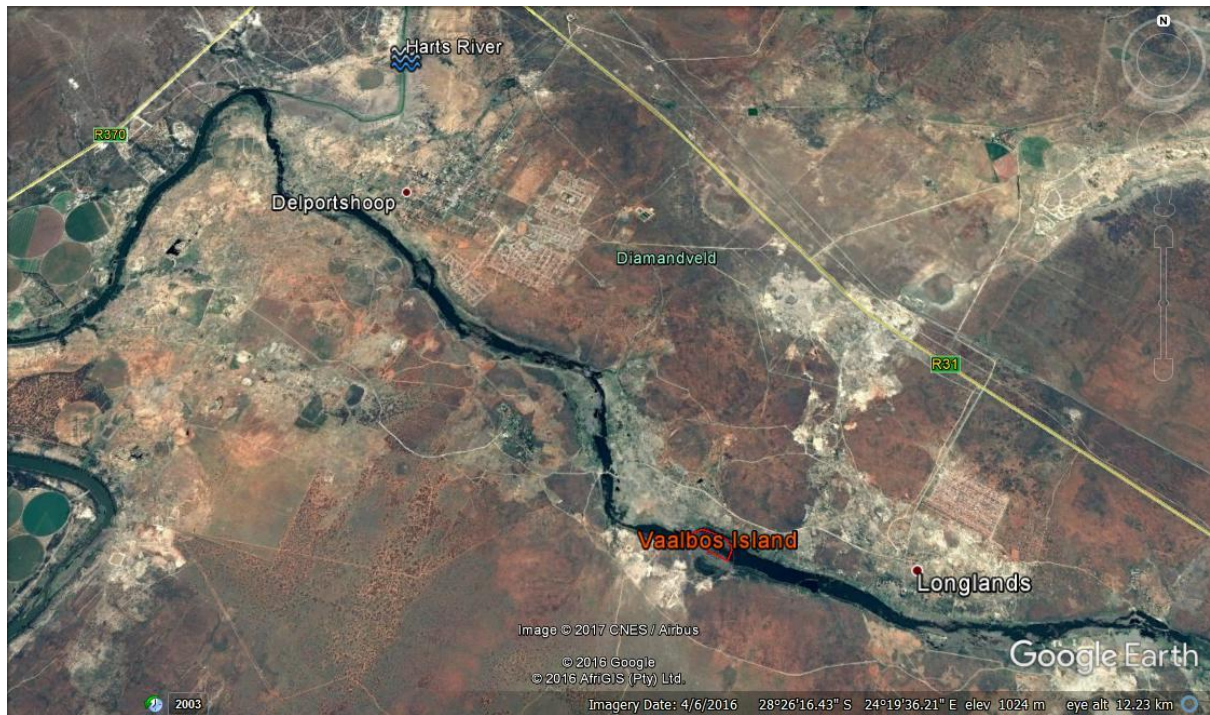


Fig 1. Google-Earth map shows the location of Vaalbos Island on the Vaal River.



Fig 2. Close-up Google-Earth view of Vaalbos Island shows the boundaries of the surveyed area.

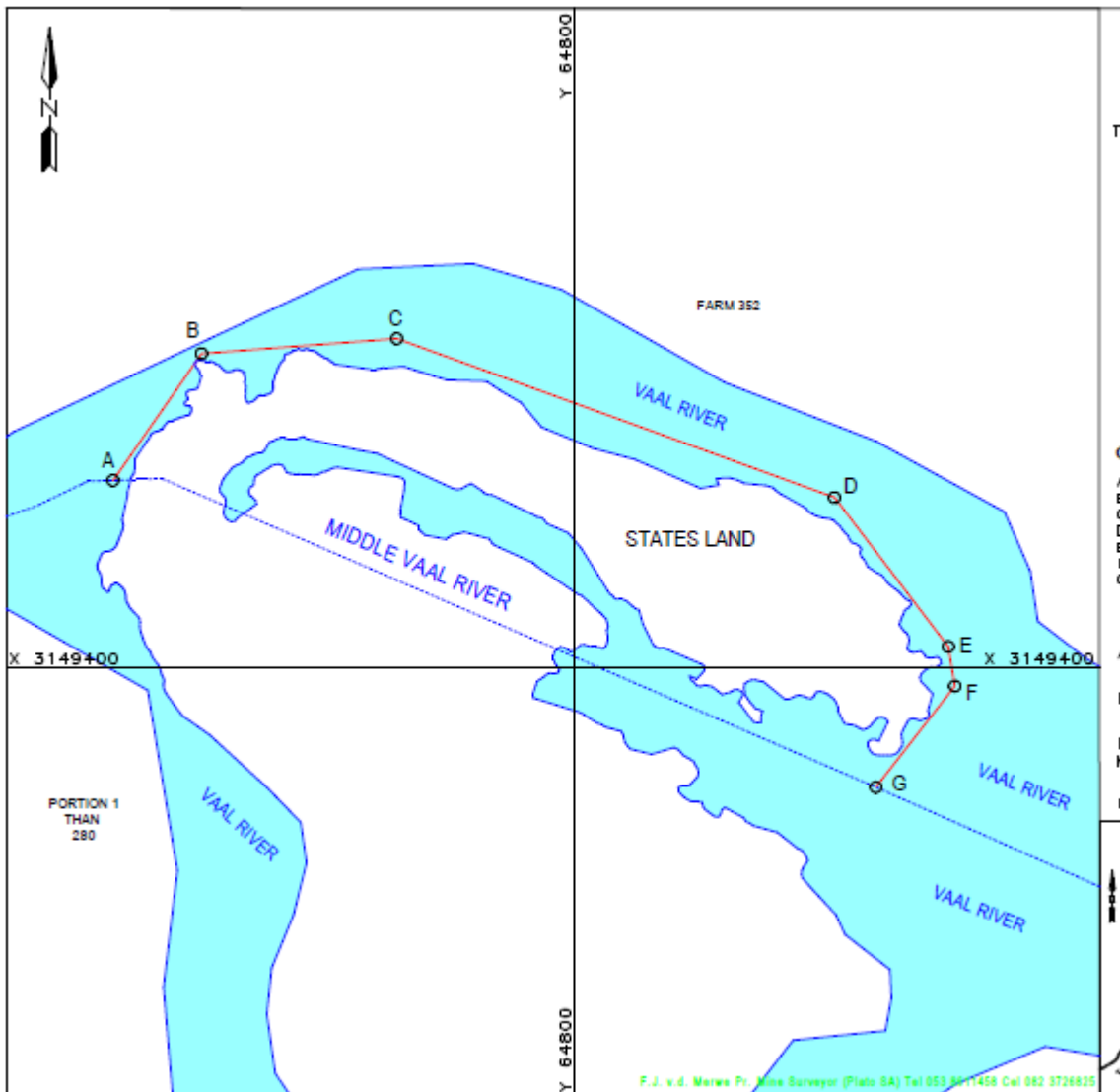


Fig 3. Map of the property (courtesy of Emmanuel Diamonds Pty Ltd).

The property forms a northern half portion of the island. The seasonal behaviour of the river flow in prehistoric times may be difficult to extrapolate now that the river has been dammed in several places upstream and water also diverted to these reservoirs from other basins in the Drakensberg and Maluti Mountains (Lesotho). But the general pattern would have been that water level in the river rose during the rainy season, then the high ground (the island) was marooned; it recedes afterwards at which time the southern channel dries up occasionally retaining isolated pools. In a good season the water would follow several erosion channels over the island (Fig 4). The ground is strewn with water-washed polished pebbles of various sizes (Fig 5). The Island

supports a vibrant colony of trees in particular the evergreen *Searsia ciliata* (common name Sour Karee) (Fig 6).



Fig 4. Seasonal water channels across the Island.



Fig 5. Pebbles shaped by the action of the water.



Fig 6. *Searsia ciliata* (common name Sour Karee) on the sides of a channel across the island.

2. LEGAL FRAMEWORK

This heritage impact assessment fulfils a public responsibility to safeguard heritage resources while accommodating development projects that are likely to impact badly on the heritage. This obligation has been legislated and Sections 34, 35, 36 and 38 of the National Heritage Resources Act (No 25 of 1999) form the context in which this HIA report has been prepared.

2.1. Section 38 of NHRA: Heritage Impact Assessments

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

38. (1) *Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—*

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50 m in length;

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

*(i) **exceeding 5 000 m² in extent**¹; or*

(ii) involving three or more existing erven or subdivisions thereof; or

¹ The areal extent of the proposed development has triggered the HIA.

(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

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

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

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

2.2. Protection of buildings and structures older than 60 years

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

(1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

2.3. Protection of Archaeological Sites

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

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

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

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

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

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

2.4. Graves and burial grounds

Section 36 of the NHRA gives priority for the protection of Graves and Burial Grounds of victims of conflict and graves and burial grounds more than 60 years old. Within this frame cautious approaches are considered including managed exhumations and re-interment to pave way for development:

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

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

3. METHODOLOGY AND THEORETICAL APPROACHES

3.1. Literature survey

A review of all available relevant literature included reports of previous HIAs conducted in the broader area, historical books, and project planning documents. A lot of material was researched on internet portals, in particular most of the HIA reports that are referred to in this report.

3.2. Fieldwork

The ground survey was conducted on foot. The findings were recorded in templates that form a Catalogue which include photographs. A spreadsheet table provides a summary of the attributes of the sites.

3.3. Significance Ranking

The sites have been ranked to show potential risks and appropriate protection measures which must be taken:

	SIGNIFICANCE	RANKING
1	National and Provincial heritage sites (Section 7 of NHRA). All burials including those protected under Section 36 of NHRA. They must be protected.	High
2	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. Significant footprints of early modern mining. These may be protected at the recommendations of a heritage expert.	Medium A
3	Sites exhibiting archaeological and historical characteristics of the area, but do not warrant further action after they have been documented.	Medium B
4	Heritage sites which have been recorded and are deemed of minor importance.	Low

4. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

4.1. Appearance of hominids

Hominids were proto-humans which appeared in South Africa more than 3 million years ago. The hominid site nearest to the study area is Taung near Vryburg (105km to the northeast). This is a UNESCO World Heritage Site proclaimed together with the Sterkfontein Caves (Krugersdorp) and Makapans Valley (Mokopane) in a serial nomination. No hominid sites have been reported along the Vaal River.

4.2. The Early Stone Age

4.2.1. 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 beginning of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages. These early people made stone and bone implements. Material evidence is found in caves, rock-shelters and on river sides and edges of streams, and very rarely seen in open country.² Such tools bore a consistent shape such as the pear-shaped handaxe, cleavers and core tools (Deacon & Deacon, 1999). These tool

² <http://archaeology.about/od/bterms/g/bordercave.htm>

industries have been called Oldowan and Acheulian and were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus. Acheulian 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 Province has been constructed from many heritage impact assessments that have been conducted in recent years. Early (ESA) and Middle Stone Age (MSA) lithics occur over most of area with a more recent find of Later Stone Age (LSA) occupations.³ The Wonderwerk Cave has become a benchmark for the characterisation of the Stone Age. Excavations reveal a long sequence of occupation spanning the Early (ESA), Middle (MSA) and Later Stone Ages (Humphreys & Thackeray 1983).

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

The Middle Stone Age (MSA), which appeared 250 000 years ago, is marked by the introduction of a new tool kit which included prepared cores, parallel-sided blades and triangular points hafted to make spears. By then humans had become skilful hunters, especially of large grazers such as wildebeest, hartebeest and eland. It is also believed that by then, humans had evolved significantly to become anatomically modern. Caves were used for shelter suggesting permanent or semi-permanent settlement. Furthermore there is archaeological evidence from some of the caves indicating that people had mastered the art of making fire.⁴ A number of field surveys have been carried out around Danielskuil 80km northwest of Longlands confirming significant hunter gatherer activity in the area from the MSA onwards.

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

By the beginning of the LSA, humans are classified as *Homo sapiens* which refer to the modern physical form and thinking capabilities. Several behavioural traits are exhibited, such as rock art and purposeful burials with ornaments, became a regular practice. LSA technology is characterised by microlithic scrapers and segments made

³ Schalkwyk, J. 2015, Heritage Scoping Assessment for the Proposed Perseus-Kronos 765KV Transmission Power Line and Substations Upgrade, Northern Cape and Free State Provinces, p6.

⁴ Deacon, J & H. Deacon. 1999. *Human Beginnings in South Africa*. Cape Town: David Philip.

from very fine-grained rock. Spear hunting continued, but LSA people also hunted small game with bows and poisoned arrows. Because of poor preservation, open sites become of less value compared to rock shelters. The practitioners of rock art are definitely the ancestors of the San and sites abound in the whole of Southern Africa. A number of rock engravings have been reported in the vicinity of Lime Acres and Danielskuil (ca80km northwest) including recent art ascribed to the Griquas and Khoikhoi.⁵ Wildebeest Kuil Rock Art Centre is a rock engraving site now with an interpretation centre on land owned by the !Xun and Khwe San situated c. 40km to the southeast from the study area along the R31 road from Kimberley to Barkly West. The site was first known to the public in modern times by the renowned 19th century researcher, George William Stow.⁶

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

The Iron Age culture supplanted the Stone Age more than 2000 years ago, associated with the introduction of farming and use of several metals and pottery. Iron Age communities associated with speakers of Bantu languages practiced agriculture and kept domestic animals such as cattle, sheep, goat and chicken amongst others. There is however increasing evidence that sheep and probably cattle as well might have moved into the area much earlier than the Iron Age.⁷

4.3.1. Early Iron Age

The Iron Age appears to have been a gradual spread or expansion of settlement of different groups of speakers of Bantu languages over a period that could have spanned more than 2 millennia. These communities, which were indigenous to the continent, may have brought with them domestic animals, crops, pottery and metal technology. However 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

⁵ Collins, S. 1973. Rock-engravings of the Danielskuil Townlands. *South African Archaeological Bulletin* 109-110: 49-57.; Eastwood, E.B. & Smith, B.W. 2005. Fingerprints of the Khoekhoen: geometric and handprinted rock art in the Central Limpopo Basin, southern Africa. *South African Archaeological Society Goodwin Series* 9: 63–76.

⁶ Wildebeest Kuil Rock Art Centre, at: <http://www.kimberley.co.za/city/wildebeest-kuil-rock-art-centre/> (Consulted 3 May 2017).

⁷ Evers, T. M. 1988. *Recognition of Groups in the Iron Age of Southern Africa*. Unpublished PhD Thesis, University of Witwatersrand. Huffman 2007. *A Handbook on the Iron Age*. Scottsville: UKZN Press

that transhumant pastoralism was practiced and seasonal hunting camps were established in the inhospitable western regions of the country.

4.3.2. 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

4.4. Historical context

The study area is historically home to various groups of Tswana stock - Tlokwa, Fokeng, Hlakwana and Phuting, Tlhaping, and Tlaro, certainly descending from the Iron Age and probably some with Stone Age roots. The early 19th century was a political turning point characterised by an increasingly uncertain security situation and internal displacements. The first of these episodes was the Difaqane characterised by inter-tribal raids. During the late 18th and early 19th centuries Griqua herders (people of Coloured stock from the southwest) settled in this area establishing a town called Klaarwater and subsequently renamed Griquatown. Meanwhile the initial wave of white hunters, traders and missionaries also entered the area. A little later the Afrikaners arrived bringing their stock as part of a mass exodus from the Cape called the Great Trek. The discovery of diamonds at Kimberley sparked the so called “rush”. The area which became known as Griqualand West was subsequently incorporated into the Cape Colony in the 1880s.⁹

4.5. Vaal River alluvial diamond diggings

The mining of alluvial diamonds in the Vaal River Valley started in 1869 carried out by a party of prospectors from Natal organised by the British Army. As they continued the search for the gemstones along the valley they struck good finds at Klipdrift (Barkly West). These finds sparked South Africa's first diamond rush. Following the news men began to flock from Britain and elsewhere to the new diggings. By April 1871 c. 5000

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 36.

⁹ 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.

men had swarmed the Vaal, Modder, and Orange Rivers. The alluvial stones from the region proved to be of high quality. The miners staked claims while the local Griqua chiefs and the Boer Republics of the Transvaal and Orange Free State also joined in the fray. Ownership rights were initially given to local chiefs and Boer Trekkers. But the diggers proclaimed the Klip Drift Republic on 30th July 1870 with Stafford Parker as its elected president. In the same year Sir Henry Barkly, governor of the Cape visited the diggings, which prompted the miners to rename Klipdrift Barkly West. In 1872, the British annexed the diamond fields and proclaimed Griqualand West as a crown state. It was subsequently incorporated into the Cape Colony in 1880. The majority of the prospectors abandoned the various Vaal River claims in the wake of richer finds at Kimberley in 1871. Mining of the river gravels has been going on sparking sporadic rushes over the last nearly one and half centuries¹⁰

The above forms the archaeological and historical context for the identification of heritage resources in the study area.

¹⁰ The Barkly West & Vaal River Diggings. At: <http://www.on-the-rand.co.uk/Diamond%20Grounds/Barkly%20West.htm>

5. FINDINGS OF THE SURVEY

5.1. The Stone Age

The island must have been suitable for settlement during the Stone Age period. As water level in the river rose during the rainy season, the high ground (the island) would have been “marooned”; as water receded afterwards, the southern channel dried up occasionally retaining isolated pools. In a good season the water would have followed several erosion channels over the island. Considering these seasonal variations in the flow of the river and accessibility of the island, we can possibly model settlement behaviour in prehistoric times. It was likely that hunter-gatherers settled on the island more or less continuously during the dry season fishing and they would retreat during the rainy season. However any evidence of settlement would have been washed away over time. One stone implement found (Site S1) is important confirmation of human activity on the island during the MSA/LSA (Fig 7). This tool has a polished surface, evidence of the post-use action of water possibly over many centuries.



Fig 7. A stone implements with evidence of long exposure to water action.

The ground is strewn with water-washed (polished) pebbles of various sizes. Certainly some of these stones could have been used for some purpose, but the spread seems entirely to be natural as a result of water action (Fig 8).



Fig 8. The extensive deposit of polished pebbles appears to be natural as result of the water action.

5.2. Mining heritage

During the late 19th century and early 20th century, miners extracted alluvial diamonds, and in order to continue with operations during the rainy season they built walls (or artificial dykes) to direct water flow. They also constructed stonewall retained ramps for placement of mechanical excavators (Sites 4 & 5) (Fig 9). A recommendation is made that one or both of the platform walls be preserved as a footprint of the early mining activities.



Fig 9. Platform revetment wall used for mining (Site 2).



Fig 10. Google-Earth map shows the location of heritage sites found during the survey.

NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING
STONE AGE SITES					
1	28°27'33.70"S	24°20'19.30"E	MSA/LSA	A tool found among the pebbles, signs of long term post-use exposure to water action.	Medium B
MINING HERITAGE					
2	28°27'32.70"S	24°20'18.50"E	Mining	Platform revetment wall.	Medium A
3	28°27'31.00"S	24°20'12.50"E	Mining	Pile of stones.	Low
4	28°27'30.60"	24°20'15.10"E	Mining	Pile of stones.	Low
5	28°27'31.60"S	24°20'15.70"E	Mining	Platform revetment wall.	Low

5.3. Ranking of findings

	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.	0
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. Significant footprint of early modern mining. These may be protected at the recommendations of a heritage expert.	2
3	Medium B	Sites exhibiting archaeological and historical characteristics of the area, but do not warrant further action after they have been documented.	1
4	Low	Heritage sites which have been recorded, but considered of minor value relative to the proposed development.	2
		TOTAL	5

5.4. Assessment of impacts using the Heritage Impact Assessment statutory framework

5.4.1. Section 3(3) of the NHRA

The following is an assessment of the value of the identified heritage resources in accordance with Section 3 of the NHRA which defines the National Estate.

(3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—

	STATUTORY REFERENCE	OBSERVATIONS
(a)	Its importance in the community, or pattern of South Africa's history	None
(b)	Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage	None
(c)	Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	A stone tool provides evidence of settlement / human activity on the island during the MSA/LSA.
(d)	Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	None
(e)	Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group	None
(f)	Its importance in demonstrating a high degree of creative or technical achievement at a particular period	None

(g)	Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Settlement / human activity on the island or banks of the Vaal River during the Stone Age. The development of mining and modernisation in South Africa.
(h)	Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa	None
(i)	Sites of significance relating to the history of slavery in South Africa.	None

6.3.2 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

Five sites (5) 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. However the sites have been ranked in four categories for the purpose to recommend appropriate mitigation in view of the proposed development.

(c) An assessment of the impact of the development on such heritage resources

The risk ranking is a definition of potential risks based on perceived value of the heritage and potential threats posed by the proposed development. One (1) site may be selected for protection.

(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 developing momentum in mining operations is stimulus for economic growth in the Northern Cape Province which can offset the constraints of its semi-arid conditions. Mining is labour intensive and there is real prospect of employment relief in view of the current high rate of employment in the country. General improvement in the quality of livelihoods in local communities and the country at large is expected.

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

N/A

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

Excavation, drilling, placement of machinery/plant must avoid the sensitive areas as identified in this survey.

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

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

5.5. 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)
Nature of Impact	Negative, both direct & indirect impacts.
Extent of Impact	Test pits, drilling and ground clearing has potential to damage 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	Protect one of the platform walls.


Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.


6. RECOMMENDATIONS AND CONCLUSIONS


The proposed mining can go ahead subject to the precautions stated above taken. In the event of discovery of other heritage resources in future phases of the project, the Provincial Heritage Resources Authority or SAHRA must be alerted immediately and an archaeologist or heritage expert called to attend.


7. CATALOGUE OF SITES

No	COORDINATES	PERIOD
S1	28°27'33.70"S, 24°20'19.30"E	MSA/LSA
		
		
DESCRIPTION: A tool found among the pebbles, signs of long term post-use exposure to water action.		
HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.		
MITIGATION -		

NO	COORDINATES	PERIOD
S2	28°27'32.70"S, 24°20'18.50"E	Early mining
		
<p>DESCRIPTION: Platform revetment wall.</p>		
<p>HERITAGE SIGNIFICANCE: Early alluvial diamonds mining.</p>		
<p>MITIGATION: Protect this site or Site 5 or both.</p>		

NO	COORDINATES	PERIOD
S3	28°27'31.00"S, 24°20'12.50"E	Early mining
		
<p>DESCRIPTION: Pile of stones.</p>		
<p>HERITAGE SIGNIFICANCE: Early alluvial diamonds mining.</p>		
<p>MITIGATION: -</p>		

NO	COORDINATES	PERIOD
S4	28°27'30.60"S, 24°20'15.10"E	Early mining
		
DESCRIPTION: Pile of stones.		
HERITAGE SIGNIFICANCE: Early alluvial diamonds mining.		
MITIGATION: -		

NO	COORDINATES	PERIOD
S5	28°27'31.60"S, 24°20'15.70"E	Early mining
		
DESCRIPTION: Platform revetment wall.		
HERITAGE SIGNIFICANCE: Early alluvial diamonds mining.		
MITIGATION: Protect this site or Site 2 or both.		

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Legislation

National Heritage Resources Act (No 25: 1999).

GLOSSARY

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

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

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

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

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

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

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

Early Stone Age: Predominantly the Acheulean hand axe industry complex dating to + 1Myr yrs – 250 000 yrs. before present.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Sherd: ceramic fragment.

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

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