

**PHASE I HERITAGE IMPACT ASSESSMENT (INCLUDING  
PALAEOLOGICAL DESKTOP ASSESSMENT) REQUESTED IN TERMS OF  
SECTION 38 (8) OF THE NATIONAL HERITAGE RESOURCES ACT NO 25/1999  
FOR THE PROPOSED MINING PERMIT APPLICATION ON A PORTION OF  
PORTION 5 (A PORTION OF PORTION 2 - WATERVAL) OF THE FARM  
BEZEMFONTEIN 213 IN THE MAGISTERIAL DISTRICT OF LAINGSBURG,  
WESTERN CAPE**

Prepared by

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Tuesday, 28 January 2020



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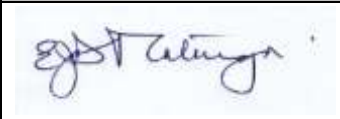
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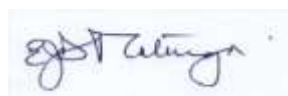
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FIELD WORK & REPORT	E. Matenga		26/01/2020

### DECLARATION OF INDEPENDENCE

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

### DISCLAIMER

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



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## EXECUTIVE SUMMARY

1. This document is a Heritage Impact Assessment (HIA) report which has been prepared at the behest of Blouberg Eiendomme (Pty) Ltd in support a mining permit application “a portion of portion 5 (a portion of portion 2 - Waterval) of the farm Bezemfontein 213 in extent 4.99 ha located in the Laingsburg District, Western Cape Province”. The target product is sand. A ground survey was conducted on 8 November 2019 for the identification and documentation of any archaeological and historical material that might occur on the property.
  
2. The following is a summary of the findings of the survey:
  
3. *The Stone Age*  
A lithic was found representing a Middle Stone Age Scraper (BZK06). The paucity of evidence for the Stone Age is likely due to the fact that the size of the area under investigation is relatively small at 4.99 ha.
  
4. *The Iron Age*  
No material dating to the Iron Age was found.
  
5. *Historic buildings and structures*  
One building was observed located outside the area of the proposed sand mining. It is a small isolated gabled farmhouse with roof of corrugated iron sheets. It has a gabled veranda set against it in the midsection facing north. This building may be significant as it exemplifies rural buildings of the modern commercial farming period. But it will not be affected as it lies outside the limits of the proposed development.
  
6. Early commercial farmers used dolerite monoliths as posts to erect fences around their properties and to divide them into paddocks. It is reported that barbed wire fencing was first used in South Africa at the end of the 19<sup>th</sup> century. Monoliths were observed in 6 places. Fiver of these (BZF01-BZF05) stand or lie in a line to suggest that they formed a section of early fencing. These lie outside the limits of the proposed sand mining and will therefore not be affected. One of the standing monoliths (BZF09) stand within the footprint of the

proposed mining. The relic is however considered of to be of low cultural significance to warrant protection *in situ*.

7. *Burials and burial grounds*

There were no graves or burial ground found.

8. *Aspects of cultural landscapes*

Cultural Landscapes are “cultural properties that represent the combined works of nature and of man” .... They are illustrative of 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 external and internal.”<sup>1</sup>

9. Elsewhere on the farm Bezemfontein there are characteristic elements of a Karoo commercial farming landscape such as the long boundary and partition stonewalls, farmsteads, orchards and irrigated fields. None of these elements will be affected by the proposed development.

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<sup>1</sup> Paragraph 47 of the Operational Guidelines for the Implementation of the World Heritage Convention (UNESCO 2016).

## 10. Inventory of heritage sites

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING	MITIGATION
BZF01	33°21'54.40"S	21°22'14.90"E	Modern	Sandy gravelly soil, ground dips gently SE to a stream Treeless, sparse grasses. Broken dolerite monolith propped into the ground inclined.	3C	Will not be affected
BZF02	33°21'54.59"S	21°22'13.63"E	Modern	Sandy gravelly soil, ground dips gently SE to a stream. Treeless, sparse grasses. Broken dolerite monoliths, stump propped into the ground	3C	Will not be affected.
BZF03	33°21'54.92"S	21°22'12.27"E	Modern	Open treeless, sparse grasses. Ground dips gently SE to a stream. Two fallen dolerite monoliths	3C	
BZF04	33°21'55.10"S	21°22'11.40"E	Modern	Open treeless, sparse grasses. Ground dips gently SE to a stream. Two fallen dolerite monoliths.	3C	Will not be affected
BZF05	33°21'55.30"S	21°22'10.20"E	Modern	Open treeless, sparse grass. Close to the base of a ridge. Standing monolith is an old fencing post	3C	Will not be affected
BZF06	33°22'2.10"S	21°22'10.30"E	MSA/LSA	Open, sandy, treeless, sparse grass, Swartberg mountains in the background. 1 Lithic, quartz scraper	3C	No further action required
BZF07	33°22'2.50"S	21°22'21.30"E	Modern	Sandy soils, sparse grass. A horseshoe setting of stands forms a low wall 30cm high. Purpose uncertain	3C	No further action required
BZF08	33°22'2.50"S	21°22'21.30"E	Modern	An isolated farmhouse on the foot of the Swartberg mountains. Gabled with a gabled veranda wing	3B	Will not be affected
BZF09	33°21'57.90"S	21°22'17.00"E	Modern	Open treeless, sparse grass. Swartberg mountains in the background. Standing monolith, 120cm tall. Old fencing post	3C	Low significance, can be disposed of

### *11. Recommendations and conclusions*

The mining application can be considered in light of the low cultural significance of material found. However it is a standard precaution that in the event of other heritage resources being discovered 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.

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## **ABBREVIATIONS**

EIA	Environmental Impact Assessment
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
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



## DEFINITIONS

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

**Artefact:** Any movable object that has been used modified or manufactured by humans.

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

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

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

**Cultural landscape:** a stretch of land that reflects “the combined works of nature and man” and demonstrates “the evolution of human society and settlement over time, under the influence of the physical constraints and / or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external”.<sup>2</sup>

**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 no longer in use; that include artefacts, human remains and artificial features and structures.

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<sup>2</sup> 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.

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

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

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

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

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

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

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

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

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

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

**Sherds:** ceramic fragments.

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

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

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

## **1. BACKGROUND INFORMATION OF THE PROJECT**

This document is a Heritage Impact Assessment (HIA) report which has been prepared at the behest of Blouberg Eiendomme (Pty) Ltd in support a mining permit application “a portion of portion 5 (a portion of portion 2 - Waterval) of the farm Bezemfontein 213 in extent 4.99 ha located in the Laingsburg District, Western Cape Province”. The target product is sand for which there are superficial deposits on the margins of a stream trending east-west. A ground survey was conducted on 8 November 2019 for the identification and documentation of any archaeological and historical material that might occur on the property. The report complies with Section 38(8) of the National Heritage Resources Act (No 25 of 1999) and mitigation measures recommended in this report will be considered as part of Environmental Impact Assessment.

## **2. A DESCRIPTION OF THE PROPERTY/AFFECTED ENVIRONMENT**

The farm Bezemfontein 213 is situated 16km northeast of Ladismith and 50 km southeast of Laingsbug in the Laingsburg Local Municipality, Western Cape Province (Figures 1-2). On a macro-scale this region is a great escarpment of broken topography rising 1100m from the sea facing the coastal towns of George and Mossel Bay. The Swartberg Mountain range formed by the Karoo sediments generally trend east-west form a southern backdrop to the property. The farm Bezemfontein is located in a trough hemmed by these mountains and low ridge to the north which provide suitably flat terrain for settlement. The main access road, R323, from Laingsburg trends south descending through the Rooinek Pass and crossing the Buffelsrivier and turns east following this relatively easier terrain bisecting the farm Bezemfontein. Four kilometres further east from the farm it swings south and crosses the Swartberg Mountains taking advantage of a natural ravine incised by the Seweweekspoortrivier. This section is called the Seweweekspoort Pass. The area is strikingly scenic with landscape views narrowed by the mountain ranges, the drainage ravines sculpted on the mountain sides and the narrow mountain passes called *poort* in Afrikaans. The site of the proposed mining 4.99 ha in extent forms the margins of a stream following the trough east to a confluence with the Seweweekspoortrivier. To the south a high mountain range in the Towerkop

Nature Reserve forms a backdrop while on the north side the R323 Rd is passes along the foot of a low ridge (Figures 2-5).

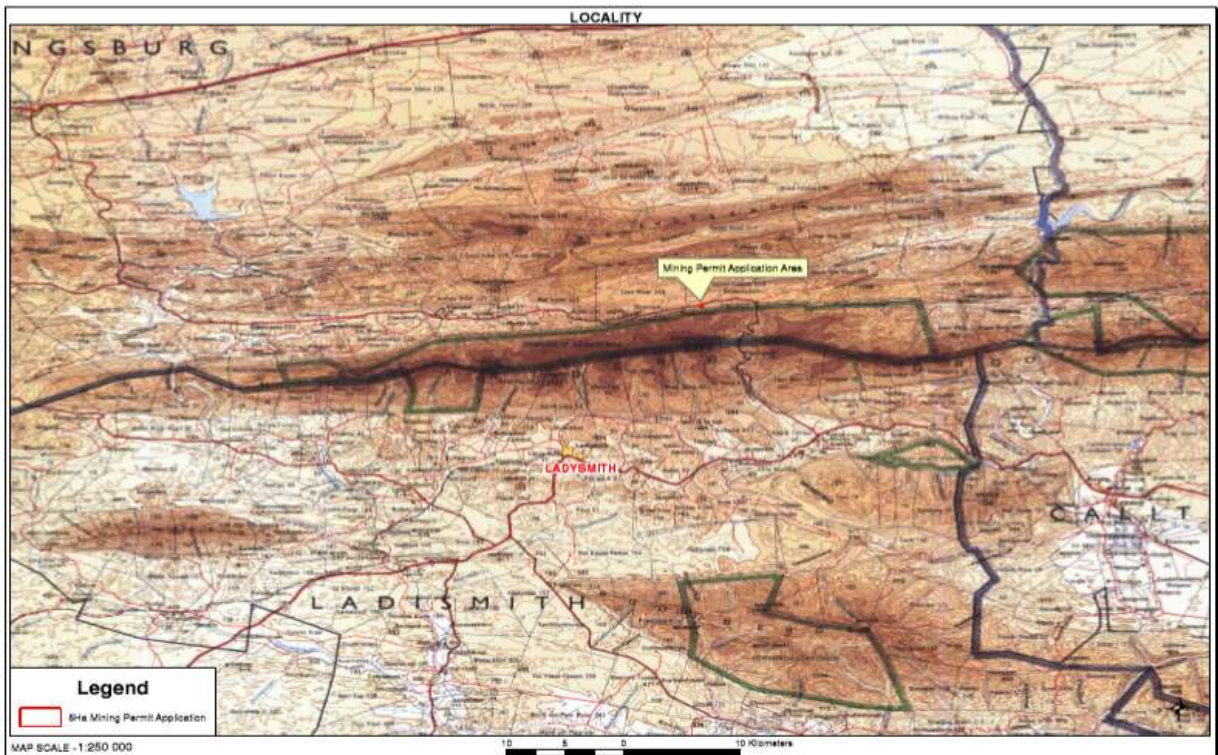


Figure 1. The locality of the proposed Mining Permit area is indicated with a blue block. The Property is near the top right hand corner of the map.



Figure 2: Locality map of the property in Google Earth.





Figure 3: View of the proposed sand quarry southeast towards the foot of the Swartberg Mountains.



Figure 4: Close view of the superficial sand and Swartberg Mountains in the background.



Figure 5: Site of the proposed quarry, view northeast shows the R323 Rd in the background.

### **3. DESCRIPTION OF METHODOLOGY**

#### **3.1. Literature Survey**

This report is informed by a literature survey encompassing geography, archaeology and history of the area. Significantly Heritage Impact Assessments which have been conducted in the broader area provide useful insights into the heritage potential of the area under study:

Schalkwyk, J. A. 2018. *The expansion of an existing borrow pit on the farm Tweedside 151 in the Laingsburg Local Municipality of Western Cape Province.*

The following observations are made: Stone Age tools, dating to the Middle Stone Age and Late Stone Age occurring as low-density scatters on the banks of the streams and rivers and on some outcrops and caves were known in the larger region. A few rock sites occur in small caves or shelters in the larger region; historic structures, inclusive of buildings, monuments and bridges, in towns and surroundings (Laingsburg and Matjiesfontein); they also occur on farms or alongside infrastructure facilities such as roads.

Orton, J. 2017. *Heritage Impact Assessment for proposed remedial works to the Seweweekspoort Pass, Laingsburg and Ladismith Magisterial districts, Western Cape*. HWC Case No.: 16091504AS1018E. SAHRA Case ID: 10422

This section of the road is 4 km east of the area of the present study. Only two Stone Age Sites were recorded. One site with rock paintings was known, while the second one site was faded with the figures undiagnostic. The low density of Stone Age material was attributed to the fact that the survey was confined to the margins of the modern road (pass) where past evidence is likely to have been obliterated. Quite expectedly, most of the sites recorded are historical structures associated with the construction of the pass in the 19<sup>th</sup> century and modern commercial farming. (Pages 11-21).

Aurecon South Africa (Undated). *Heritage Impact Assessment for the expansion of an existing borrow pit located along divisional Road 01721 c 9 km southwest of Klaarstroom in Prince Albert Municipality, submitted in terms of section 38(8) of the National Heritage Resources Act*. The site is 100 km east of the area of the present study. No archaeological and historical remains were found.

Tusenius, M. 2013. *Archaeological Impact assessment for **the proposed extension of a borrow pit, DR1725/0.6/0.2R (Vidamemoria Pit No. 148), on the outskirts of Prince Albert in the Central Karoo District, Western Cape***. The site is 60 km east of the area of the present study. A significant occurrence of artefacts of the Middle and Late Stone periods was observed, most of the tools and flakes derived from the nearby Matjiesfontein chert band suggesting that the area had been visited and used as a factory site over a long period of time (pages 2, 9).

### **3.2. Ground Survey**

A ground survey was conducted by an archaeologist and field assistant 8 November 2019. Data was collected by means of walking surveys. To a large extent the surveys were random, but locales seen as promising to yield material were also targeted.

### **3.3. Significance ranking of findings**

Heritage sites have been ranked to show potential risks relative to their cultural significance and the expected impact of the proposed development.

### *Ranking of Findings*

The ranking system has been adapted from Guidelines for involving Heritage Specialists in EIA processes by Winter S and & N. Baumann (2005: 19)

<b>GRADE</b>	<b>RANKING</b>	<b>SIGNIFICANCE</b>	<b>NO: SITES</b>
1	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	
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	
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	
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources	
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	
		<b>TOTAL</b>	

## **4. LEGAL FRAMEWORK**

### **3.1. The National Heritage Resources Act (25 of 1999)**

Thresholds of the impact of development which trigger a Heritage Impact Assessment are stated in Section 38 of the National Heritage Resources Act (No 25 1999):



Section 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, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*

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

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

**(i) exceeding 5 000m<sup>2</sup> 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 m<sup>2</sup> in extent; or*

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

Other Sections of the **National Heritage Resources Act** (No. 25 of 1999) NHRA of relevant application are:

Section 34 of the NHRA for provisional protection of all structures and features older than 60 years.

Section 35 (4) of the **NHRA** prohibits the destruction of archaeological, palaeontological and meteorite sites. A palaeontological desktop assessment is appended to this HIA report as one of the requirements to comply with this clause.

Section 36 of the **NHRA** gives priority for the protection of Graves and Burial Grounds graves and burial grounds more than 60 years old, and graves and burial ground of victims of conflict.

### **3.2. International principles and policies on graves**

Heritage management advocates respect of the sanctity of all graves regardless of their age wherever possible preservation *in situ*. The the **Vermillion Accord on Human Remains** adopted by the **World Archaeological Congress (WAC** at the

WAC Inter-Congress in South Dakota (USA) is a code of ethics which urges “*respect for the mortal remains of the dead shall be accorded to all, irrespective of origin, race, religion, nationality, custom and tradition.*”

### 3.3. The National Environmental Management Act (No 107/1998)

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.

### 3.4. The Burra Charter

The **Burra Charter, the Australia Charter for the Conservation of Places of Cultural Significance** contains generic principles and standards for the protection of heritage resources which have been adopted in heritage practice in South Africa.

## 3. HISTORY AND EVOLUTION OF THE SITE AND CONTEXT

The cultural sequence in South Africa forms a broad context for the identification of heritage resources.

### 3.1. Cultural Sequence Summary

PERIOD	EPOCH	ASSOCIATED CULTURAL GROUPS	TYPICAL MATERIAL EXPRESSIONS
Early Stone Age 2.5m – 250 000 YCE	Pleistocene	Early Hominids: <i>Australopithecines</i> <i>Homo habilis</i> <i>Homo erectus</i>	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First <i>Homo sapiens</i> species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	<i>Homo sapiens</i> including San people	Typically small to minute stone tools such as arrow heads, points and bladelets.

Early Iron Age / Early Farmer Period c300 – 900 AD (or earlier)	Holocene	Iron Age Farmers	Typically distinct ceramics, bead ware, iron objects, grinding stones.
Later Iron Age 900ADff	Holocene	Iron Age Farmers, emergence of complex state systems	Typically distinct ceramics, evidence of long distance trade and contacts
(ii) Mapungubwe (K2)	1350AD		Metals including gold, long distance exchanges
(ii) Historical period	Nguni / Sotho/Venda people	Iron Age Farmers	Mfecance / Difaqane
(iii) Colonial period	19 <sup>th</sup> Century	European settlers / farmers / missionaries/ industrialisation	Buildings, Missions, Mines, metals, glass, ceramics

### 3.2. Appearance of Hominids

The cultural sequence begins with the appearance of hominids, proto-humans which appeared in South Africa more than 3 million years ago. The three key hominids sites in South Africa have been inscribed on the UNESCO World Heritage list as a serial nomination, viz: Sterkfontein Caves (Krugersdorp), Makapans Valley (Mokopane) and Taung near Vryberg. These sites are located far from the area under study.

### 3.3. 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. Such tools bore a consistent shape such as the pear-shaped hand-axe, cleavers and core tools.<sup>3</sup> These tool 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. 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

<sup>3</sup> Deacon, H.J. & Deacon, J. 1999. Human Beginnings in South Africa: Uncovering the Secrets of the Stone Age. Cape Town: David Philip.

in the Western Cape Province has been constructed from many heritage impact assessments that have been conducted in recent years. Archaeological research in has focused strongly on rock shelters containing Stone Age occupation deposits. Early Stone Age occupations have generally been rare compared to later periods.

### **3.4. Middle Stone Age (MSA) [250 000 yrs – 30 000 yrs BP]**

The Middle Stone Age (MSA), appeared 250 000 years ago and is marked by the introduction of a new tool kit which included prepared cores, parallel-sided blades and triangular points hafted to make spears. By then humans had become skilful hunters, especially of large grazers such as wildebeest, hartebeest and eland. By humans had evolved significantly to become anatomically modern. Caves were used for shelter suggesting permanent or semi-permanent settlement. There is archaeological evidence from some of the caves indicating the making of fire.<sup>4</sup> Many rock shelters investigated in the Western Cape have yielded cultural deposits dating from the Middle Stone Age.

### **3.5. Later Stone Age (LSA)[40 000 yrs to ca2000 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 noticed, such as rock art and purposeful burials with ornaments, became a regular practice. LSA technology is characterised by microlithic scrapers and segments made from very fine-grained rock. Spear hunting continued, but LSA people also hunted small game with bows and poisoned arrows. Practitioners of rock art were ancestors of the San and sites abound in the whole of Southern Africa.

### **3.6. Early Iron Age**

The Iron Age was 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 indigenous to the continent 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.<sup>5</sup> Most Iron Age settlements

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<sup>4</sup> Deacon, J & H. Deacon. 1999. Human Beginnings in South Africa. Cape Town: David Philip.

<sup>5</sup> Phillipson, D. W. 2005. African Archaeology. Cambridge: University of Cambridge Press.

are concentrated in the eastern part of the country. The woodland zone was preferred for settlement, but there is strong possibility that transhumant pastoralism was practiced and seasonal hunting camps were established in the inhospitable western regions of the country. There is however increasing evidence that sheep and cattle might have moved into the southern part of the country much earlier than the Iron Age.<sup>6</sup>

### **3.7. Historical context**

The Seweweekspoort Pass would certainly have been used by local inhabitants to cross the Swartberg Mountain range although there are no records to attest to that. When the country was occupied by White Settlers the pass presented an opportunity for the construction of a gateway across the formidable mountain barrier. It was built in 1859-1862 and the fact that convict labour renders its history rich (Orton 2018). The engineer was none other Thomas Bain for which these passes became his trademark.

Commercial farmers occupied the area from the 1820s and in the wake of the Great Trek. The area continues to be dominated by dominated by farming activities today with many small stock farms present in the region (Orton 2018). A number of building in centres such as Zoar, Amalienstein and Ladismith pass a historic buildings of significance and reflect the history of modernisation of this part of the province. Zoar was founded in 1817, Ladismith in 1851 and Amalienstein in 1853.

Ladismith takes her name from Juana Maria de los Dolores de Leon became the 14-year old bride of Sir Henry George Wakelyn Smith in the early 1800s - thereafter known simply as 'Mrs Henry Smith' or Lady Smith.<sup>7</sup>

Zoar was originally run by the South African (Dutch Reformed) Missionary Society before being taken over by the Lutheran Berlin Missionary Society in 1837. The South African Missionary Society retook Zoar from 1856 until 1867 and then again from 1888

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<sup>6</sup> 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

<sup>7</sup> Ladismith, Karoo. Found a: <https://www.sa-venues.com/attractionswc/ladismith.php> Consulted November 2019.

with the Lutherans once more in charge during the intervening year. In 1853 the Berlin Missionary Society had founded Amalienstein as a Lutheran Mission (Orton 2018).

As mentioned above, Trekboers moved into the area from the late 18<sup>th</sup> century and established farms. The farm is owned by the Hunlun family. Charles Hanlon immigrated from Ireland to the Cape Colony in the 1800's. He married a Dutch speaking girl and they had 5 kids. The surname was spelt variously. In the Laingsburg Dutch Reformed Church Register from 1883 it was spelt Hanlon but since 1894 it became Hunlun. This portion of the farm Bezemfontein is dedicated to grazing with cattle and sheep being the principal livestock. Other portions are of the farm produce lucern, vegetable seeds and bulbs like onions and carrots. Early in September is time of shearing sheep for commercial wool.<sup>8</sup>

#### **4. IDENTIFICATION HERITAGE RESOURCES THAT WILL BE IMPACTED BY THE PROPOSED DEVELOPMENT**

##### **4.1. The Stone Age**

A lithic was found representing a Middle Stone Age Scraper (BZK06). The paucity of evidence for the Stone Age is likely due to the fact that the size of the area under investigation is relatively small at 4.99 ha.

##### **4.2. The Iron Age**

No material dating to the Iron Age was found.

##### **4.3. Historic buildings and structures**

One building was observed located outside the area of the proposed sand mining. It is a small isolated gabled farmhouse with roof of corrugated iron sheets. It has a gabled veranda set against it in the midsection facing north. This building may be significant as it exemplifies rural buildings of the modern commercial farming period. But it will not be affected as it lies outside the limits of the proposed development.

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<sup>8</sup> Seweweekspoort Guesthouse Found at: [http://www.seweweekspoortguestfarm.co.za/about\\_us.html](http://www.seweweekspoortguestfarm.co.za/about_us.html). Consulted November 2019.

Early commercial farmers used dolerite monoliths as posts to erect fences around their properties and to divide them into paddocks. It is reported that barbed wire fencing was first used in South Africa at the end of the 19<sup>th</sup> century. Monoliths were observed in 6 places. Five of these (BZF01-BZF05) stand or lie in a line to suggest that they formed a section of early fencing. These lie outside the limits of the proposed sand mining and will therefore not be affected. One of the standing monoliths (BZF09) stand within the footprint of the proposed mining. The relic is however considered of to be of low cultural significance to warrant protection *in situ*.

#### **4.4. Burials and Burial Grounds**

There were no graves or burial ground found.

#### **4.5. Aspects of cultural landscapes**

Cultural Landscapes are “cultural properties that represent the combined works of nature and of man” .... They are illustrative of 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 external and internal.”<sup>9</sup>

Elsewhere on the farm Bezemfontein there are characteristic elements of a Karoo commercial farming landscape such as the long boundary and partition stonewalls, farmsteads, orchards and irrigated fields. None of these elements will be affected by the proposed development (Figure 6).

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<sup>9</sup> Paragraph 47 of the Operational Guidelines for the Implementation of the World Heritage Convention (UNESCO 2016).



Figure 6: Cultural landscape elements such as stonewalls and green fields will not be affected by the proposed development.

## 5. MAPPING AND SPATIALISATION OF THE IDENTIFIED RESOURCES

The location of the sites are presented in the Google Earth Map below.

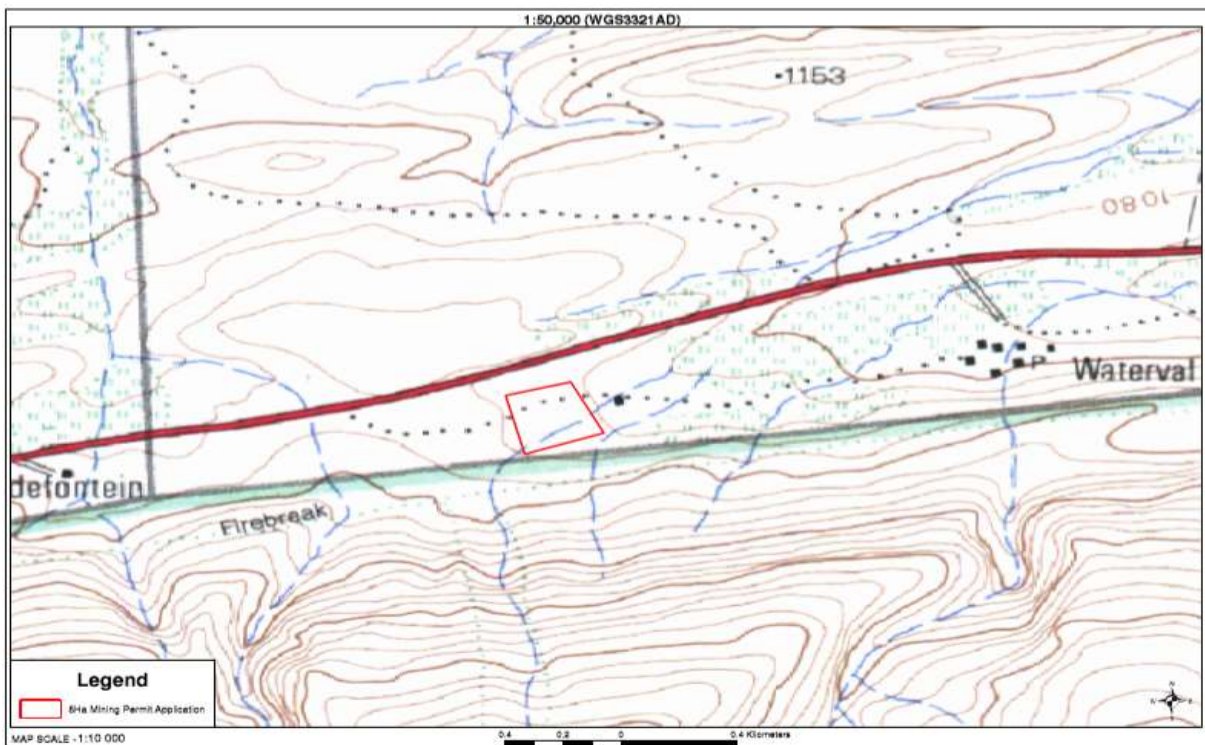


Figure 7: Locality on 1:10 000 topographical map.






Figure 8: Location of heritage resources.

Table 1: Inventory of heritage sites

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING	MITIGATION
BZF01	33°21'54.40"S	21°22'14.90"E	Modern	Sandy gravelly soil, ground dips gently SE to a stream Treeless, sparse grasses. Broken dolerite monolith propped into the ground inclined.	3C	Will not be affected
BZF02	33°21'54.59"S	21°22'13.63"E	Modern	Sandy gravelly soil, ground dips gently SE to a stream. Treeless, sparse grasses. Broken dolerite monoliths, stump propped into the ground	3C	Will not be affected.
BZF03	33°21'54.92"S	21°22'12.27"E	Modern	Open treeless, sparse grasses. Ground dips gently SE to a stream. Two fallen dolerite monoliths	3C	
BZF04	33°21'55.10"S	21°22'11.40"E	Modern	Open treeless, sparse grasses. Ground dips gently SE to a stream. Two fallen dolerite monoliths.	3C	Will not be affected
BZF05	33°21'55.30"S	21°22'10.20"E	Modern	Open treeless, sparse grass. Close to the base of a ridge. Standing monolith is an old fencing post	3C	Will not be affected
BZF06	33°22'2.10"S	21°22'10.30"E	MSA/LSA	Open, sandy, treeless, sparse grass, Swartberg mountains in the background. 1 Lithic, quartz scraper	3C	No further action required
BZF07	33°22'2.50"S	21°22'21.30"E	Modern	Sandy soils, sparse grass. A horseshoe setting of stands forms a low wall 30cm high. Purpose uncertain	3C	No further action required
BZF08	33°22'2.50"S	21°22'21.30"E	Modern	An isolated farmhouse on the foot of the Swartberg mountains. Gabled with a gabled veranda wing	3B	Will not be affected
BZF09	33°21'57.90"S	21°22'17.00"E	Modern	Open treeless, sparse grass. Swartberg mountains in the background. Standing monolith, 120cm tall. Old fencing post	3C	Low significance, can be disposed of

## 6. CATALOGUE OF HERITAGE RESOURCES

SITE NO	COORDINATES		PERIOD
BZF01	33°21'54.40"S	21°22'14.90"E	Modern
			
<p><b>DESCRIPTION:</b> Sandy gravelly soil, ground dips gently SE to a stream. Treeless, sparse grasses. Broken dolerite monolith propped into the ground inclined.</p>			
<b>HERITAGE SIGNIFICANCE</b>		Association with modern commercial farming	
<b>MITIGATION</b>		Will not be affected	

SITE NO	COORDINATES		PERIOD
BZF02	33°21'54.59"S	21°22'13.63"E	Modern



**DESCRIPTION:** Sandy gravelly soil, ground dips gently SE to a stream. Treeless, sparse grasses. Broken dolerite monoliths, stump propped into the ground

**HERITAGE SIGNIFICANCE** Association with modern commercial farming

**MITIGATION** Will not be affected.



SITE NO	COORDINATES		PERIOD
BZF03	33°21'54.92"S	21°22'12.27"E	MSA/LSA



**DESCRIPTION:** Open treeless, sparse grasses. Ground dips gently SE to a stream. Two fallen dolerite monoliths.

<b>HERITAGE SIGNIFICANCE</b>	Association with modern commercial farming
<b>MITIGATION</b>	Will not be affected.

SITE NO	COORDINATES		PERIOD
BZF04	33°21'55.10"S	21°22'11.40"E	Modern



**DESCRIPTION:** Open treeless, sparse grasses. Ground dips gently SE to a stream. Two fallen dolerite monoliths.

<b>HERITAGE SIGNIFICANCE</b>	Evidence of hunter-gatherer activities during the MSA/LSA
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<b>MITIGATION</b>	Will not be affected.
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SITE NO	COORDINATES		PERIOD
BZF05	33°21'55.30"S	21°22'10.20"E	MSA/LSA



**DESCRIPTION:** Open treeless, sparse grass. Close to the base of a ridge. Standing monolith is an old fencing post.

<b>HERITAGE SIGNIFICANCE</b>	Evidence of hunter-gatherer activities during the MSA/LSA
<b>MITIGATION</b>	Will not be affected.



SITE NO	COORDINATES		PERIOD
BZF06	33°22'2.10"S	21°22'10.30"E	MSA/LSA
			
<p><b>DESCRIPTION:</b> Open, sandy, treeless, sparse grass, Swartberg mountains in the background. 1 Lithic, quartz scraper. (Camera lid is 6cm diameter)</p>			
<b>HERITAGE SIGNIFICANCE</b>	Evidence of hunter-gatherer activities during the MSA/LSA		
<b>MITIGATION</b>	No further action required.		



SITE NO	COORDINATES		PERIOD
BZF07	33°22'2.50"S	21°22'21.30"E	Modern



**DESCRIPTION:** Sandy soils, sparse grass. A horseshoe setting of stands forms a low wall 30cm high. Purpose uncertain

<b>HERITAGE SIGNIFICANCE</b>	Association with modern commercial farming activities.
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<b>MITIGATION</b>	Low significance, can be disposed of.
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SITE NO	COORDINATES		PERIOD
BZF08	33°22'2.50"S	21°22'21.30"E	Modern



**DESCRIPTION:** An isolated farmhouse on the foot of the Swartberg mountains. Gabled with a gabled veranda wing.

<b>HERITAGE SIGNIFICANCE</b>	Association with modern commercial farming
<b>MITIGATION</b>	Will not be affected.

SITE NO	COORDINATES		PERIOD
BZF09	33°21'57.90"S	21°22'17.00"E	Modern



**DESCRIPTION:** Open treeless, sparse grass. Swartberg mountains in the background. Standing monolith, 120cm tall. Old fencing post.

<b>HERITAGE SIGNIFICANCE</b>	Association with modern commercial farming
<b>MITIGATION</b>	Low significance, can be disposed of.

## 7. AN ASSESSMENT OF THE SIGNIFICANCE OF THESE IDENTIFIED RESOURCES

The ranking system has been adapted from Guidelines for involving Heritage Specialists in EIA processes by Winter S and & N. Baumann (2005: 19)

GRADE	RANKING	SIGNIFICANCE	NO: SITES
1	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
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
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	0
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources	1
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	8
		<b>TOTAL</b>	<b>9</b>

### 7.1. Assessment of Impacts using the 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**

Nine sites (9) sites were recorded of which two a located within the footprint of the proposed sand mining. The two sites are considered of low significance and may be disposed of.

**(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.

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

The sites are of low significance and the risk to heritage is minimal.

**(d) 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**

Sand Mining has become important in the strategy to diversify income as Karoo farms are reeling from the effects of droughts and possible irreversible impacts of climate change.

**(e) The results of consultation with communities and state bodies (e.g. local authorities) affected by the proposed development and other interested parties regarding the impact of the development on heritage resources including unabridged copies of the comments received**

Informed public consultation process has been undertaken within the ambit of the Environmental Impact Assessment (EIA) superintended by the Environmental Specialist with heritage issues included in the agenda of engagements. This was deemed sufficient did not need to be repeated as part of the heritage impact assessment.



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

N/A.

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

In the event of 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.

## **7.2. Risk Assessment of the findings**

<b>EVALUATION CRITERIA</b>	<b>RISK ASSESSMENT</b>
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	Site preparation and mining phase
Extent of Impact	Test pits, excavations and ground clearing, opencast mining can result in damage and destruction of archaeological resources above and below the surface not seen during the survey.
Duration of Impact	Any accidental destruction of surface or subsurface relics is not reversible, but can be mitigated.
Intensity	Uncertain.
Probability of occurrence	Medium.
Confidence of assessment	High.
Level of significance of impacts before mitigation	High.
Mitigation measures	The resources located within the footprint of the proposed development are of low significance. If archaeological or other heritage relics are found during the construction phase, heritage authorities will be advised immediately and a heritage

	specialist will be called to attend. This is standard precaution in view of inherent limitations of archaeological fieldwork.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

## 8. RECOMMENDATIONS AND CONCLUSIONS

The mining application can be considered in light of the low cultural significance of material found. However it is a standard precaution that in the event of other heritage resources being discovered 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.

## 9. DETAILS OF SPECIALIST

Dr Edward Matenga holds a PhD in Archaeology and Heritage from the Department of African Archaeology & Ancient History at Uppsala University (Sweden). He is a member of International Council on Monuments and Sites (ICOMOS), and Association of Southern African Professional Archaeologists (ASAPA, No 363). Matenga served as Curator and subsequently Director of the Great Zimbabwe World Heritage Site.

Matenga has extensive experience in strategic planning for heritage protection, preparation of World Heritage nomination dossiers, UNESCO state of conservation periodic reporting for World Heritage Sites and Evaluations of World Heritage Nominations.

Matenga has written books and contributed articles in international journals which demonstrate authority on a wide range of issues in African archaeology and conservation of heritage.

Matenga has carried out more than 100 Archaeological and Heritage Impact Assessments in many parts of the country including especially in the Limpopo and Northern Cape Provinces.

His international experience in the field of Heritage encompasses several countries in Africa including Mauritius, Angola, Cameroon and Zimbabwe.

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Consulted November 2019.