

**McGregor Museum  
Department of Archaeology**



**Report on a Phase 1  
Archaeological Assessment for a  
proposed Mining Permit and  
Prospecting Right in the name of  
Misabrite (Pty) Ltd  
at a portion of Portion 1, Vooruitzigt-  
81, Kimberley, Northern Cape.**

David Morris  
July 2020

## **Report on a Phase 1 Archaeological Assessment for a proposed Mining Permit and Prospecting Right in the name of Misabrite (Pty) Ltd at a portion of Portion 1, Vooruitzigt-81, Kimberley, Northern Cape.**

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### **Introduction**

The present report was commissioned by Misabrite (Pty) Ltd (Mr Fernando Garcao, 30 Jan van Zyl Street, Kimberley, 8300, email: [fernando@kimberleygroup.co.za](mailto:fernando@kimberleygroup.co.za)) and assesses an area for the proposed mining of dolerite resources for a crushing works to generate building materials for housing projects in the city of Kimberley. A separate report (Morris 2020) has already been completed for the prospecting right of the surrounding area (A-E in the map given below). This report covers the area A1-D1 which falls within the A-E area previously investigated.

The archaeology of the Northern Cape is rich and varied, covering long spans of human history. Some areas are richer than others, and not all sites are equally significant. Heritage impact assessments are a means to facilitate development while ensuring that what should be conserved is saved from destruction, or adequately mitigated and/or managed.

This report details archaeological observations made at the site of proposed mining at a portion of Portion 1, Vooruitzigt-81, including the abandoned shooting range site, recently abused by informal dumping and a certain amount of illegal quarrying for Hutton sands (reported to DMR). Fieldwork was carried out by the McGregor Museum Archaeology Department on 10 June 2020.

### **Terms of reference**

Terms of reference were to carry out a Phase 1 Archaeological Impact Assessment on the identified mining area A-E with specific reference to A1-D1 and thereby determine significance of impact of the proposed quarrying activity.

### **Specialist and Legislation**

The author is a professional archaeologist (PhD) accredited as a Principal Investigator by the Association of Southern African Professional Archaeologists.

He has worked as a museum archaeologist and has carried out specialist research and surveys in the Northern Cape since 1985.

The author is independent of the organization commissioning this specialist input, and provides this heritage assessment (archaeology and colonial history but not palaeontology) within the framework of the National Heritage Resources Act (No 25 of 1999).

The National Heritage Resources Act no. 25 of 1999 (NHRA) protects heritage resources which include archaeological and palaeontological objects/sites older than 100 years, graves older than 60 years, structures older than 60 years, as well as intangible values attached to places. The Act requires that anyone intending to disturb, destroy or damage such sites/places, objects and/or structures may not do so without a permit from the relevant heritage resources authority.

Heritage is assessed in terms of a NEMA application, and must comply with section 38(3) of the NHRA. SAHRA would then comment and make recommendations on the potential impacts.

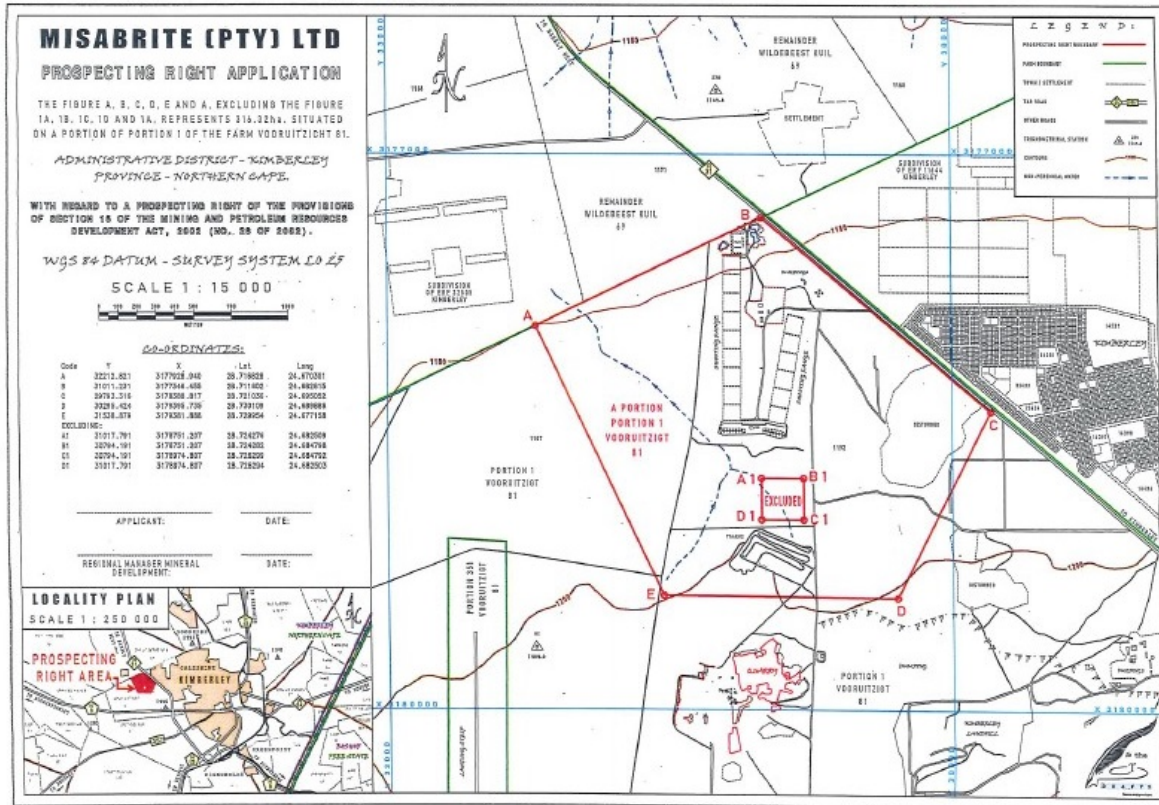
(Where archaeological sites and palaeontological remains are concerned, the South African Heritage Resources Agency (SAHRA) at national level acts on an agency basis for the Provincial Heritage Resources Agency (PHRA) in the Northern Cape. The Northern Cape Heritage Resources Authority (formerly called Ngwao Bošwa ya Kapa Bokone) is responsible for the built environment and other colonial era heritage and contemporary cultural values).

## **Methods and limitations**

A background literature/museum database search provides indications of what might be expected in the region. A previous survey was conducted on an adjoining area in 2012 (Morris 2012).

During the site investigation, it was noted that parts of the area are already disturbed by informal sand quarrying, as well as informal waste dumping.

The entire area is veneered by Hutton Sands which would obscure from view some of the types of archaeological traces expected in the area (MSA/Fauresmith lithics typically rest on calcrete/decomposing dolerite which occurs between 1 and 1.5 m below the present surface (Fernando Garcao pers comm). Representative parts of the proposed mining area, and particularly areas where Hutton Sands have been depleted by quarrying, were inspected on foot to assess findings relative to expectations.



Map indicating the locality of proposed mining on Portion 1 of Vooruitzicht-81

### Background: archaeological resources in the region

Broadly speaking, the archaeological record of this region reflects the long span of human history from Earlier Stone Age times, through the Middle Stone Age, to the Later Stone Age, with the last 2000 years being a period of increasing social complexity, with the appearance of farming (herding and agriculture) alongside hunting and gathering, and of ceramic and metallurgical (Iron Age) technologies alongside an older trajectory of stone tool making (Morris & Beaumont 2004). In the urban areas of Kimberley traces of these pasts have been unearthed in the form, most usually, of cf Fauresmith handaxes and flaked stone tools (these are ubiquitous albeit in low densities) as well as Later Stone Age sites as noted in the past at the base of a debris dump in Long Street (McGregor Museum records), at the quarry near Roodepan (Morris 2006) and elsewhere on Vooruitzicht-81 (Morris & Kaplan 2001). Significant in the urban environment are colonial era sites including those of interest to industrial archaeology. Notable are domestic and mining ash middens that contain a wealth of material culture (e.g. Morris & Kaplan 2001). A substantial example of such a dump occurs on the slope south of Kamfersdam, just below the railway near the Flamingo Casino. The waste dump site west of Kimberley, part of which falls immediately south east of the proposed mining site, is of more recent age, while dumping areas within the mining site are probably all less than two decades old.

Rock art in the form of engravings is known to occur on both andesite and dolerite outcrops and hills in the area, e.g. Vaalpan and Wildebeest Kuil (Wilman 1933; Morris 1988; Beaumont & Morris 1990) – but such outcrops do not occur in the proposed mining site.

### **Description and evaluation of environmental issues and potential impacts**

Heritage resources including archaeological sites are in each instance unique and non-renewable resources. Area and linear developments can have a permanent destructive impact on these resources in cases where they are impacted. The objective of this study is to assess the significance of such resources, where present, and to recommend no-go or mitigation measures (where necessary) to facilitate or constrain the development.

Area impacts would be spatially constrained within a few metres where mining is conducted by drilling, but more extensive where Hutton Sands are removed. Mining of dolerite resources would involve significant area impacts.

### **Observations**

Portions of the area in question are substantially disturbed by previous quarrying, but these ironically were the only places where archaeological observations were made. The remainder of the site is undisturbed veld (though in places with recently dumped urban waste) with Kalahari Thornveld vegetation supported by circa 1-1.5 m depth of Hutton Sands which rest in turn on decomposing dolerite (with calcrete formation in places).

The expectation was that few if any archaeological observations were likely to be made at the surface of the aeolian sands, while the most significant cultural material preserved in situ would most likely comprise cf. Fauresmith material at the base of the Hutton Sands.

The site was visited on 10 June 2020 by the author in the company of Mr Garcao, who indicated the site boundaries and pointed out areas where Hutton Sands have been removed, i.e. where observations relevant to the archaeology were most likely to be made. These were at 28°43'22" S, 24°41'05" E and 28°42'48" S, 24°40'58" E.

Recent waste dumps obscured the surface of the area, while Hutton Sand surfaces elsewhere yielded only isolated and very widely dispersed individual flaked stone (hornfels) debitage, of very low significance. These areas, more than 90% of the surface, afforded zero to limited opportunities for assessing sub-surface heritage traces.

The bottoms of existing quarry areas were mostly sand floors, evidently overlying bedrock. It was where bedrock (decomposing dolerite and occasional calcrete

patches) was exposed that rare pieces on hornfels were located, as predicted. These included one biface and a number of flakes, one of which had a faceted platform. These matched observations made in the adjacent property surveyed in 2012, with cf. Fauresmith in eroded/scraped areas, occurring also in low densities.

It is predicted that such material would occur at the base of the Hutton Sands, i.e. currently hidden from view, across the entire site.



Hutton Sands mantle the entire extent of the proposed mining site, locally quarried into by previous sand mining, as in this view of Portion 1, Vooruitzigt-81. Cf. Fauresmith artefacts were noted in low densities in parts where the Hutton Sands have been removed to the level of bedrock. These are indicative of an expected widespread but generally low density occurrence of such artefacts in a horizon at the base of the Hutton Sands, overlying calcrete and/or dolerite.



Previous informal removal of 'top soil' Hutton Sands and dumping constitute disturbance of the landscape. These disturbances nevertheless provide an opportunity to observe presence/absence of archaeological material subsurface.



Profile in a disturbed part of the site showing about 1.5 m thickness of Hutton Sands overlying decomposing dolerite.



In areas where calcrete or dolerite protrude very low densities of artefacts were noted. Only a limited number of such exposures were found in the floors of previous quarries, as noted in the following two photographs.



A low density of artefacts, Middle Stone Age or Fauresmith, found on the floor of disturbed areas, i.e. where Hutton Sands have been quarried away to the interface with dolerite which is often capped with calcrete.





The presence of a biface suggests that this material is Fauresmith (as noted at many other sites in the Kimberley area – Beaumont & Morris 1990).

### **Assessment of impacts**

It is predicted that there would be a negligible impact on archaeological resources during the proposed mining, with cf. Fauresmith artefacts known to occur but in only low densities as 'background scatter' at the base of the Hutton Sands. No mitigation measures are considered necessary on the basis of observations made.

It remains possible that archaeological material such as that noted may occur locally in higher densities at the base or within the red sands (comparable to sites noted along the Samaria Road north east of Kimberley - Beaumont & Morris 1990; Morris & Beaumont 2004), and in the event of such occurrences becoming apparent, SAHRA should be alerted. The McGregor Museum would willingly assist in evaluating such finds.

### **Procedure in the event of sites being found during mining or secondary impacts**

In the event that sites or features (eg high density of artefacts, a burial, or ostrich eggshell cache) being found during the mining project, SAHRA should be informed immediately to determine steps (e.g. have an archaeologist assess the find/s and recommend mitigation, if necessary). All archaeological traces are protected by legislation, as indicated above.

### **Recommendations**

A very low density 'background scatter' of cf. Fauresmith artefacts was noted in areas where Hutton Sands are removed, both on the mining site and in an immediately adjacent property (Morris 2012). No colonial era or other cultural resources were in evidence. Archaeological significance of the area is reckoned to be LOW. There is potential for subsurface material across the entire area but indications are that densities would be low. Steps for reporting in the event of archaeological material being found are indicated.

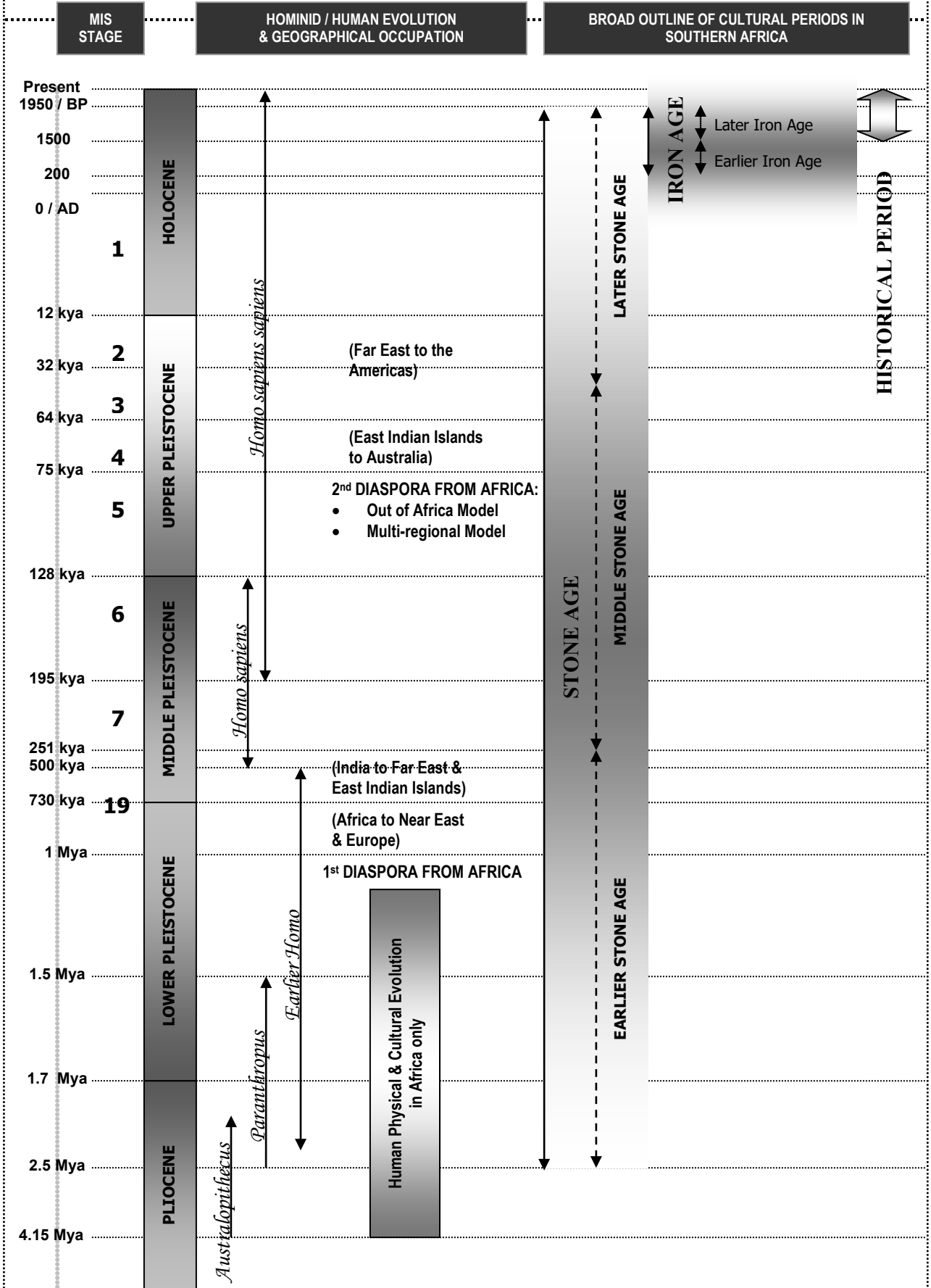
In summary, the proposed mining is not expected to have a negative impact on the heritage resources of the area. Archaeologists should be granted access to the mining operation at any time to inspect sections and exposed areas at the base of the Hutton Sands.

## References

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# Schematic Human Physical and Cultural Evolution in Africa



## Extracts from the

# National Heritage Resources Act (No 25 of 1999)

## DEFINITIONS

### Section 2

In this Act, unless the context requires otherwise:

- ii. *"Archaeological"* means –
  - a) material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
  - b) rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10 m of such representation;
  - c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic,... and any cargo, debris, or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation.
- viii. *"Development"* means any physical intervention, excavation or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including –
  - a) construction, alteration, demolition, removal or change of use of a place or structure at a place;
  - b) carrying out any works on or over or under a place;
  - c) subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
  - d) constructing or putting up for display signs or hoardings;
  - e) any change to the natural or existing condition or topography of land; and
  - f) any removal or destruction of trees, or removal of vegetation or topsoil;
- xiii. *"Grave"* means a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place;
- xxi. *"Living heritage"* means the intangible aspects of inherited culture, and may include –
  - a) cultural tradition;
  - b) oral history;
  - c) performance;
  - d) ritual;
  - e) popular memory;
  - f) skills and techniques;
  - g) indigenous knowledge systems; and
  - h) the holistic approach to nature, society and social relationships.
- xxxi. *"Palaeontological"* means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace;
- xli. *"Site"* means any area of land, including land covered by water, and including any structures or objects thereon;
- xliv. *"Structure"* means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith;

## NATIONAL ESTATE

### Section 3

- 1) For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.
- 2) Without limiting the generality of subsection 1), the national estate may include –
  - a) places, buildings, structures and equipment of cultural significance;

- b) places to which oral traditions are attached or which are associated with living heritage;
- c) historical settlements and townscapes;
- d) landscapes and natural features of cultural significance;
- e) geological sites of scientific or cultural importance
- f) archaeological and palaeontological sites;
- g) graves and burial grounds, including –
  - i. ancestral graves;
  - ii. royal graves and graves of traditional leaders;
  - iii. graves of victims of conflict
  - iv. graves of individuals designated by the Minister by notice in the Gazette;
  - v. historical graves and cemeteries; and
  - vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No 65 of 1983)
- h) sites of significance relating to the history of slavery in South Africa;
- i) movable objects, including –
  - i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
  - ii. objects to which oral traditions are attached or which are associated with living heritage;
  - iii. ethnographic art and objects;
  - iv. military objects;
  - v. objects of decorative or fine art;
  - vi. objects of scientific or technological interest; and
  - vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

## **STRUCTURES**

### **Section 34**

- 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.

## **ARCHAEOLOGY, PALAEOLOGY AND METEORITES**

### **Section 35**

- 3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.
- 4) 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 assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- 5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedure in terms of section 38 has been followed, it may –
  - a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
  - b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;

- c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph a) to apply for a permit as required in subsection 4); and
  - d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.
- 6) The responsible heritage resources authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or meteorite is situated, serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

## **BURIAL GROUNDS AND GRAVES**

### **Section 36**

- 3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority –
- a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
  - b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
  - c) bring onto or use at a burial ground or grave referred to in paragraph a) or b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
- 4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction of any burial ground or grave referred to in subsection 3a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
- 5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection 3b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority –
- a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and
  - b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.
- 6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority –
- a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
  - b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

## **HERITAGE RESOURCES MANAGEMENT**

### **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, powerline, 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 m<sup>2</sup> in extent; or
    - ii. involving three or more existing erven or subdivisions thereof; or

- iii. involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or
  - iv. the costs which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
  - d) the rezoning 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,
- 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) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection 1) –
    - a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or
    - b) notify the person concerned that this section does not apply.
  - 3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection 2a) ...
  - 4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development decide –
    - a) whether or not the development may proceed;
    - b) any limitations or conditions to be applied to the development;
    - c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
    - d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and
    - e) whether the appointment of specialists is required as a condition of approval of the proposal.

## **APPOINTMENT AND POWERS OF HERITAGE INSPECTORS**

### **Section 50**

- 7) Subject to the provision of any other law, a heritage inspector or any other person authorised by a heritage resources authority in writing, may at all reasonable times enter upon any land or premises for the purpose of inspecting any heritage resource protected in terms of the provisions of this Act, or any other property in respect of which the heritage resources authority is exercising its functions and powers in terms of this Act, and may take photographs, make measurements and sketches and use any other means of recording information necessary for the purposes of this Act.
- 8) A heritage inspector may at any time inspect work being done under a permit issued in terms of this Act and may for that purpose at all reasonable times enter any place protected in terms of this Act.
- 9) Where a heritage inspector has reasonable grounds to suspect that an offence in terms of this Act has been, is being, or is about to be committed, the heritage inspector may with such assistance as he or she thinks necessary –
  - a) enter and search any place, premises, vehicle, vessel or craft, and for that purpose stop and detain any vehicle, vessel or craft, in or on which the heritage inspector believes, on reasonable grounds, there is evidence related to that offence;
  - b) confiscate and detain any heritage resource or evidence concerned with the commission of the offence pending any further order from the responsible heritage resources authority; and
  - c) take such action as is reasonably necessary to prevent the commission of an offence in terms of this Act.

A heritage inspector may, if there is reason to believe that any work is being done or any action is being taken in contravention of this Act or the conditions of a permit issued in terms of this Act, order the immediate cessation of such work or action pending any further order from the responsible heritage resources authority.