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Phase 1 Archaeological Impact Assessment -

**PORTION OF ERF 314, DOUGLAS,  
HERBERT DISTRICT, NORTHERN CAPE, SOUTH AFRICA**

DATE: 2007-06-18

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**REPORT TO -**

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# 1) TERMS OF REFERENCE

## 1.1) LEGISLATIVE COMPLIANCE

ArchaeoMaps was contracted by the developer, Dansil H. Jants, to conduct a Phase 1 Archaeological Impact Assessment (AIA). The Phase 1 AIA was requested in compliance with the Mineral and Petroleum Resources Development Act, No 28 of 2002 (MPRDA 2002), represented by the Department of Minerals and Energy (DME), in accordance with referenced natural and cultural environmental requirements as prescribed in the National Environmental Management Act, No 107 of 1998 (NEMA 1998), represented by the Department of Environmental Affairs and Tourism (DEAT) and the National Heritage Resources Act, No 25 of 1999 (NHRA 1999), represented by the South African Heritage Resources Agency (SAHRA).

## 1.2) DEVELOPMENT LOCATION AND IMPACT

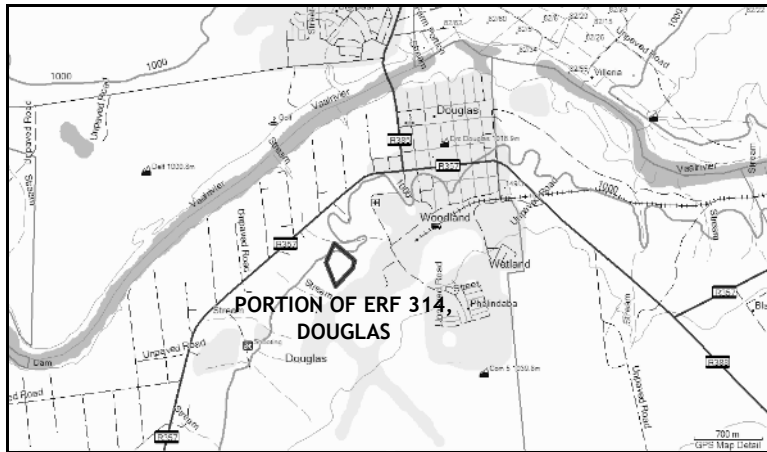
The Phase 1 AIA focused on two proposed open cast diamond mining development areas to be situated on a portion of the property Erf 314, Douglas, Herbert District, Northern Cape, South Africa (1:50;000 map ref: 2923 BB Douglas). The two proposed developments (under mining application permits 1244 and 1245) are situated immediately adjacent to each other. Each development will comprise of a 1.5ha area, totaling a cumulative 3ha development area. The development area is located approximately 1.8km South West of the center of Douglas and approximately 1.2km South East of the Vaal River.



**MAP 1:** Douglas, Northern Cape, South Africa

The open cast mining method impact on archaeological and cultural heritage resources, as defined and protected by the NHRA (1999), will be total; resulting in the entire loss of archaeological and cultural heritage resources and their associated contexts.

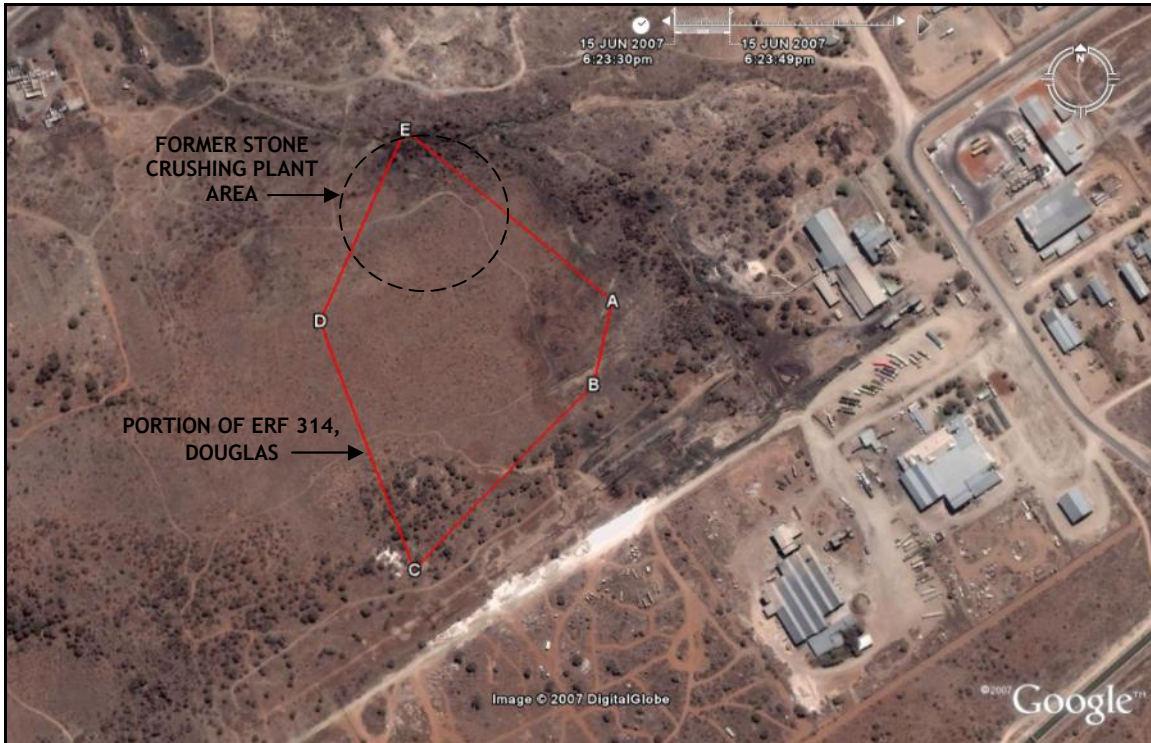
## 2) THE PHASE 1 ARHAEOLOGICAL IMPACT ASSESSMENT



MAP 2: The 6.8ha Phase 1 AIA area; Portion of Erf 314, Douglas



MAP 3: The 6.8ha Phase 1 AIA area; Portion of Erf 314, Douglas



**MAP 4:** Close-up of the 6.8ha Phase 1 AIA area (A-E); Portion of Erf 314, Douglas

## 2.1) METHODOLOGY

The one day assessment (2007-06-14) was conducted by one archaeologist. The assessment was done by foot and limited to a Phase 1 surface survey; no excavation or sub-surface testing was done since a permit from SAHRA is required to do so. GPS co-ordinates were taken with a Garmin Quest GPS. Photographic documentation was done with a Casio X-S2 Exilim camera. A combination of Garmap and Google Earth software was used in the display of spatial information.

Archaeological and cultural heritage site significance assessment and associated mitigation recommendations were done according to the system prescribed by SAHRA (2005).

FIELD RATING	GRADE	SITE SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance	Grade 1	High Significance	Site conservation / Site development
Provincial Significance	Grade 2	High Significance	Site conservation / Site development
Local significance	Grade 3A	High Significance	Site preservation or extensive mitigation before development destruction
Local significance	Grade 3B	High Significance	Site preservation or extensive mitigation before development destruction
Generally Protected A	-	High / Medium Significance	Site preservation or mitigation before development destruction
Generally Protected B	-	Medium Significance	Site preservation or mitigation / test excavation / systematic sampling before development destruction
Generally Protected C	-	Low Significance	No archaeological mitigation required – Site destruction

**TABLE 1:** Archaeological and cultural heritage site significance and mitigation recommendations

## 2.2) COVERAGE AND GAP ANALYSIS

The Phase 1 AIA covered:

- 1) An approximate 6.8ha area (A-E) incorporating the proposed 3ha mining development area; and
- 2) The existing gravel access road to the proposed development area.

## 2.3) PHASE 1 AIA FINDINGS

The Phase 1 AIA focused on an approximate 6.8ha area incorporating the proposed 3ha open cast diamond mining area of mining permit applications 1244 and 1245 and the immediate surrounds. The dolomite rich proposed development area is characterized by large scale disturbance: Stone crushing disturbance and debris distinguishes the northern portion of the proposed development area formerly used as a stone crushing plant. The remainder of the area is typified by shallow pick and shovel diamond diggings dating to the pre 1970's. Sub-surface sections are exposed in the early diamond digging pits, to average depths of up to 1-1.2m.

Assessment of the surface area revealed primarily Middle (MSA) and Later Stone Age (LSA) artefacts. Artefact ratios (artefacts: m<sup>2</sup>) were extremely varied, approximating 1-25: 16, where present. However, any interpretation based on the recorded artefact ratio is expected to be extremely biased based on former pick and shovel mining and stone crushing disturbance, having changed virtually the total of the surface area into a flattened, rehabilitated dumping site. Identified artefacts were primarily produced from local fine grained dolomite. Artefact types include flake, blade and scraper types. Artefacts representing types observed on the surface were present in existing, more prominent mine and crusher dumps and in the few inferred in situ mining sections. The total of the assessed area can thus be interpreted as having been at least a low density MSA and LSA 'site' or 'occurrence'. However, former disturbance have destroyed the context of the archaeological material, negatively impacting on the significance of these archaeologically rich gravels. The presence of Stone Age artefacts however clearly affirms the anthropic importance of the Vaal River gravels.

An existing access road is scraped across the disturbed deposits.

✂ Site Significance and Recommendations: The total of the 6.8ha assessed area yielded varying, but relatively low densities of MSA and LSA lithic artefacts in primarily ex situ contexts associated with early mining and stone crushing activities. The find comprise of an archaeological 'area' or 'occurrence' rather than a 'site'. Based partly on the low density of lithic artefacts and more importantly on the already disturbed contexts of the artefacts the 'area' is ascribed a Low Significance and a Generally Protected C Field Rating; no archaeological mitigation is required prior to destruction of the archaeological area.

(The artefact 'occurrence' was consistent across the total of the assessed area, incorporating the two proposed mining development areas. The occurrence stretches beyond the border of the assessed area. The

boundaries of the occurrence could not be determined but are expected to stretch for a relative distance along the Vaal River. The Low Site Significance of the recorded occurrence is ascribed to the disturbed context of anthropic deposits, by inference were deposits are less disturbed, the Site Significance of the occurrence may rise and mitigation in such areas may well be of scientific relevance.)

DEVELOPMENT AREA	ARCHAEOLOGICAL SITES, FIND PLACES AND FEATURES	IMAGE NR	CO-ORDINATES	
			SOUTH	EAST
Portion of Erf 314, Douglas, Northern Cape				
Development Area				
A	-	Image 1,4 & 9	S29° 03.970'	E23° 45.915'
B	-		S29° 04.014'	E23° 45.904'
C	-		S29° 04.113'	E23° 45.794'
D	-		S29° 03.981'	E23° 45.736'
E	-		S29° 03.877'	E23° 45.787'
	Stone crusher plant	Image 2-3		
	Pick and shovel mining	Image 5-8		

**TABLE 2:** GPS co-ordinates of the proposed development area, identified and associated sites and features



**IMAGE 1:** View towards the Vaal River from the proposed development area



**IMAGE 2:** Remains of the former stone crushing plant, comprising a large portion of the northern part of the assessed area



**IMAGE 3:** Surface debris, a result of the proposed development area having been used as a stone crushing plant



**IMAGE 4:** Close-up of the general surface of the proposed development area, clearly highlighting the impact of former stone crushing and pick and shovel mining on deposits



**IMAGE 5 & 6:** General view of the proposed development area, note the impact of former pick and shovel mining on the area



**IMAGE 7:** Developer Dansil H. Jants at a former pick and shovel mine, characterizing the surface of the proposed development area



**IMAGE 8:** A small pick and shovel mine dump typifying the surface of the proposed development area



**IMAGE 9:** General view of the proposed development area, numerous small mine dumps intersect small open cast mine remains and rehabilitated surface areas



**IMAGE 10:** Lithic artefacts from the proposed development area



### **3) CONCLUSION AND RECOMMENDATIONS**

A low density Middle (MSA) and Later Stone Age (LSA) artefacts were observed on the disturbed, rehabilitated surface and within existing dump deposits of the proposed development area, including an existing access road, formerly used for pick and shovel mining and as a stone crushing plant. The low density archaeological lithic material in already disturbed contexts is of Low Significance. The archaeological occurrence stretches beyond the borders of the assessed area and is expected to continue for a relative distance along the Vaal River. The significance of the occurrence is expected to rise pending fewer disturbances of deposits.

Besides the recorded lithic archaeological deposits no other cultural heritage resources inclusive of palaeontological deposits, built structures older than 60 years, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict and cultural landscapes or viewsapes, as defined and protected by the NHRA (1999) were identified during assessment of the approximate 6.8ha portion of Erf 314, Douglas, Northern Cape.

#### **3.1) RECOMMENDATIONS**

It is recommended that the two proposed open cast diamond mining developments, under mining application permits 1244 and 1245, to be situated on a portion of Erf 314, Douglas, Northern Cape, proceed as applied for.

Mining will impact on recorded low densities of Middle (MSA) and Later Stone Age (LSA) material. The already disturbed deposits, due to former stone crushing and mining activities on the site, are of Low Significance. It is recommended that mining in the area proceed without the developer having to apply for a Site Destruction Permit from SAHRA.

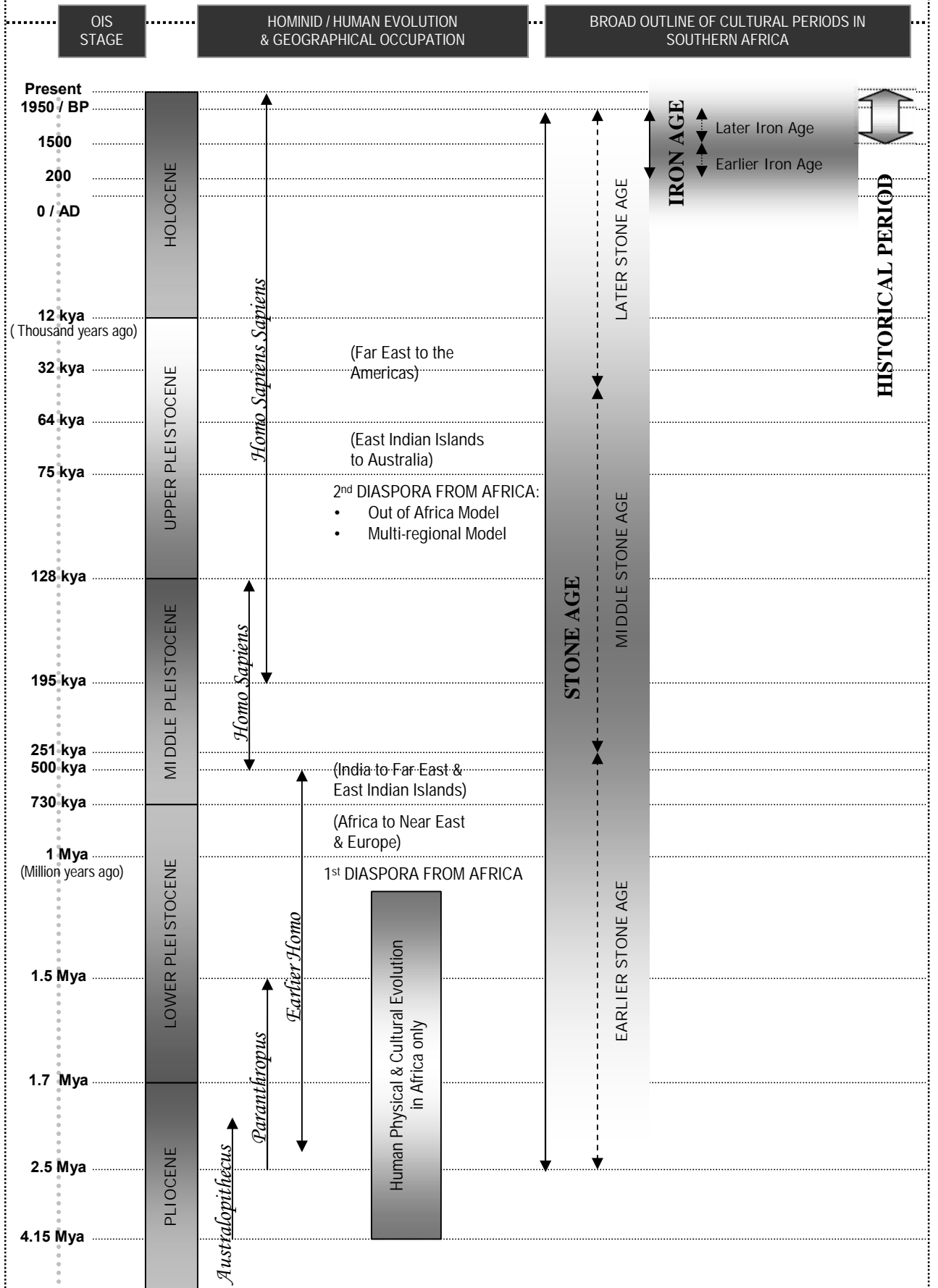
### **4) ACKNOWLEDGEMENTS**

I would like to thank Dansil H. Jants and Roshaun Morolong for accompanying me to the site and providing on site and development information.

### **5) REFERENCES CITED**

- i. South African Government. (No 107) of 1998. National Environmental Management Act.
- ii. South African Government. (No 25) of 1999. National Heritage Resources Act.
- iii. South African Government. (No 28) of 2002. Mineral and Petroleum Resources Development Act.
- iv. South African Heritage Resources Agency. 2005. Minimum standards for the archaeological and heritage components of impact assessments. Unpublished guidelines.

# Schematic Outline of the Pre-historic and Historic Periods



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.
- 10) 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