

McGregor Museum

Department of Archaeology



Screening Phase Heritage Assessment of the proposed PV solar park near Keimoes, Northern Cape.

David Morris, McGregor Museum

July 2011

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
TECHNICAL SUMMARY	3
1. INTRODUCTION	4
2. TERMS OF REFERENCE	5
3. DESCRIPTION OF THE RECEIVING ENVIRONMENT AND HERITAGE RESOURCES	5
4. STUDY APPROACH AND METHODOLOGY (inlc. limitations and assumptions)	6
5. DESCRIPTION OF THE AFFECTED ENVIRONMENT	6
6. FINDINGS – SITE SIGNIFICANCE AND ASSESSMENT	6
7. IDENTIFICATION OF NO-GO AREAS AND BUFFER ZONES, MITIGATION AND CONSERVATION MEASURES	8
8. CONCLUSIONS	8
9. REFERENCES	8
APPENDIX 1: CONVENTIONS USED TO DETERMINE THE SIGNIFICANCE OF CULTURAL HERITAGE RESOURCES	10
APPENDIX 2: CONVENTIONS USED TO IDENTIFY POTENTIAL RISKS/ IMPACTS OR “NO-GO AREAS” ON HERITAGE RESOURCES	12
APPENDIX 3. RELEVANT LEGISLATION	15
APPENDIX 4. ILLUSTRATIONS / MAPS	21
GLOSSARY of select archaeological terms used in the report	23

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EXECUTIVE SUMMARY

A screening phase assessment is provided. Without carrying out a physical site visit this study can merely point to known regional patterns in heritage and highlight aspects that can be indicated from features observed in Google Earth images.

It is predicted that the more sensitive area within the identified properties would tend to be in the vicinity of the hills and dunes within the Blucoso Trust property while those areas away from the above features most likely have more sparse heritage (specifically Stone Age) resources. The nature and significance of any of these occurrences can only be verified and evaluated during a field survey of the property.

At this stage no fatal flaws could be identified.

A follow-up field assessment is needed to test predictions and document the gaps highlighted in this report.

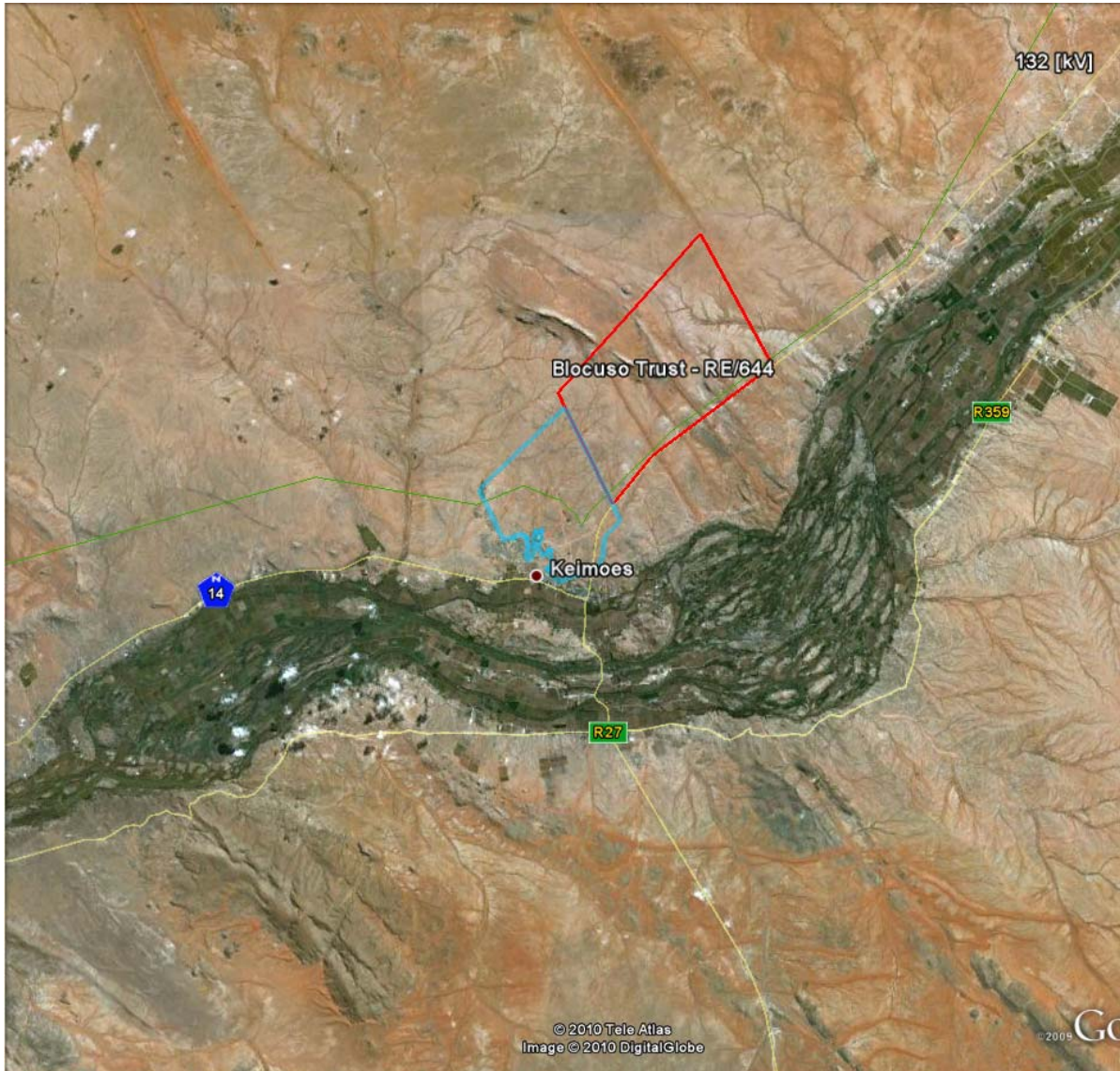
TECHNICAL SUMMARY

It is anticipated that most of the area, particularly older eroded surfaces, will be found to have generally very low density surface scatters of mainly Pleistocene Stone Age material. Later Stone Age (LSA) and Ceramic Later Stone Age sites may occur in more recent surfaces and sediments such as the dune areas. A small cave site and specularite working with associated Ceramic LSA material is known in the hills of Zovoorby (within Blucoso Trust area). LSA burials are known from the region and may occur within the study area. It is not presently known if engravings would be found in the hills in the study area. Limited colonial era heritage could be detected at this stage. The identified formal cemetery north of Keimoes is one of the current peri-urban infrastructural features identified. In terms of visual impacts, the hills and dunes of the Blucoso area are identified as being a notable feature along a tourism route.

1. INTRODUCTION

The author was approached by CSIR Consulting and Analytical Services (Lydia Cape-Ducluzeau) (P.O. Box 320, Stellenbosch, 7599, tel 021-8882429, fax 021-8882693, mob 0726574719, email LCapeDucluzeau@csir.co.za) to undertake a desktop study for the environmental screening study of three PV Solar park and associated infrastructure developments proposed by Mainstream Renewable Power South Africa and situated near Jacobsdal, Douglas and Keimoes in the western Free State and Northern Cape.

This report addresses the study of the proposed PV Solar park on Municipal and Blucoso Trust property (outlined in blue and red respectively in the map) north of the Orange River near Keimoes in the Northern Cape.



The author of this report is a qualified archaeologist accredited as a Principal Investigator by the Association of Southern African Professional Archaeologists. The author has worked as a museum archaeologist in the Northern Cape since 1985 and has carried out research and surveys in the region (Beaumont & Morris 1990, Morris & Beaumont 2004).

The author is independent of the organization commissioning this specialist input, and provides this Specialist Report within the framework of the National Heritage Resources Act (No 25 of 1999).

2. TERMS OF REFERENCE

The scope of work has been defined as:

- Description of the area and proposed site in terms of heritage/archaeological features with reference to any relevant information for future planning and related implications for heritage assets;
- Identification of any potential fatal flaws due to the proposed project and proposed facilities;
- Recommendations of practical measures which can be incorporated into the planning of the project that will result either in the avoidance of potentially significant negative environmental impacts or their mitigation to the extent that residual effects fall within acceptable limits; and enhancement of positive aspects of the project;
- Estimation of the carrying capacity of the site for solar energy development in terms of environmental/social criteria;
- Identification of any potential “no go areas” on the site where the panels should not be located;
- Sensitivity maps including all relevant archaeological/heritage impacts - mapping of a zoning on a low-medium-high sensitivity rating
- Recommendation of possible baseline studies to address specific environmental and social issues that may require a greater level of understanding before proceeding to an EIA;
- The integration of visual aspects into heritage impact assessment is sought and relation to the landscape pattern and cultural values.

3. DESCRIPTION OF THE RECEIVING ENVIRONMENT AND HERITAGE RESOURCES

The west central interior where the site under investigation is situated is at the southern extremity of the Kalahari, on the north bank of the Orange River near Keimoes.

The region has a sparse but significant precolonial archaeological heritage (e.g. Morris & Beaumont 1991), these often being focused along the river itself or on dunes or in the shadow of inselbergs or ranges of hills such as on the farm Zovoorby within the project area (Smith 1995).

Colonial era traces may occur in association with farming activity.

4. STUDY APPROACH AND METHODOLOGY (inlc. limitations and assumptions)

This is a desktop screening phase report lacking the benefit of a site visit and hence the primary limitation is absence of relevant local information. Hence this report can only be predictive in the broadest of terms. Nevertheless this should assist in scoping and EIA phase follow-up and site visit planning.

Limitations: No local knowledge other than in general, secondary and regional terms.

Assumptions: That patterns pertaining at other sites in the area have relevance for the study site.

5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

Without having visited the site it is impossible to provide much detail at this stage.

The terrain consists of commonage to the west and sparsely vegetated farmland probably essentially grazing camps for sheep/goat farming.

Much of the terrain appears to consist of hard stony ground with little depth of soil while marked dunes and Kalahari sand surfaces occur to the eastern side of the area under consideration. Drainage lines trend southwards towards the Orange River. Prominent topographic features are the ranges of hills within the eastern extent (Blucoso) of the area.

Vegetation being sparse, surface archaeological traces would be fairly to highly visible, particularly in places where the predominant geological processes of recent times have been erosional rather than depositional. Subsurface traces would tend occur in areas where sediments or aeolian sands have accumulated, particularly in downslope areas in drainage lines and along the dunes. The hills potentially provide shelters, with one cave site of high significance being known on Zovoorby (Smith 1995).

6. FINDINGS - SITE SIGNIFICANCE AND ASSESSMENT

6.2. Archaeology

No on-the-ground observations have been made. The screening phase report can only predict what may be present.

It is anticipated that most of the area, particularly older eroded surfaces, will be found to have generally very low density surface scatters of mainly Pleistocene Stone Age material. At Spitskop north of Upington as well as at sites north of the Upington-Keimoes road this material comprises Middle Stone Age and possibly Fauresmith artefacts (McGregor Museum records).

Later Stone Age (LSA) and Ceramic Later Stone Age sites may occur in more recent surfaces and sediments such as the dune areas. As noted already there is a known cave and specularite working with associated Ceramic LSA material in the hills of Zovoorby and other occurrences like it may be found during a systematic survey of the area.

Later Stone Age burials are known from the region and whereas these are known from areas immediately adjacent to the river, they may occur in places further upslope (Morris 1992).

Rock engravings are known to occur in the wider region, e.g. at Biesje Poort north of Kakamas (Morris 1988) but it is not presently known if any would be found in the hills in the study area.

6.3. Built environment and colonial era heritage resources including graves

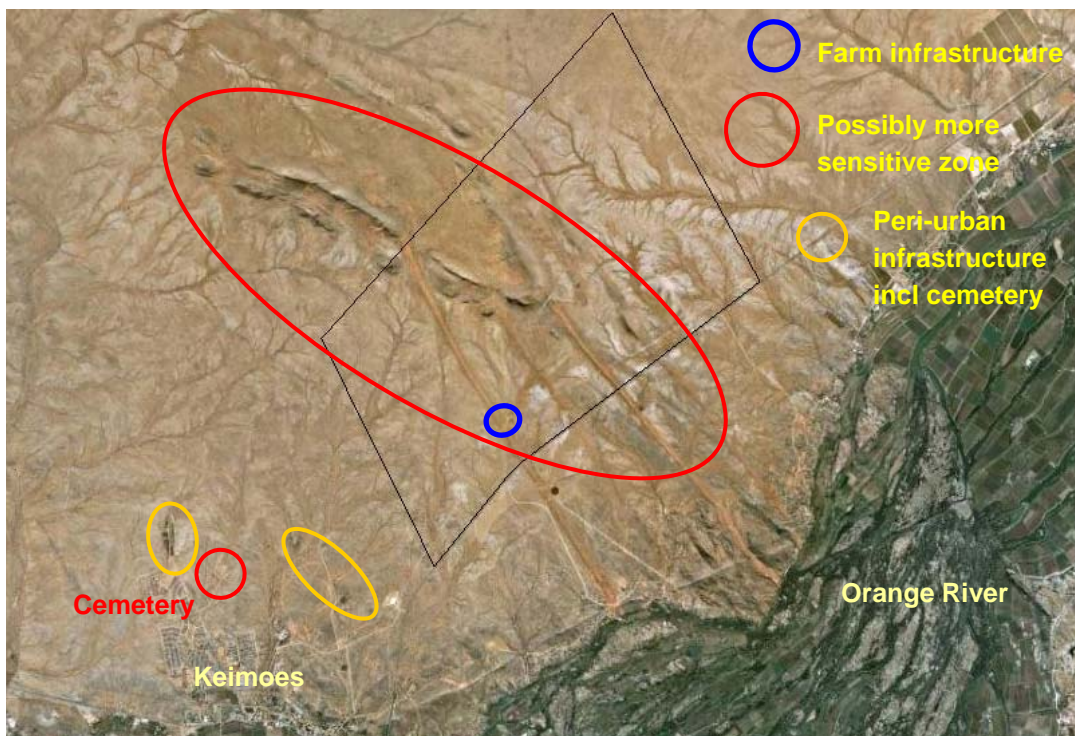
Without having visited the site no definite statements can be made.

On Google Earth limited farm infrastructure in the Blucoso portion seems evident, adjacent to the old road as indicated in the map below. Within the Municipal commonage a range of peri-urban infrastructure features are evident in the form of sewerage works and a cemetery, but little else: there are no indications of older abandoned dwellings for example.

6.4. Sense of place, visual impacts and scenic routes

The N14 from Upington to Keimoes is a tourism route for travellers from Gauteng to Namaqualand, Richtersveld and southern Namibia and the terrain north of the road near Keimoes is locally picturesque. Upon approaching Keimoes, however, the hills and dunes give way to hi-tech farming infrastructure (barns etc) and peri-urban features (including the Oasis substation) so that in that locale pristine landscape visuals have already been compromised.

While much of the area seems unlikely to have significant intangible heritage value, this would need to be verified on the ground. Such values may well inhere in the hills.



7. IDENTIFICATION OF NO-GO AREAS AND BUFFER ZONES, MITIGATION AND CONSERVATION MEASURES

7.1 Archaeological heritage

More sensitive areas might tend to be those along the hills and dunes.

This is subject to on-the-ground verification.

7.2 Un-identified archaeological material, fossils and fossil bone

This report does not assess the possible presence of fossil material. A SAHRA-accredited palaeontologist would be needed to comment. Un-identified archaeological material would be in part documented in the field survey phase and in part predicted where this is expected to occur subsurface.

7.3 Built Environment and landscape

There appear to be no sensitive features of the built environment or the landscape but this would need to be verified during an on-the-ground assessment.

7.4 Graves

There is a possibility that colonial era graves may occur close to the farm infrastructure indicated in the above map, situated beside the old road. However this site is close enough to Keimoes to have resulted in most farm-related interments taking place in a formal urban cemetery.

8. CONCLUSIONS

This screening phase assessment, without physical site visit, can merely point to known regional patterns in heritage and highlight aspects that can be indicated from features seen in Google Earth images. Information exists for a known site (although its precise location needs to be verified on the ground) consisting of a cave in the side of the hills at Zovoorby (Smith 1995).

It is predicted that the more sensitive area within the identified properties would tend to be in the vicinity of the hills and dunes while the Keimoes commonage and other parts of the properties away from the hills most likely have more sparse heritage (specifically Stone Age) resources. The nature and significance of any of these occurrences can only be verified and evaluated during a field survey of the property.

9. REFERENCES

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APPENDIX 1: CONVENTIONS USED TO DETERMINE THE SIGNIFICANCE OF CULTURAL HERITAGE RESOURCES

The following criteria are applied for determining archaeological significance based on field survey of material culture traces in the landscape (*relevant for field assessment as yet to be carried out for the present project*):

In addition to guidelines provided by the National Heritage Resources Act (Act No. 25 of 1999), a set of criteria based on Deacon (nd) and Whitelaw (1997) for assessing archaeological significance has been developed for Northern Cape settings (Morris 2000). These criteria include estimation of landform potential (in terms of its capacity to contain archaeological traces) and assessing the value to any archaeological traces (in terms of their attributes or their capacity to be construed as evidence, given that evidence is not given but constructed by the investigator).

Estimating site potential

Table 1 (below) is a classification of landforms and visible archaeological traces used for estimating the potential of archaeological sites (after J. Deacon nd, National Monuments Council). Type 3 sites tend to be those with higher archaeological potential, but there are notable exceptions to this rule, for example the renowned rock engravings site Driekopseiland near Kimberley which is on landform L1 Type 1 – normally a setting of lowest expected potential. It should also be noted that, generally, the older a site the poorer the preservation, so that sometimes any trace, even of only Type 1 quality, can be of exceptional significance. In light of this, estimation of potential will always be a matter for archaeological observation and interpretation.

Assessing site value by attribute

Table 2 is adapted from Whitelaw (1997), who developed an approach for selecting sites meriting heritage recognition status in KwaZulu-Natal. It is a means of judging a site's archaeological value by ranking the relative strengths of a range of attributes (given in the second column of the table). While aspects of this matrix remain qualitative, attribute assessment is a good indicator of the general archaeological significance of a site, with Type 3 attributes being those of highest significance.

Table 1. Classification of landforms and visible archaeological traces for estimating the potential for archaeological sites (after J. Deacon, National Monuments Council).

Class	Landform	Type 1	Type 2	Type 3
L1	Rocky surface	Bedrock exposed	Some soil patches	Sandy/grassy patches
L2	Ploughed land	Far from water	In floodplain	On old river terrace
L3	Sandy ground, inland	Far from water	In floodplain or near feature such as hill	On old river terrace
L4	Sandy ground, Coastal	>1 km from sea	Inland of dune cordon	Near rocky shore
L5	Water-logged deposit	Heavily vegetated	Running water	Sedimentary basin
L6	Developed urban	Heavily built-up with no known record of early settlement	Known early settlement, but buildings have basements	Buildings without extensive basements over known historical sites
L7	Lime/dolomite	>5 myrs	<5000 yrs	Between 5000 yrs and 5 myrs

Class	Landform	Type 1	Type 2	Type 3
L8	Rock shelter	Rocky floor	Sloping floor or small area	Flat floor, high ceiling
Class	Archaeo-logical traces	Type 1	Type 2	Type 3
A1	Area previously excavated	Little deposit remaining	More than half deposit remaining	High profile site
A2	Shell or bones visible	Dispersed scatter	Deposit <0.5 m thick	Deposit >0.5 m thick; shell and bone dense
A3	Stone artefacts or stone walling or other feature visible	Dispersed scatter	Deposit <0.5 m thick	Deposit >0.5 m thick

Table 2. Site attributes and value assessment (adapted from Whitelaw 1997)

Class	Attribute	Type 1	Type 2	Type 3
1	Length of sequence/context	No sequence Poor context Dispersed distribution	Limited sequence	Long sequence Favourable context High density of arte/ecofacts
2	Presence of exceptional items (incl regional rarity)	Absent	Present	Major element
3	Organic preservation	Absent	Present	Major element
4	Potential for future archaeological investigation	Low	Medium	High
5	Potential for public display	Low	Medium	High
6	Aesthetic appeal	Low	Medium	High
7	Potential for implementation of a long-term management plan	Low	Medium	High

APPENDIX 2: CONVENTIONS USED TO IDENTIFY POTENTIAL RISKS/ IMPACTS OR “NO-GO AREAS” ON HERITAGE RESOURCES

The following criteria can be applied for determining overall significance:

These criteria for description and assessment of environmental impacts are drawn from the EIA Regulations, published by the Department of Environmental Affairs and Tourism (April 1998) in terms of the National Environmental Management Act, 1998 (Act No.107 of 1998).

Potential Impact

This is an appraisal of the type of effect the proposed activity would have on the affected environmental component. Its description should include what is being affected and how it is being affected.

Extent

The physical and spatial scale of the impact is classified as:

- Local: The impacted area extends only as far as the activity, e.g. a footprint.
- Site: The impact could affect the whole, or a measurable portion of the site.
- Regional: The impact could affect the area including the neighbouring farms, the transport routes and the adjoining towns.

Duration

The lifetime of the impact, which is measured in relation to the lifetime of the proposed base.

- Short term: The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than any of the phases.
- Medium term: The impact will last up to the end of the phases, where after it will be entirely negated.
- Long term: The impact will continue or last for the entire operational lifetime of the Development, but will be mitigated by direct human action or by natural processes thereafter.
- Permanent: This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.

*(Impacts on heritage and archaeological resources may be mitigated and hence classed as ‘Short term’ but the original in situ context is usually altered in a ‘Permanent’ way. If the archaeological or heritage significance of the resources in question is considered to be low then the significance of the permanent loss is **low**).*

Intensity

The intensity of the impact is considered here by examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself. These are rated as:

- Low: The impact alters the affected environment in such a way that the natural processes or functions are not affected.
- Medium: The affected environment is altered, but functions and processes continue, albeit in a modified way.
- High: Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

(Archaeological and heritage resources being non-renewable, the intensity of any direct impact would be high by definition but this evaluation would again be ameliorated by the significance attached to the particular resources in question).

Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

- Improbable: The possibility of the impact occurring is none, due either to the circumstances, design or experience.
- Possible: The possibility of the impact occurring is very low, due either to the circumstances, design or experience.
- Likely: There is a possibility that the impact will occur to the extent that provisions must therefore be made.
- Highly Likely: It is most likely that the impacts will occur at some stage of the Development. Plans must be drawn up before carrying out the activity.
- Definite: The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on.

Determination of Significance – Without Mitigation

Significance is determined through a synthesis of impact characteristics, and is an indication of the importance of the impact in terms of both physical extent and time scale. The significance of the impact “without mitigation” is the prime determinant of the nature and degree of mitigation required. Where the impact is positive, significance is noted as “positive”. Significance is rated on the following scale:

- No significance: The impact is not substantial and does not require any mitigation action.
- Low: The impact is of little importance, but may require limited mitigation.
- Medium: The impact is of importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.
- High: The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

Determination of Significance – With Mitigation

Significance is determined through a synthesis of impact characteristics. It is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. In this case the prediction refers to the foreseeable significance of the impact after the successful implementation of the suggested mitigation measures. Significance with mitigation is rated on the following scale:

No significance:	The impact will be mitigated to the point where it is regarded to be insubstantial.
Low:	The impact will be mitigated to the point where it is of limited importance.
Low to medium:	The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels.
Medium:	Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw.
Medium to high:	The impact is of great importance. Through implementing the correct mitigation measures the negative impacts will be reduced to acceptable levels.
High:	The impact is of great importance. Mitigation of the impact is not possible on a cost-effective basis. The impact continues to be of great importance, and, taken within the overall context of the project, is considered to be a fatal flaw in the project proposal. This could render the entire development option or entire project proposal unacceptable.

APPENDIX 3. RELEVANT LEGISLATION

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.

- xxx. *“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 m² 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 m² 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.

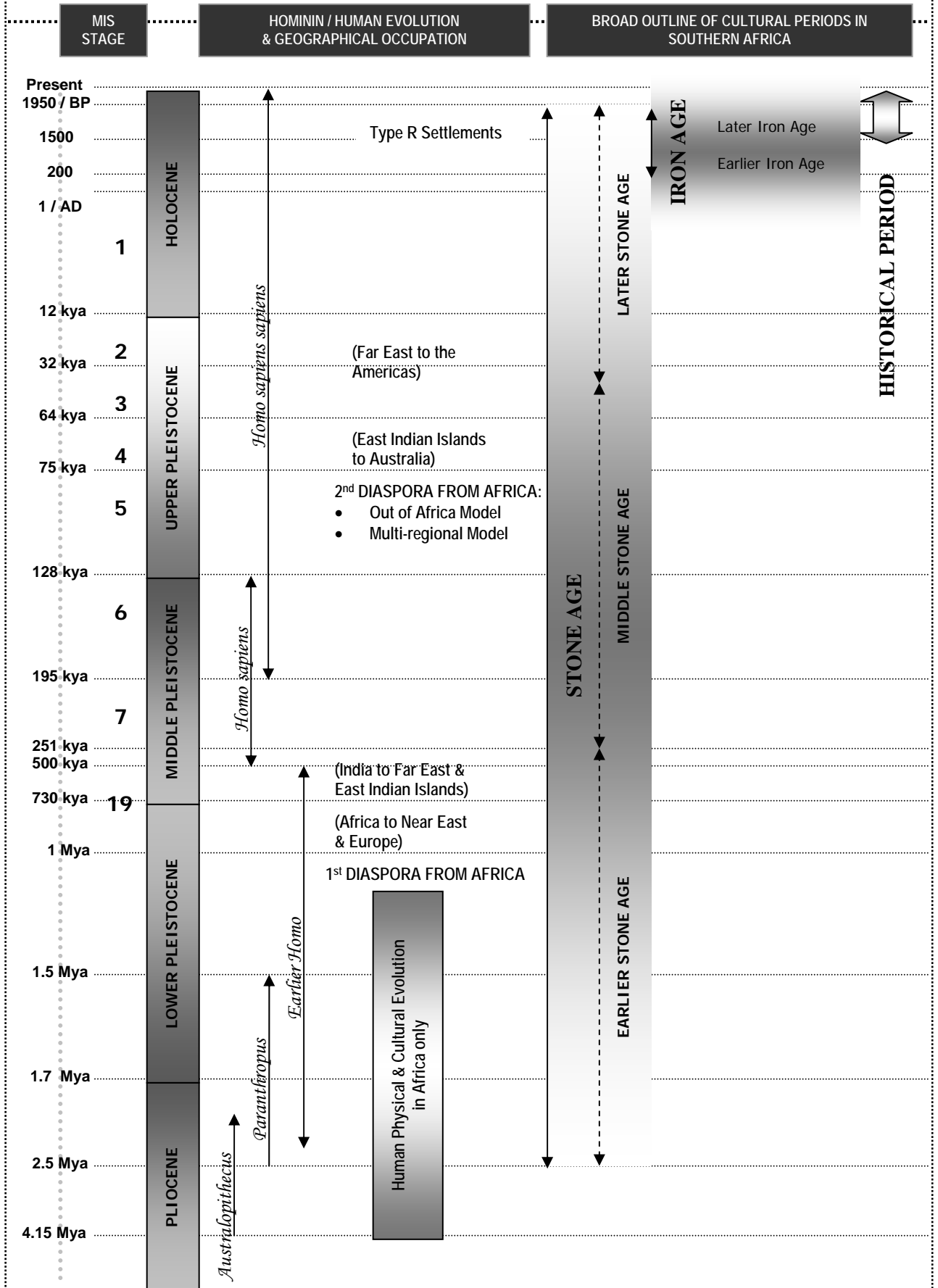
A heritage inspector may, if there is reason to believe that any work is being done or any action is being taken in contravention of this Act or the conditions of a permit issued in terms of this Act, order the immediate cessation of such work or action pending any further order from the responsible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

APPENDIX 4. ILLUSTRATIONS / MAPS

Maps based on Google Earth and with property definition as supplied have been included in the text above.

Appended below is a schematic time line of human physical and cultural evolution in Africa.

Schematic Human Physical and Cultural Evolution in Africa



GLOSSARY of archaeological terms used in this report

Ceramic Later Stone Age – Later Stone Age (see below) sites with pottery.

Colonial era – equates with ‘Historical Period’ in the above chart, essentially post-1500 and referring to initially non-indigenous material culture and evolving local forms.

Fauresmith – a Middle Pleistocene expression of the evolving Stone Age technologies documented by archaeologists in Southern Africa, transitional between the Earlier and Middle Stone Age (see chart above).

Later Stone Age (LSA)– the most recent of the major heuristic subdivisions of the Stone Age in South Africa (see chart above). Continuities have been pointed out between some features of Later Stone Age technology and behaviour and the historically documented material and lived culture of the Khoe-San. Ceramic Later Stone Age – Later Stone Age (see below) sites with pottery.

MSA – Middle Stone Age – one of the major heuristic subdivisions of the Stone Age in South Africa (see chart above).

Pleistocene – a subdivision of geological time preceding the current Holocene epoch.

Precolonial – pre-1500 indigenous material culture and history, often interdigitating with colonial era features (e.g. Type R settlements which were probably contemporary with European colonisation of the Cape but preceded the frontier advance in the interior).

Rock engravings – a subset of South Africa’s heritage of rock art, also known as petroglyphs, typically occurring on exposed rocky hilltops in the central interior of the country.

Specularite working – specularite is a flaky decomposing form of haematite which glitters in sunlight. It was mined (at ‘workings’) in precolonial times and, when crushed and mixed with fat, was used in cosmetic and ritual contexts. Natural occurrences are rare, in rather specific locales, e.g. near Keimoes and Postmasburg, making these sites highly significant.