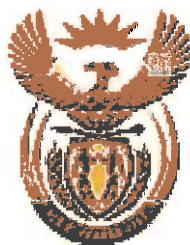


State of Conservation Report
for the
Mapungubwe Cultural Landscape
World Heritage Site
of
South Africa

Submitted
by the Government of the Republic of South Africa

Compiled in collaboration with
South African National Parks (SANParks),

February 2016



PART 1- IDENTIFICATION OF THE PROPERTY

Name of Property: Mapungubwe National Park and World Heritage Site. 1099 REV

State Party and Province(s): South Africa, Limpopo

Criteria: (ii) (iii) (iv) and (v)

PART 11- STATE OF CONSERVATION

1. Introduction

This report is the State Party of South Africa's response to Decision **37 COM 7B.43** of the World Heritage Committee that, amongst other things requested the State Party:

- to submit a minor boundary modification for the buffer zone that clarifies the policies for protecting the property with respect to mining buffer zone and in relation to 'off-set benefits'.
- to provide copies of the final approved Management plan to the World Heritage Centre and to implement the plan with immediate effect.
- to provide further details to the World Heritage Centre for review by the Advisory Bodies on the infrastructure arrangements associated with the underground expansion at the De Beers Venetia Mine, in particular for transport and water supplies, and to provide appropriate Heritage Impact Assessments before any irreversible commitments are made.
- to submit by 1 February 2016, an updated report on the state of conservation of the property and the implementation of the above mentioned requests.

2. To Submit a Minor Boundary Modification for the Buffer Zone/ Protection of the site in relation to mining in the buffer zone and "biodiversity offsets)

The minor boundary modification was submitted for consideration by the 38th session of the World Heritage Committee. The boundary modification was then adopted by the World Heritage Committee at its 38th Session in Doha. The information was relayed to the State Party on the 22nd of July 2014, by the Director of the World Heritage Centre (Ref: **CLT/HER/WHC/PSM/14/LJ/422**) and the subsequent **WHC Decision 38 COM 8B.48**.

Subsequent to the approval of the new buffer zone boundaries, the State Party has through its Department of Mineral Resources published a Notice of Intention to tightly control processing of mining rights for companies which holds prospecting rights and to prohibit further issuing of any prospecting licenses in the new buffer zone (Copy of Notice attached as Annexure 1).

The State Party has concluded the Biodiversity Offsets Agreement (BOA) with the Management Authority and the Mining Company. The Agreement is already being

implemented and its first phase includes the development of site specific management plans, minor conservation work (restorations) at major sites, etc. Full details of the Biodiversity Offsets Agreement can be found in the attached BOA copy and the Implementation Schedule. (Annexures 2 and 3)

2. To provide copies of the final approved Management plan to the World Heritage Centre and to implement the plan with immediate effect

A Copy of the signed Management Plan for the Park was submitted to the World Heritage Centre on 29 January 2013.

The Management Authority for the property, South African National Parks (SANParks) has sufficient human resources to ensure that the Management Plan is implemented. The Staff component involved with the implementation of the Management plan includes a Cultural Heritage Manager, an archaeologist, curator and assistant curator as well as other officials responsible for other functions such as the biodiversity aspects of the park.

Key aspects of the Integrated Management Plan being implemented includes the following: The site database has been developed and the archaeologist updates it periodically from different data sources as well as archaeological surveys. A site inspection schedule has been developed with the five major sites of Mapungubwe Hill, K2, Schroda, Leokwe and Bambandhlalalo being visited monthly.

The Management Authority has also developed a Collections Management Policy as part of the implementation of the Management Plan. The policy will help in the management of the collections in the Interpretation Centre, and in future other collections restituted from other institutions or obtained through further archaeological research. The process of identifying institutions which holds Mapungubwe collections has been initiated by the curator and this is ongoing.

Significant conservation work has been carried out at K2 in the last two years. The dead trees have been removed and the slopes on the excavation pit have been stabilized. Work has begun on the excavation mounds to reduce erosion. In June 2014, the Management Authority carried out a reassessment of K2.



The stabilization process on the excavation pit at K2

3. Venetia Mine Underground Expansion

The Venetia mine is situated on 3000 ha Venetia Farm 103 MS in the Vhembe District of Limpopo province. It is located approximately 25km south of the core of the Mapungubwe Cultural Landscape and World Heritage Site (MCLWHS). The mine was commissioned in 1992, and since the listing of MCLWHS in 2003, it has not increased its mining operation footprint. Consequently the listing took into consideration the existence of Venetia Mine and its associated operational auxiliary infrastructure and assets that were in situ (*MCL Nomination Dossier, 2003*).

Venetia Mine is currently operating as an open pit diamond mine, and has been since 1992. To ensure the sustainability of the mine and to optimise the extraction of diamondiferous kimberlite ore, the mine is currently converting to an underground operation. This “expansion” is more accurately defined as a change in mining method from the conventional open pit mining method to an underground mining method. Due to the depth of the current open pit mine, and the fact that it will be un-economical to mine at depths exceeding 400m a decision was made to change the mining method to an underground operation. This change in mining method will NOT increase the size of the current disturbed mining footprint and will have a significant impact on the reduction in the amount of waste rock that is generated from mining. The stripping ratio of the underground mine is estimated to be 50 tons of ore to 1 ton of waste, which is significantly less waste than the open pit mining methods.

The underground mining method will require certain infrastructure to be constructed to access the diamond bearing ore underground. The development site for the underground infrastructure was chosen due to its proximity to the open pit and the

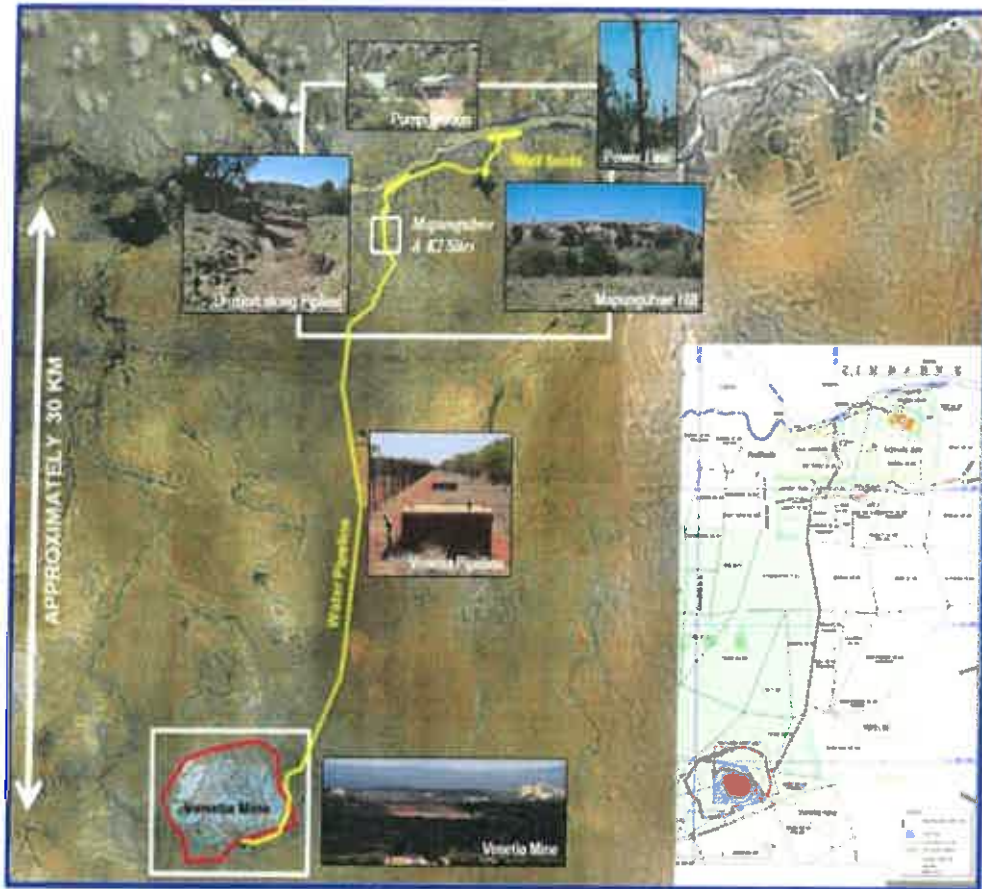
main kimberlite resource. The current disturbed mining area equates to 2200 hectares and the underground development site is approximately 27 hectares. The underground site has been constructed in a previously disturbed area, and will consist of 2 vertical shafts and a decline shaft. Once the ore is mined underground it will be brought to surface where it will be treated through the current treatment plant, and both mineral residue facilities will handle the coarse residue and fines residue without exceeding the current mine boundaries.

The diagram below depicts the underground site:



The underground mining “expansion” is no more than a change in mining method and will not have any impact on the current disturbed footprint of the mine.

De Beers Consolidated Mines like any mining company in South Africa is required to carry a number of feasibility studies if they are to embark on new developments outside the already issued operational licences. A number of studies were carried out; Concept studies (2008), Pre-feasibility study (2009) and Feasibility studies (2010). As part of the Feasibility studies, Environmental Impact Assessment (EIA) studies, Environmental Management Programme (EMP) studies were conducted and these also included the required specialist studies on the biophysical and socioeconomic conditions of the study area and Stakeholder engagement and Public Participation exercises. As part of the EIA and EMP authorisation for the Underground Mining Project, a Heritage Impact Assessment study was also undertaken. Subsequent to the submission of the different reports, relevant Environmental Authorisations were issued.



Map to show relationship of Venetia Mine with the major sites in Mapungubwe WHS

Venetia Mine owns and operates various infrastructures related to the pumping and conveyance of water to the mine within the Mapungubwe WHS. With the change in mining method, there will be no further requirements for the increase in water consumption at the mine, therefore, the current infrastructure within the Mapungubwe WHS will service the underground mine. The main consumer of water on the mine is the treatment plant, where the kimberlite ore is crushed and washed to liberate the diamonds, the underground mine will be using the same treatment plant thus no increase in water will be required.

The State Party brings to the attention of the World Heritage Centre that existing infrastructure currently located in different sections of the mine would be utilised to support the proposed underground mining venture. There will be however some minor upgrades and/or modifications required ensuring compatibility with underground mining (DBCM Venetia EIAR: ERM, 2012):

- Primary crusher;
- Access roads and haul roads;
- Waste rock deposit (WRD) and associated ad hoc activities;
- Earth moving machinery (EMV) and engineering workshop;
- Mining office block and control room;
- Pit services workshops and office block;
- Explosives magazine;
- Core shed; and

- Wash bays

To eliminate the visual effects caused by the exposed water supply pipeline and to address the Heritage Impact Assessment recommendations, Venetia Mine in collaboration with SANParks embarked on the water pipeline rehabilitation project. The pipeline rehabilitation report is attached as Annexure 4.

The existing water abstraction systems from the Limpopo River will be maintained and as will be highlighted below albeit at a lower level.

The State Party emphasizes that the underground mining will be implemented within the existing mining footprint and will have the following positive effects;

- Will result in the decline in the amount of water consumed during operations. This will have a positive impact on the riverine vegetation.
- Will see a significant reduction in noise pollution. This in turn will reduce noise pollution in the buffer zone and help maintain the MCLWHS OUVs by reducing indirect threat from noise pollution to the (World Heritage Site) WHS's OUVs that relate to the sense of place and site setting.
- Dust pollution impact assessment study conducted as part of the EIA and EMP for the underground mining project concluded that converting the mine from open cast to underground will significantly reduce the threats of dust pollution. This in turn reduces the potential threat of air quality pollution by reducing dust fall-out in the immediate buffer zone region, which protects the MCLWHS OUVs
- Will significantly reduce the amount of waste that will be generated from a projected ratio of 1:15 (*1 Metric Tonne of kimberlitic ore to 15 Metric Tonnes of waste rock material*) to as low as 50:1. This in turn will significantly reduce the estimated threat of escalating visual impact close to the buffer zone of the MCLWHS that would result from increasing waste earth material from the mine.
- Reduction of waste material generation from the mine would also mean reduced demand for space to stockpile the material. This will further arrest any further increase in the immediate visual impact of the mine to the surrounding MCL buffer zone.
- It will reduce surface land disturbance, which in turn will reduce the threat of scarring landscape neighbouring the MCL buffer zone. This also provides an opportunity for the mine to initiate early land restoration and Waste Rock Dump (WRD) rehabilitation programs for WRD areas that will no longer be needed for future operations. This will partially restore the visual aesthetics of the environment neighbouring the buffer zone region from where the current Waste Rock Dumps are visible.
- Overall, the carbon footprint of the proposed underground operation is less than 40% of the footprint of an extended open pit mine.

Siyathembana Trading 293 (Pty) Ltd was contracted by DBCM to monitor the impact of the proposed consolidation of existing activities within the existing mining footprint on known and unknown archaeological sites. A monitoring report which represents the results of archaeological monitoring carried to ensure that heritage assets within the premises of Venetia Mine and those within the core of the listed property are sustainably protected is attached as Annexure 5.

The HIA recommended that the sites to be affected by the consolidation of existing activities and those that lie too close to the Mining Right area must be mitigated to generate important information on the Mapungubwe Cultural Landscape. A report on the Mitigation of archaeological sites report is attached as Annexure 6.

NB. It should also be noted that the Venetia Mine now falls way outside of the modified buffer zone.

PART III - OTHER CONSERVATION ISSUES

PART IV

- 1. In conformity with paragraph 172 of the Operational Guidelines, please describe any potential major restorations, alterations and/or new construction(s) within the protected area (core and buffer zone and/or corridors) that might be envisaged.**

There are no major restorations, alterations and/or new construction that will take place within the property. There will be however minor restorations especially on Bambandhlanalo dry stone walls as part of the Biodiversity Offsets Agreement. These will be however on small collapsed sections between standing walls. The restorations will be according to best practise, and expertise developed over years carrying-out such restorations at Great Zimbabwe World Heritage Site will be used. The restorations will not include any new materials, will be documented and reversible.

- 2. Annexure**

- DMR Gazette Notice
- Offset Agreement
- Offset Schedule for Year 1
- Pipeline rehabilitation report
- Monitoring of archaeological sites report
- Mitigation of archaeological sites report

AGREEMENT

ENTERED INTO BETWEEN

**THE GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA
IN ITS DEPARTMENT OF ENVIRONMENTAL AFFAIRS**

(Hereinafter referred to as "the Department")

Herein represented by **Ms Judy Beaumont**
in her capacity as: **Acting Director-General**
and duly authorised to enter into this Agreement

And

COAL OF AFRICA LIMITED

With Registration No.: **ACN 008 905 388**

(Hereinafter referred to as "CoAL")

Herein represented by **Mr David Brown**
in his capacity as: **Chief Executive Officer**
and duly authorised to enter into this Agreement

And

LIMPOPO COAL COMPANY PROPRIETARY LIMITED

With Registration No.: **2005/006072/07**

(Hereinafter referred to as "LCC")

Herein represented by **Mr David Brown**
in his capacity as: **Company Representative**
and duly authorised to enter into this Agreement

And

SOUTH AFRICAN NATIONAL PARKS

Established in terms of section 5 of the National Parks Act, 1976 (Act No. 57 of 1976)

(Hereinafter referred to as "SANParks")

Herein represented by **Mr Kuseni Dlamini**
in his capacity as: **Chairperson of SANParks Board**
and duly authorised to enter into this Agreement

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WHEREBY IT IS AGREED AS FOLLOWS:

1. DEFINITIONS

1.1. For the purpose of this Agreement, unless the context indicates otherwise, the following definitions are set out for the terms indicated below -

- 1.1.1. **"this Agreement"** means this Agreement together with all schedules and appendices attached hereto or referred to herein;
- 1.1.2. **"Bank Account"** means a separate, designated bank account, approved by the Auditor General, contemplated in terms of section 188 of the Constitution of the Republic of South Africa, 1996;
- 1.1.3. **"CoAL"** means Coal of Africa Limited, a company incorporated in accordance with the laws of the Commonwealth of Australia under Registration No. ACN008905388, and registered as an external profit company according to the laws of the Republic of South Africa under registration number 2012/051325/10;
- 1.1.4. **"Department"** means the Department of Environmental Affairs of the Government of the Republic of South Africa;
- 1.1.5. **"Funds"** means the capital funds and operating costs associated with the implementation of this Agreement as contemplated in clause 3.2 read with Annexure "A", and **"Funding"** shall bear the same meaning;
- 1.1.6. **"LCC"** means Limpopo Coal Company (Pty) Ltd with registration number 2005/006072/07, a private company incorporated in terms of the companies law of the Republic of South Africa;
- 1.1.7. **"Mine"** means Vele Colliery;
- 1.1.8. **"the Parties"** means the Department, CoAL, LCC and SANParks, and a **"Party"** means either of them;
- 1.1.9. **"SANParks"** means the South African National Parks established in terms of section 5 of the National Parks Act, 1976 (Act No. 57 of 1976) and continuing to exist in terms of section 54(1) of the National Environmental Management: Protected Areas Act 57 of 2003 (as amended);

- 1.1.10. **"Signature Date"** means the date on which the last signing Party signs this Agreement; and
- 1.1.11. **"Steering Committee"** means a steering committee established in terms of clause 6.
- 1.2. Expressions defined in this Agreement shall bear the same meanings in the annexures to this Agreement, unless expressly stated otherwise in this Agreement.
- 1.3. In this Agreement:
- 1.3.1. the singular shall include the plural and vice versa; and
- 1.3.2. unless otherwise indicated, any meaning ascribed to a word, phrase or expression in this Agreement, shall bear the same meaning wherever it appears thereafter.
- 1.4. This Agreement shall bind the Parties and their respective successors-in-title.
- 1.5. In the event that any of the terms of this Agreement are found to be invalid, unlawful or unenforceable, such term will be severable from the remaining terms, which will continue to be valid and enforceable.
- 1.6. In the event of any conflict between the main body of this Agreement and any Annexures hereto, the provisions of the main body of this Agreement will prevail between the Parties.

2. **TERM OF LONG-TERM COLLABORATION**

This Agreement shall commence on the Signature Date and endure until terminated in terms of clause 7.

3. **AREAS OF LONG-TERM COLLABORATION**

- 3.1. For the purpose of:
- 3.1.1. strengthening cooperation between the Parties towards the conservation and sustainable development of the Mapungubwe Cultural Landscape (MCL) World Heritage Site ("**WHS**");
- 3.1.2. maintaining the integrity of the WHS, and ensuring that the negative impacts of development are avoided, minimised or remedied in the pursuit of sustainable development; and

- 3.1.3 promoting the development of the MCL WHS so that it benefits the receiving environment, the local economy and resident communities, throughout the Life Of Mine (LOM), the Parties have agreed to co-operate towards the fulfilment of these long-term goals (the "**Long-term Goals**").
- 3.2. The fulfilment of the Long-term Goals during the course of the LOM will, *inter alia*, require access to substantial capital resources. LCC agrees to provide the Funds required to fulfil the Long-term Goals save that the Parties agree that the exact timing of future allocations of the Funds will be dependent on the continued operations of the Vele Colliery.
- 3.3. The Parties will use their respective reasonable endeavours to achieve the Long-term Goals through the implementation of specific projects in five distinct phases over the estimated LOM in accordance with the Indicative Programme, attached hereto as **Annexure "A"**.
- 3.4. The Steering Committee (contemplated in clause 6) will agree on the detail of the projects in order to ensure that they are aligned to current and future SANParks priorities, both in terms of prioritising and budget allocation, and, to this end, the Steering Committee will develop business plans for each of the projects identified in **Annexure "A"**.
- 3.5. It is recorded that the Steering Committee shall at all times retain the right to vary any or all of the projects and activities if it is necessary for the fulfilment of the Long-term Goals. Such variation shall become effective if agreed to by all the Parties in writing.
4. **FUNDING**
- 4.1. Notwithstanding the indicative amounts and dates provided in **Annexure "A"**, budgets shall be prepared and agreed by the Steering Committee prior to each phase contemplated in **Annexure "A"**.
- 4.2. The Funds shall be payable to SANParks into the Bank Account in the amounts and on the dates to be agreed between the Parties.
- 4.3. CoAL and/or LCC reserve the right to structure the provision of Funding in the most tax efficient manner.
- 4.4. The Funds shall be used exclusively for the implementation of this Agreement and shall at all times be utilised in accordance with each budget approved by the Steering Committee.

- 4.5. Any deviation by SANParks of 10% (ten percent) or more from any agreed budget must be discussed and signed off by the Steering Committee. Failure to obtain permission from the Steering Committee as aforesaid shall constitute a material breach of this Agreement.
- 4.6. SANParks shall be obliged to furnish CoAL and the Department with monthly expenditure and revenue statements by no later than the 10th day of the month following the preceding relevant month. The aforesaid statements shall contain information indicating the use of the Funds and a written and signed certificate by the SANParks representative on the Steering Committee certifying that such Funds were used for the implementation of this Agreement.
- 4.7. SANParks shall maintain proper books and records of account so as to keep a record of expenditure.
- 4.8. It is specifically recorded and agreed that the CoAL/ LCC shall be entitled to appoint a firm of auditors to audit the expenditure and revenue statements referred to in clause 4.6 and in this regard SANParks undertakes to cooperate in all respects with the requests of such auditing firm.

5. OBLIGATIONS

- 5.1. Each Party shall at all times avoid a conflict of interest between this Agreement and its own interests and should either Party believe that such a conflict may exist, such Party shall immediately inform the others thereof in writing and the Parties shall use their reasonable endeavours to resolve such conflict in good faith and in the best interests of this Agreement.
- 5.2. Each Party agrees to co-operate fully and in good faith and to place at the disposal of the other Party the benefits of its experience and technical knowledge, and to use its best endeavours to achieve the objects of this Agreement.
- 5.3. Each Party shall carry out, diligently and punctually, all the work functions and tasks that such Party is allocated in terms of this Agreement or is obliged to carry out and perform in terms of this Agreement.
- 5.4. The Parties:
- 5.4.1. shall, on a regular basis, keep each other informed of and consult on matters of common interest, which in their opinion are likely to lead to mutual collaboration;
- 5.4.2. shall, at such intervals as deemed appropriate, convene meetings to review the progress of activities being carried out under this Agreement and to plan future activities;

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- 5.4.3. may invite each other to send observers to meetings or conferences convened by them or under their auspices in which, in the opinion of either Party, the other may have an interest. Invitations shall be subject to the procedures applicable to such meetings or conferences; and
- 5.4.4. shall be responsible for their acts and omissions in connection with this Agreement and its implementation.

6. STEERING COMMITTEE

- 6.1. Each Party is entitled to appoint 3 (three) members (the "**Representatives**") to a Steering Committee responsible for implementation of this Agreement.
- 6.2. In pursuit of the objectives of this Agreement, the Steering Committee shall:
 - 6.2.1. agree on the thematic area and programmes for the period under review to be implemented;
 - 6.2.2. quarterly and/or at the request of either Party to:
 - 6.2.2.1. exchange views with regards to the progress of their collaboration and the performance of their respective obligations under this Agreement as well as other pertinent matters, and
 - 6.2.2.2. furnish each other with all necessary information as may be reasonably requested with regards to the progress and general status of the work of their collaboration;
 - 6.2.3. promptly inform each other of any factor which may interfere or is likely to interfere with the progress of their collaboration, the accomplishment of their collaboration, any related matter, and in particular the performance of either Party of its obligation in terms of this Agreement; and
 - 6.2.4. determine and, if need be, review the technical, financial, personnel and organisational requirements in respect of the planning, management and control of their collaboration in order to ensure effective and efficient execution and maintenance of their collaboration as well as matters connected thereto.
- 6.3. The Steering Committee shall meet at such intervals, times and places as may be determined by the Parties from time to time.
- 6.4. Save as provided for in this Agreement, the Steering Committee shall determine its own procedural rules.

6.5. The Steering Committee shall have plenary powers in respect of the following non-exhaustive list of matters:

6.5.1. amendment to the strategy contemplated in **Annexure "B"**;

6.5.2. the preparation and agreement of budgets; and

6.5.3. statutory and regulatory matters.

7. **BREACH AND TERMINATION**

7.1. Should any Party ("**Defaulting Party**") breach any provision of this Agreement and fail to remedy such breach within 5 (five) Business Days after receiving written notice requiring it to do so from another Party (the "**Innocent Party**"), then the Innocent Party shall be entitled, without prejudice to its other rights in law including any right to claim damages, to claim immediate specific performance of the Defaulting Party's obligations, or in the case of a material breach of a provision going to the root of this Agreement, to cancel this Agreement by giving written notice to that effect to the Defaulting Party, in which circumstances, the cancellation shall be effective on the last Business Day in the calendar month in which the aforesaid written notice is given.

7.2. This Agreement may be modified or terminated at any time by mutual written agreement between the Parties.

7.3. This Agreement shall immediately terminate at the end of the Life of Mine.

7.4. The termination of this Agreement for whatever reason, shall not affect the provisions which specifically provide for their survival at the termination or which by their nature are intended to survive the termination of this Agreement independently.

7.5. After the termination of this Agreement in terms of this clause, the relationship between the Parties with respect to any uncompleted project, shall continue to be governed by the terms and conditions of this Agreement, until the completion of such project.

7.6. In the event of termination of this Agreement, the Department, after consultation with other Parties, may designate another entity to continue implementing the Long-term Goals.

8. **DISPUTE RESOLUTION**

8.1. A dispute which arises in regard to:

- 8.1.1. the interpretation of;
- 8.1.2. the carrying into effect of;
- 8.1.3. any of the Parties' rights and obligations arising from;
- 8.1.4. the termination or purported termination of or arising from the termination of; or
- 8.1.5. the rectification or proposed rectification of this Agreement, or out of or pursuant to this Agreement or on any matter which in terms of this Agreement requires agreement by the Parties, (other than where an interdict is sought or urgent relief may be obtained from a court of competent jurisdiction),

shall be resolved amicably by the Parties within ten (10) Business Days of dispute, failing which the dispute shall be submitted to and decided by arbitration.

8.2. That arbitration shall be held:

- 8.2.1. with only the Parties and their representatives present thereat; and
- 8.2.2. at Sandton, South Africa.

8.3. It is the intention that the arbitration shall, where possible, be held and concluded in 21 (twenty one) Business Days after it has been demanded. The Parties shall use their best endeavours to procure the expeditious completion of the arbitration.

8.4. Save as expressly provided in this Agreement to the contrary, the arbitration shall be subject to the arbitration legislation for the time being in force in South Africa.

8.5. There shall be 1 (one) arbitrator who shall be, if the question in issue is:

- 8.5.1. primarily an accounting matter, an independent chartered accountant with not less than 10 (ten) years' experience as a chartered accountant;
- 8.5.2. primarily a legal matter, a practising senior counsel or, alternatively, a practising attorney of not less than 15 (fifteen) years' experience as an attorney; or
- 8.5.3. any other matter, a suitably qualified person.

- 8.6. The appointment of the arbitrator shall be agreed upon by the Parties in writing or, failing agreement by the Parties within 10 (ten) Business Days after the arbitration has been demanded, at the request of any of the Parties shall be nominated by the Chairman for the time being of the Arbitration Foundation of South Africa (or its successor body in title) ("AFSA"). If that person fails or refuses to make the nomination, any Party may approach the High Court of South Africa to make such an appointment. To the extent necessary, the court is expressly empowered to do so.
- 8.7. The Parties shall keep the evidence in the arbitration proceedings and any order made by any arbitrator confidential unless otherwise contemplated herein.
- 8.8. The arbitrator shall be obliged to give his award in writing fully supported by reasons.
- 8.9. The provisions of this clause are severable from the rest of this Agreement and shall remain in effect even if this Agreement is terminated for any reason.
- 8.10. The arbitrator shall have the power to give default judgment if any Party fails to make submissions on due date and/or fails to appear at the arbitration, which judgment the arbitrator shall be entitled to rescind on good cause shown in terms of the legal principles applicable to rescission of judgments.
- 8.11. Nothing herein contained shall be deemed to prevent or prohibit a Party from applying to the appropriate court for urgent relief or for judgment in relation to a liquidated claim.

9. NOTICES AND ADDRESSES

- 9.1. The Parties choose as their *domicilia citandi et executandi* for all purposes under this Agreement, whether in respect of notices or other documents or communications of whatsoever nature (including the exercise of any option), the following addresses –

9.1.1. CoAL

Physical: South Block, Summercorn Office Block, Cnr Rockery Land and Sunset Avenue, Lonehill, Fourways 2191

Postal Address: P O Box x69517, Bryanston, 2021

Tel: 27 10 003 8000

Fax 27 11 388 1380

E-mail: david.brown@coalofafrica.com

9.1.2. **LCC**

Physical: South Block, Summercorn Office Block, Cnr Rockery Land and Sunset Avenue, Lonehill, Fourways 2191

Postal Address: P O Box x69517, Bryanston, 2021

Tel: +27 10 003 8000

Fax: +27 11 388 1380

E-mail: Florence.Duval@coalofafrica.com

9.1.3. **The Department**

Physical: Environment House, 473 Steve Biko Road, Arcadia

Postal Address: Private Bag X447, Pretoria, 0001

Tel: (012) 399 3091

Fax: (012) 359 3636

E-mail: fmketeni@environment.gov.za

9.1.4. **SANParks**

Physical: 643 Leyds Street, Mucklenuek, Pretoria, 0002

Postal Address: P.O. Box 787, Pretoria, 0001

Tel: (012) 426 5000

Fax: (012) 343 0155

E-mail:

9.2. Any notice or communication required or permitted to be given in terms of this Agreement shall be valid and effective only if in writing but it shall be competent to give notice by telefax or e-mail.

9.3. Either Party may by notice to any other Party change the physical address chosen as its *domicilium citandi et executandi vis-à-vis* that Party to another physical address provided that the change shall become effective *vis-à-vis* that addressee on the 5th (fifth) business day from the receipt of the notice by the addressee.

9.4. Any notice to a Party –

9.4.1. sent by prepaid registered post (by airmail if appropriate) in a correctly addressed envelope to it at an address chosen as its *domicilium citandi et executandi* to which post is delivered shall be deemed to have been received on the 5th (fifth) business day after posting (unless the contrary is proved);

- 9.4.2. delivered by hand to a responsible person during ordinary business hours at the physical address chosen as its *domicilium citandi et executandi* shall be deemed to have been received on the day of delivery;
- 9.4.3. sent by telefax to its chosen telefax number, shall be deemed to have been received on the date of despatch (unless the contrary is proved); or
- 9.4.4. sent by e-mail to its chosen e-mail address, shall be deemed to have been received on the date of despatch (unless the contrary is proved).
- 9.5. Notwithstanding anything to the contrary herein contained a written notice or communication actually received by a Party shall be an adequate written notice or communication to it notwithstanding that it was not sent to or delivered at its chosen *domicilium citandi et executandi*.
10. **WHOLE AGREEMENT**
- 10.1. This Agreement constitutes the whole agreement between the Parties relating to the subject matter hereof and supersedes any other discussions, agreements and/or understandings regarding the subject matter hereof.
- 10.2. No amendment or consensual cancellation of this Agreement or any provision or term hereof or of any agreement, bill of exchange or other document issued or executed pursuant to or in terms of this Agreement and no settlement of any disputes arising under this Agreement and no extension of time, waiver or relaxation or suspension of any of the provisions or terms of this Agreement or of any agreement, bill of exchange or other document issued pursuant to or in terms of this Agreement shall be binding unless recorded in a written document signed by the Parties (or in the case of an extension of time, waiver or relaxation or suspension, signed by the Party granting such extension, waiver or relaxation). Any such extension, waiver or relaxation or suspension which is so given or made shall be strictly construed as relating strictly to the matter in respect whereof it was made or given.
- 10.3. No extension of time or waiver or relaxation of any of the provisions or terms of this Agreement shall operate as an estoppel against any Party in respect of its rights under this Agreement, nor shall it operate so as to preclude such Party thereafter from exercising its rights strictly in accordance with this Agreement.
- 10.4. To the extent permissible by law no Party shall be bound by any express or implied term, representation, warranty, promise or the like not recorded herein, whether it induced the contract and/or whether it was negligent or not.

11. COUNTERPARTS

This Agreement may be executed in several counterparts, which together shall constitute one and the same instrument.

12. GOVERNING LAW

This Agreement shall be governed by and construed in accordance with the laws of the Republic of South Africa and all disputes, actions and other matters relating thereto shall be determined in accordance with such laws.

Signed by the Parties and witnessed on the following dates and at the following places respectively:

For: CoAL

Signature:



who warrants that he / she is duly authorised thereto

Name:

DAVID BROWN

Date:

8-10-2014

Place:

For: LCC

Signature:



who warrants that he / she is duly authorised thereto

Name:

DAVID BROWN


Date:

8-10-2014

Place:



For: **SANParks**

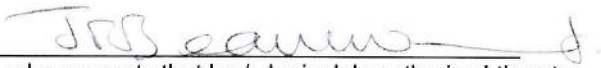
Signature: 
who warrants that he / she is duly authorised thereto

Name: KUSENI DLAMINI

Date: 08.10.2014

Place: CENTURION

For: **THE DEPARTMENT (DEA)**

Signature: 
who warrants that he / she is duly authorised thereto

Name: JUDY BEAUMONT

Date: 8 Oct 2014.

Place: PRETORIA, CERIBE

GOVERNMENT NOTICE

DEPARTMENT OF MINERAL RESOURCES

No. 718

12 September 2014

MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 [ACT NO 28 OF 2002]

PROHIBITION OR RESTRICTION OF PROSPECTING OR MINING IN TERMS OF SECTION 49[1] OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002[ACT NO 28 OF 2002]

I, Adv NGOAKO RAMATLHODI, in my capacity as Minister of Mineral Resources, acting in terms of section 49[1] of the Mineral and Petroleum Resources Development Act, 2002 [Act No 28 of 2002], and having regard to the national interest to protect the sensitive environment of areas within the buffer zone of the Mapungubwe World Heritage Site hereby make my intention known to **firstly**, restrict the granting of any mining right to the extent that the mining action, activity or process concerned must first be modified in such a manner that there shall be no physical impact whatsoever on the surface of the land, and **secondly**, that no further applications for prospecting rights or mining permits will be granted in respect of the following farms:

FARM NAME	FARM NAME	FARM NAME
Krone 104 MS	Edmonsborg 32 MS	Bouwlust 175 MS
Ratho 1 MS	Machete 29 MS	Hartjesveld 174 MS
Breslau 2 MS	Flora 64 MS	Koningsmark 117 MS
Parma 5 MS	Hackthorne 30 MS	Rosslynlee 172 MS
Montrow 6 MS	Luna 61 MS	Giesendam 173 MS
Vergenoegd 7 MS	Oriental 60 MS	Bruntsfield 202 MS
Koedoeskop 8 MS	Faure 33 MS	Sharlee 170 MS
Somerville 9 MS	Hartbeestfontein 35 MS	Goeree 168 MS
Princess Royal 10 MS	Janberry 44 MS	Erfrust 123 MS
Pont Drift 12 MS	La Reve 39 MS	Weipe 47 MS
Modena 13 MS	Cerberus 38 MS	Dunsapie 169 MS
Balerno 18 MS	Sardinia 43 MS	Zonsbeek 167 MS
Arcadia 74 MS	Hamilton 41 MS	Landbou 171 MS
Donkin 72 MS	Coila 58 MS	Lizzulea 62 MS
Evangelina 71 MS	Glen Avon 57 MS	Athens 31 MS
Halcyon 21 MS	Schietfontein 55 MS	Alyth 118 MS
Regina 67 MS	Kongo 53 MS	Newmark 121 MS
Melisande 67 MS	Lucca 54 MS	Bismarck 116 MS
Hilda 23 MS	Kilsyth 42 MS	Skutwater 115 MS
Anglican 24 MS	Horison 56 MS	Katina 110 MS
Blyklip 25 MS	D'Eresby 52 MS	
Patricia 164 MS	Kilgour 176 MS	

All abovementioned properties are in the Limpopo Province.

Relevant stakeholders are hereby invited to submit their presentations in writing to:

The Regional Manager
Limpopo Region
Department of Mineral Resources
Private Bag X9467
Polokwane 0700
Tel. No: [015]287 4700
Fax No: [015]287 4769

The owners, occupiers or person in control of the relevant land are also called upon to furnish the Department of Mineral Resources with their particulars at the abovementioned address.

Written representations must be received within a period of 30 days after the publication of this notice.

 06/08/2014

ADV. NGOAKO RAMATHLODI, MP

MINISTER OF MINERAL RESOURCES

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Mitigation of archaeological sites to be impacted by the consolidation of existing activities at Venetia Diamond Mine, near Alldays, Musina, Limpopo Province

Authors: 1. Shadreck Chirikure Ph.D. (UCL), Principal Investigator, ASAPA Professional
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Management Specialist



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Vorna Valley, Midrand, 1686, Johannesburg

1 Technical and Executive Summaries

Table 1: Technical Summary

Property details	
Province	Limpopo
Magisterial District	Musina
Topo-cadastral map	2229AD
Coordinates	South 22 27 26.2, East 29 18 17.5
Closest town	Alldays, Limpopo Province
Farm name	Venetia 104MS

Development criteria in terms of Section 38(1) of the NHR Act	Yes	No
Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length		
Construction of bridge or similar structure exceeding 50m in length		
Development exceeding 5000 sq m	Yes	
Development involving three or more existing erven or subdivisions		
Development involving three or more erven or divisions that have been consolidated within past five years		
Rezoning of site exceeding 10 000 sq m		
Any other development category, public open space, squares, parks, recreation grounds		

Development	
Description of development	Consolidation of existing activities at the De Beers owned Venetia Diamond Mine
Project name	Venetia Diamond mine
Developer	De Beers Consolidated Mines
Heritage consultant	Siyathembana Trading 293 Pty
Purpose of the study	Mitigation and rescue excavations of sites to be affected by the consolidation of existing operations at Venetia Diamond Mine

Land use	
Previous land use	Agriculture
Current land use	Diamond mining, agriculture, nature reserve

Executive Summary

This report presents the mitigation of sites to be affected by the consolidation of existing activities at the De Beers owned Venetia Diamond Mine, situated about 80 kilometers west of Musina, and about 40 kilometres east of Alldays in Limpopo Province (Figure 1). Venetia Diamond Mine is located at least twenty kilometers to the south of the Mapungubwe National Park and World Heritage site. Between Venetia Diamond mine and the World Heritage site is a 36000 ha large Venetia Limpopo Nature Reserve governed by a very strict code of conduct (Venetia Limpopo Nature Reserve Management Plan 2012). This forms part of the buffer zone for the Mapungubwe National Park and World Heritage Site. It must however, be pointed out that Venetia Diamond Mine has a long standing historical relationship with the World Heritage site. The mine was established in 1992 and thus predates the listing of Mapungubwe as a UNESCO World Heritage site.

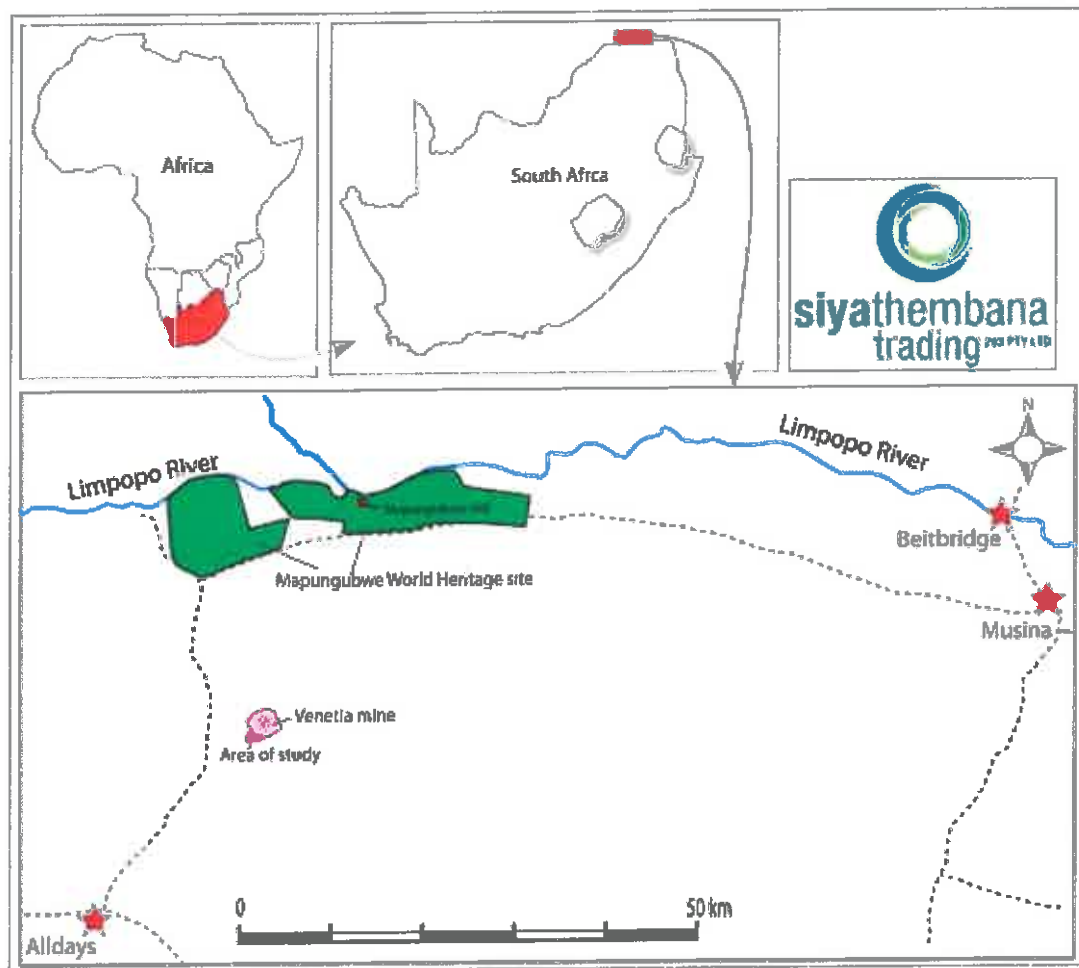


Figure 1 shows the location of Venetia Mine in relation to Musina and Alldays

Between 2009 and 2012, De Beers Consolidated Mines, the owners of Venetia Diamond Mine proposed a series of activities including conversion from open cast to underground mining and consolidation of existing activities to achieve fit for purpose use of assets so as to prolong the life of the mine beyond 2045 and to reduce the mine's impact on the environment (ERM 2012). The Department of Environmental Affairs requested a broad based Heritage Impact Assessment following ICOMOS Guidelines and the provisions of the National Heritage Resources Act (Siyathembana 2013). This was motivated by the need to consider all direct and indirect impacts and their cumulative effect to ensure that the Outstanding Universal Value of Mapungubwe World Heritage site was not compromised (DEA Terms of Reference 2012). The resulting HIA was circulated to key stakeholders such as ICOMOS while UNESCO also carried out a site

inspection visit at Venetia in 2014. The HIA recommended that the sites to be affected by the consolidation of existing activities and those that lie too close to the Mining Right area must be mitigated to generate important information on the Mapungubwe Cultural Landscape as broadly defined. The main results from the mitigation are as follows:

1. The excavated sites do not have much archaeological deposit (maximum depth is 20cm)
2. The archaeological deposit has very little material culture, mostly plain pottery
3. The sites belong to the Late Iron Age
4. The information value of the sites is very low

The main recommendation is that the consolidation of existing activities by De Beers does not pose a threat to these sites of low significance.

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4 ABBREVIATIONS

AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
EIA	Environmental Impact Assessment
EIA	Early Iron Age (<i>EIA refers to both Environmental Impact Assessment and the Early Iron Age but in both cases the acronym is internationally accepted. This means that it must be read and interpreted within the context in which it is used.</i>)
EIAR	Environmental Impact Assessment Report
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
ICOMOS	International Council of Monuments and Sites
LIA	Late Iron Age
LFC	Late Farming Community
LSA	Late Stone Age
MAA	Mineral Amendment Act, No 103 of 1993
MIA	Middle Iron Age
MPRDA	Mineral and Petroleum Resources Development Act 28 of 2002
MSA	Middle Stone Age
NEMA	National Environmental Management Act 107 of 1998
NHRA	National Heritage Resources Act 25 of 1999

PHAR	Provincial Heritage Resource Agency
SAHRA	South African Heritage Resources Agency
ToR	Terms of Reference

5 DOCUMENT INFORMATION

Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below;

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD 1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

5.1 Definitions

Just like periodisation, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best-practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture or archaeology of human development.

Cultural significance is determined means of aesthetic, historic, scientific, social or spiritual values for past, present or future generations.

Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

In-situ refers to material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Archaeological site/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artifacts, human and hominid remains, and artificial features and structures. According to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), no archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorization from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority.

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

Chance finds means archaeological artefacts, features, structures or historical remains accidentally found during development

A grave is a place of interment (variably referred to as burial) and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery (contemporary) or burial ground (historic).

A site is a distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Heritage Impact Assessment (HIA) refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project which requires authorization of permission by law and which may significantly affect the cultural and natural heritage resources. Accordingly, a HIA must include recommendations for appropriate mitigation measures for minimizing or circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Impact is the positive or negative effects on human well-being and / or on the environment.

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the prehistorical, historical or the relatively recent past.

Study area or 'project area' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data and limited field walking in order to establish the presence of all possible types of heritage resources in any given area.

5.2 Assumptions and disclaimer

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground level. Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted immediately, and SAHRA or PHRA must be notified in order for an investigation and evaluation

of the find(s) to take place (cf. NHRA (Act No. 25 of 1999), Section 36 (6). Recommendations contained in this document do not exempt the developer from complying with any national, provincial and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. Siyathembana 293 Pty assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

5.3 Consultations

The study team consulted the Environmental Department at Venetia Diamond Mine and archaeologists who have worked in the area.

6 Terms of Reference (ToR)

Siyathembana 293 Pty was appointed by DE Beers Consolidated Mines to mitigate sites to be affected by the consolidation of existing operations at Venetia Diamond Mine.

7 Legislation Context

Relevant pieces of legislations are to the present study are presented here. Under the National Heritage Resources Act (Act 25 of 1999) (NHRA), Mineral and Petroleum Resources Development Act 28 of 2002, and the National Environmental Management Act (NEMA), an AIA or HIA is required as a specialist sub-section of the EIA.

Heritage management and conservation in South Africa is governed by the NHRA and falls under the overall jurisdiction of the SAHRA and its PHRAs. There are different sections of the NHRA that are relevant to this study. The present proposed development is a listed activity in

terms of Section 38 of the NHRA which stipulates that the following development categories require a HIA to be conducted by an independent heritage management consultant:

- Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length
- Construction of bridge or similar structure exceeding 50m in length
- Development or other activity that will change the character of a site -
 - Exceeding 5000 sq. m
 - Involving three or more existing erven or subdivisions
 - Involving three or more erven or divisions that have been consolidated within past five years
 - Rezoning of site exceeding 10 000 sq. m
 - The costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority
- Any other development category, public open space, squares, parks, recreation grounds

Thus any person undertaking any development in the above categories, 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. Section 38 (2) (a) of the same act also requires the submission of a heritage impact assessment report for authorization purposes to the responsible heritage resources agencies (SAHRA/PHRAs). Because, the consolidation of operation at Venetia Diamond Mine may change the character of a site exceeding 5000 sq. m, then an archaeological mitigation is required.

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 37. Section 34 stipulates that no person may alter, damage, destroy, relocate etc any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority. This section may not apply to present study since none were identified. Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object. This section may apply to any significant archaeological sites that may be discovered before or during construction. This means that any chance find must be reported to SAHRA or the relevant PHRA, who will assist in investigating the extent and significance of the finds and inform about further actions. Such actions may entail the removal of material after documenting the find site or mapping of larger sections before destruction. This study aims at achieving this object. Section 36 (3) of the NHRA also stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or 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. This section may apply in case of the discovery of chance burials, which is unlikely. The procedure for reporting chance finds also applies to the unlikely discovery of burials or graves by the developer or his contractors. Section 37 of the NHRA deals with public monuments and memorials but this may not apply to this study.

In addition, the new EIA Regulations (21 April 2006) promulgated in terms of NEMA (Act 107 of 1998) determine that any environmental reports will include cultural (heritage) issues. The new regulations in terms of Chapter 5 of the NEMA provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard. The end purpose of such a report is to alert the developer, the environmental consultant, SAHRA or the relevant PHRA and interested and affected parties about existing heritage resources that may be affected by the proposed development, and to recommend mitigatory measures aimed at reducing the risks of any adverse impacts on these heritage resources. The present study is a mitigation recommended by earlier HIA reports. Table 2: summarises the evaluation of this work.

Table 2: Evaluation of the consolidation of the existing development as guided by the criteria in NHRA, MPRDA and NEMA

ACT	Stipulation for developments	Requirement details
NHRA Section 38	Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
	Construction of bridge or similar structure exceeding 50m in length	No
	Development exceeding 5000 sq. m	Yes
	Development involving three or more existing erven or subdivisions	No
	Development involving three or more erven or divisions that have been consolidated within past five years	No
	Rezoning of site exceeding 10 000 sq. m	Not available
	Any other development category, public open space, squares, parks, recreation grounds	No
NHRA Section 34	Impacts on buildings and structures older than 60 years	No
NHRA Section 35	Impacts on archaeological and paleontological heritage resources	Yes
NHRA Section 36	Impacts on graves	Not available
NHRA Section 37	Impacts on public monuments	No
Chapter 5 (21/04/2006) NEMA	HIA is required as part of an EIA	Yes
Section 39(3)(b) (iii) of the MPRDA	AIA/HIA is required as part of an EIA	Yes

8 Research (mitigation) aims

This excavation sought to achieve the following:

- To establish site extent, chronology and significance of sites identified during the Phase 1 AIA through trenches and test excavations
- To identify the spatial features and settlement layout of each site to better understand the distribution of activity areas at the sites
- To study the collected and excavated material culture to understand the broader chronological and cultural context of the sites
- To document the sites through mapping, survey and photo-recording to create an archive for heritage management and research purposes.
- To generate information on lesser known archaeological sites in the broader Mapungubwe cultural landscape

9 Approaches to mitigation: Desktop Studies

In order to understand the broad cultural context of the sites, a desktop study involving studying published literature and cartographic data was carried out. This resulted in the identification of sites around the Farm Venetia (Fig 2). Chrono-typologically, the Mapungubwe Cultural Landscape hosts important sites belonging to Zhizo (AD700 to 1000), K2 (AD1000-1200), Transitional K2 (AD1200-1220), Mapungubwe (AD1220 to 1300), Khami (AD1450 to 1800), Icon (AD 1300 to 1450) as well as the recent Venda, Sotho and Boer settlements. Other important sites belong to the Stone Age (Figure 2), from about 2 million years ago to the late Holocene (see for example Huffman 2000; Eastwood and Cnoops 1999; Parollo et al. 2010).

Despite covering a very large area, most of what we know about the Mapungubwe Cultural Landscape comes from the three capitals of successive states: Schroda, K2 and Mapungubwe. Other significant research has also looked at sites of farmer and hunter-gatherer interaction in the Shashi-Limpopo basin. As such, we know very little about outlying settlements far away from the capitals. Furthermore, we know little about the post-Mapungubwe Khami, Sotho and Venda settlements in the area. The prominence given to elite sites diverted attention away from commoner sites scattered across the landscape. These sites must be studied to balance the existing elite-centric history. It was within this caveat that the present study was undertaken.

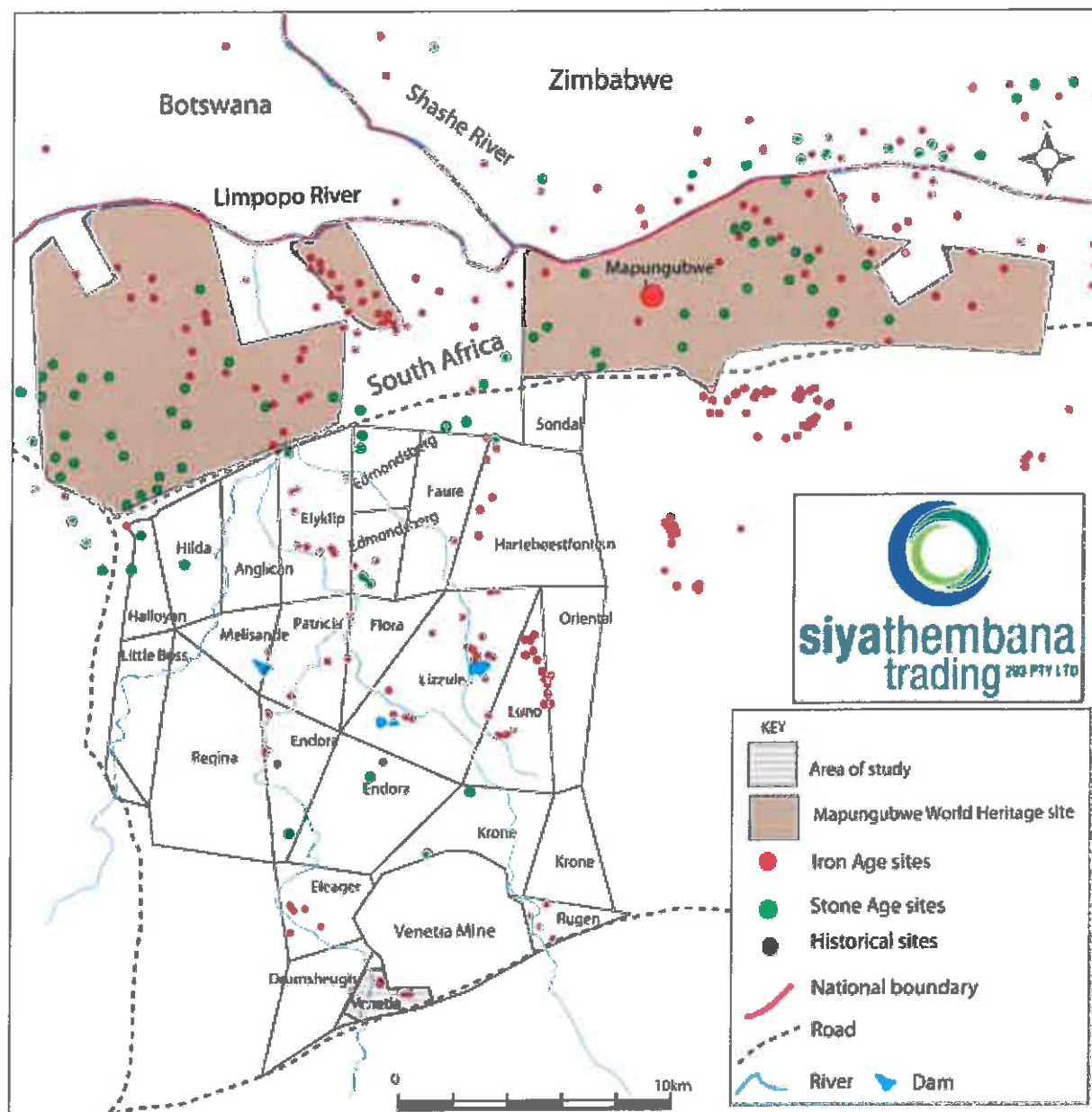


Figure 2 shows the location of known archaeological sites in the Venetia Limpopo Nature Reserve and adjacent areas. It was compiled using previous research and impact assessment studies.

9.1 History of archaeological impact assessment at Venetia Diamond Mine

Since its establishment in 1992, Venetia Diamond Mine carried out archaeological impact assessments which identified archaeological sites in the area (Hanisch 1989). Furthermore, it sponsored long term research by Professor Thomas Huffman and his students (Huffman 2000, 2010, 2012). Subsequently, Gaigher and associates carried out impact assessments in the Venetia Mining Right Area and confirmed the presence of sites identified previously. Following on this study, Pistorius (2011) also carried out an archaeological impact assessment of the proposed conversion from open cast to underground mining by De Beers. His work also confirmed the presence of sites identified previously and noted various threats. In his significance assessment, Pistorius (2011) concluded that only a few sites: the Khami site on the edge of the Fine Residue Deposit and the Middle Stone Age site required mitigation. Furthermore, he recommended that the remainder of the sites outside the internal security fence were to be left alone.

In 2012 and 2013, Siyathembana Trading carried out an impact assessment study of the same area. It was noted that the sites identified during previous impact assessments had deteriorated and that while some were previously fenced, the fences were broken up with certain activities threatening to destroy the sites which were all of Grade III significance. In a marked departure from previous studies, Siyathembana recommended that sites which lie within the Mining Right Area footprint and those on the edges of this area must be comprehensively documented and mitigated just in case some unforeseen events may destroy them. In 2014, a flooding event resulted in the Fine Residue Deposit overflowing thereby covering and destroying a Khami site with sludge. Already, infrastructure is being erected in the area for example a radio mast and a service road. For this reason, it was important to gather as much information about these sites as possible for management and research purposes.

The SAHRA Minimum standards stipulate that “if sites that cannot or need not be saved from development carry information of significance about the past, the archaeologist will recommend a Phase 2 Archaeological Mitigation. The purpose is to obtain a general idea of the age, significance and broader cultural meaning of the site that is to be lost and to store a sample that

The six sites in the area with a red boundary (bottom left corner) are in essence two large village sites. The four green points to the right (previously marked as Elesger 98 and Venetia 103 TVT3/1-4) are concentrations of kraals marked by the presence of vitrified dung, grain bin foundations, stone cairns and other cultural features that belong to one site here-after referred to as Venetian Nature Reserve Site 1 (VNRS1). Part of this site used to be fenced but the fence is now broken and a radio mast and service road are within ten metres of the site. It was considered prudent to study this site in relation to the other village site, Venetia Nature Reserve Site 2 (VNRS2) marked by the two green dots on Figure 3. The Khami site on the Fine Residue Deposit has already been destroyed due to circumstances beyond the mine's control. The MSA site denoted by the red square on the map was washed up during the floods.

In January 2015, Siyathembana Trading carried out fieldwork to monitor and assess the condition of archaeological sites on the Venetia Mine property. This also involved a more thorough walk down of all the sites. During the process, it was suggested that the VNRS1 and 2 are remains of a vast village. Contrary to some of the previous recommendations stated that the sites must be left alone, it was important to survey and map the key features as well as to excavate to determine the cultural affiliation of the site than to expose the sites to unforeseen agents of deterioration.

This field component started with surveys that aimed at locating all possible objects, sites and features of cultural significance on the area of study. Intra-site surveys were conducted following standard field-walking in 20m transects that covered the entire site (400m X 700m for VNRS1 and 400m X 600m for VNRS2). GPS readings of concentrations of artefacts were recorded for mapping purposes.

10.1 Venetia Nature Reserve Site 1

Key features identified during the surveys around VNRS1 include a large cattle kraal with vitrified dung, twelve stone features and a very shallow midden (Figure 4A-D and 5A-B).

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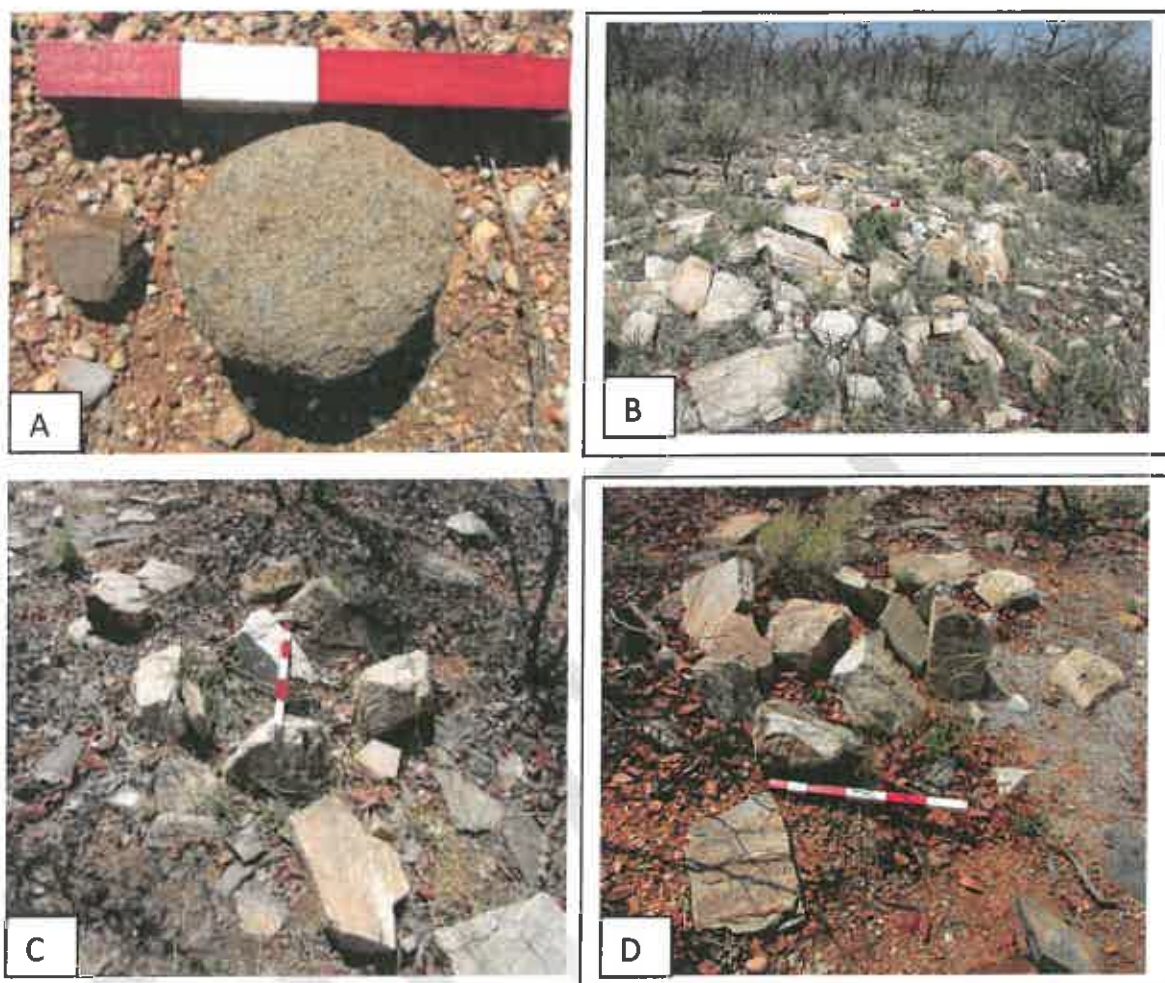


Figure 4A-D: Photographs of finds and features from VNRS1. Photograph A is showing a potsherd and an upper grinding stone found between the Cattle kraal and Stone feature 1. B shows remains of a collapsed low stone wall and C and D are showing possible grain bin foundations identified as Stone feature 3 and 5



Figure 5A-B: Photographs A and B are showing the shallow midden and cattle kraal, respectively.

Detailed mapping of key features involved triangulation, correlated to GPS readings and Q-GIS mapping (Figure 6).

DRAFT

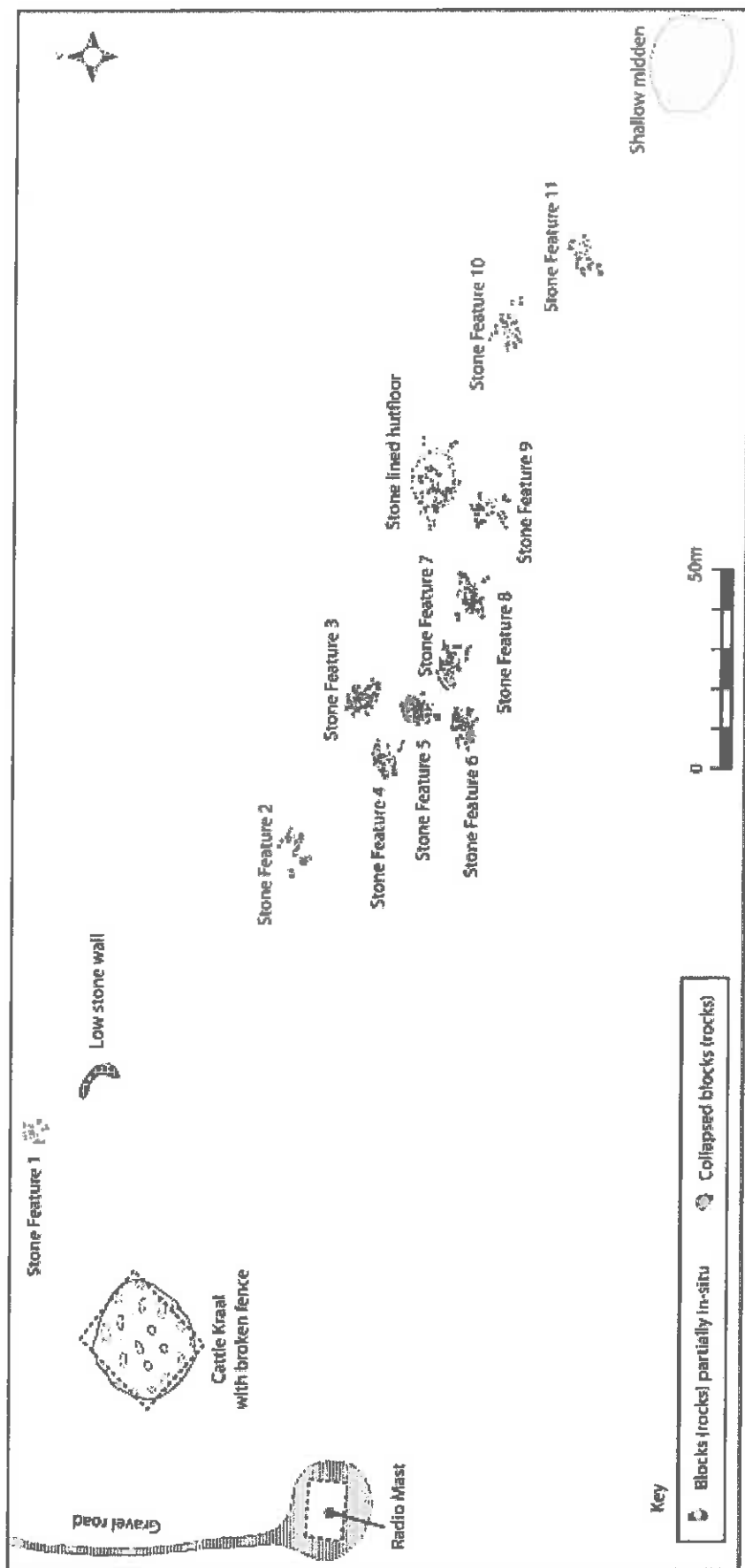


Figure 6: Map of key features at VNRS1.

Detailed mapping of individual features was done in order to capture the salient details that enabled proper identification of these stone features. Stone Features 1-11 are consistent with stone lined grain bin foundations. Some of the blocks are still partially in-situ and are lying in vertical positions that are meant to create clearance needed when erecting grain bins (Figure 7).

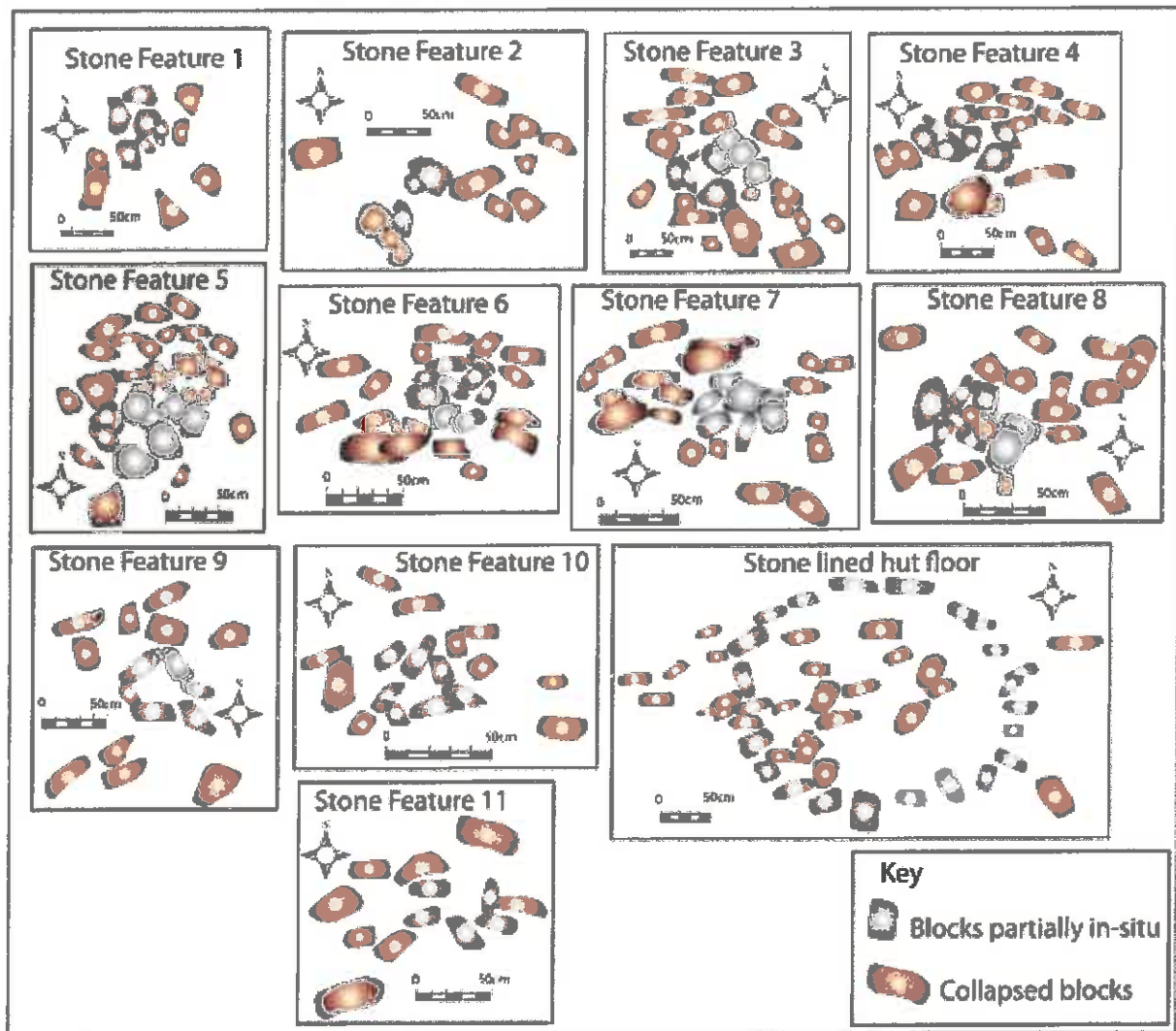


Figure 7: Mapping stone features at VNRS1

These stone features were conspicuously free of cultural material, save for isolated potsherds found around the site in general. Thus excavations were necessary in order to increase the sample size of cultural material.

10.2 Venetia Nature Reserve Site 2

Detailed surveys around VNRS2 did not yield many features or isolated objects. Figure 8A-D summarises the findings from this site.



Fig 8a shows a quarry site

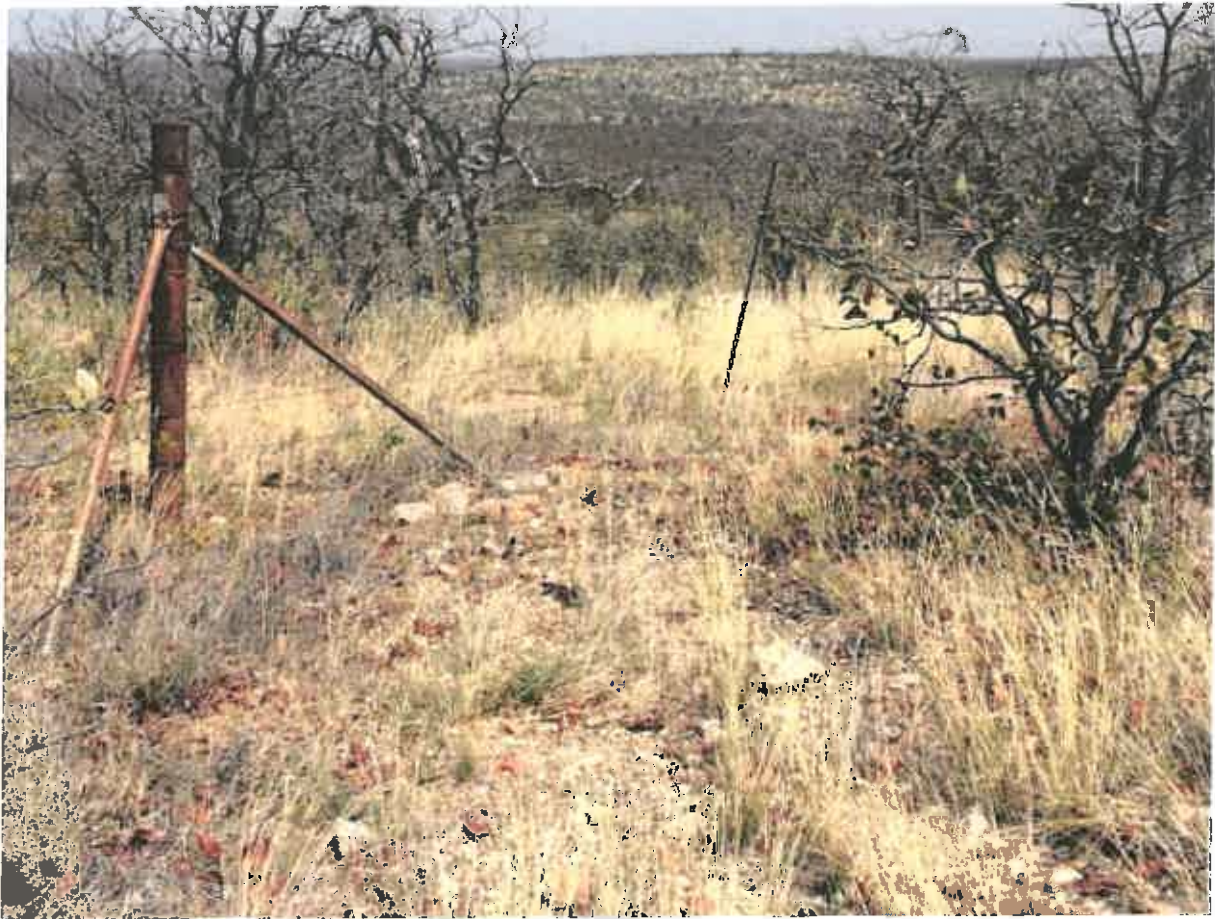


Fig 8b shows the remaining fence that previously used to protect the site



Fig 8c shows the light with the Coarse Residue Deposit in the background



Figure 8d shows two hammerstones recovered visible on the surface.

11 Detailed test excavations and sampling

Following field surveys and mapping, it was clear that any meaningful excavations could only be conducted at VNRS1 because VNRS2 did not have any significant deposit with excavation potential. At VNRS1, test trenches were sunk on the cattle kraal, but a shovel test on the midden confirmed that this area was badly eroded leaving very little to salvage. Three test trenches were sunk on the cattle kraal and these were carefully excavated following natural layers (Figure 9).

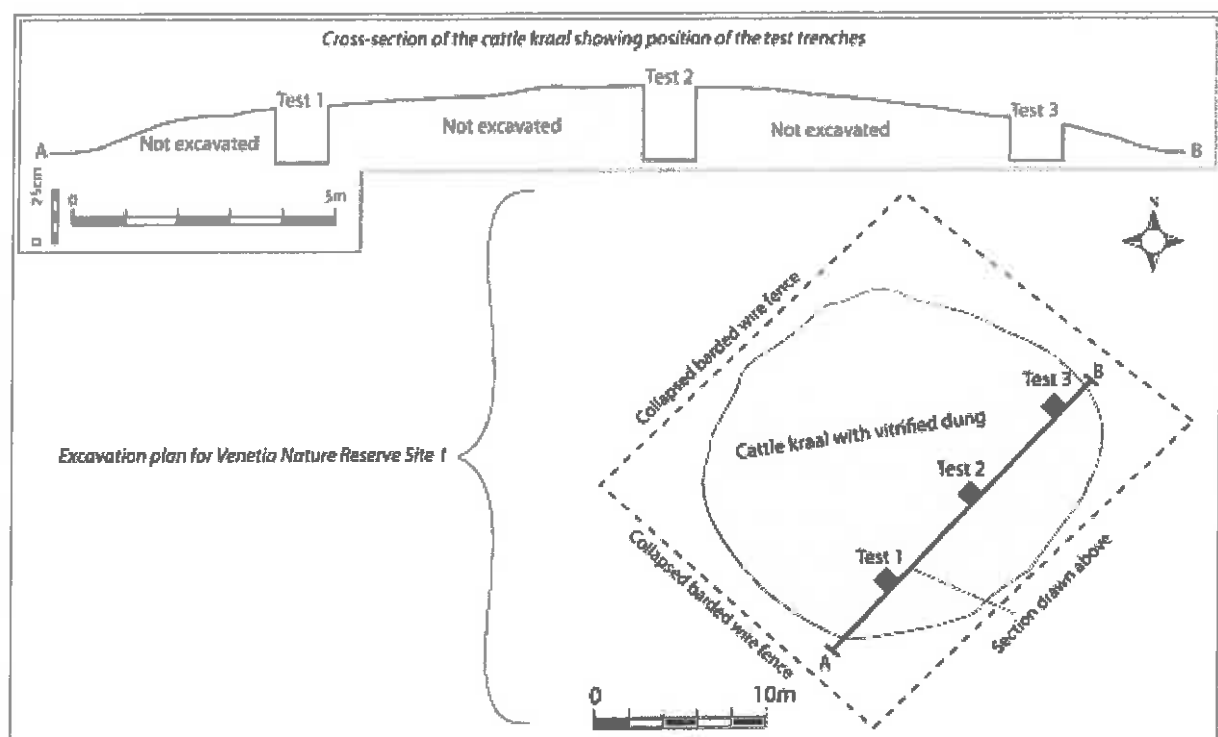


Figure 9: Excavation plan and cross-sectional view of the cattle kraal at VNRS1

A cross-section of the midden that included the trenches shows that this 23m diameter kraal was also not very deep, with excavations only going as far as 30cm before reaching sterile ground. Years of erosion and degradation may have reduced the depth of this kraal material, as was the case on the midden. Only one layer comprising of vitrified dung with isolated plain potsherds was found overlying a rocky sterile layer (Figure 10).

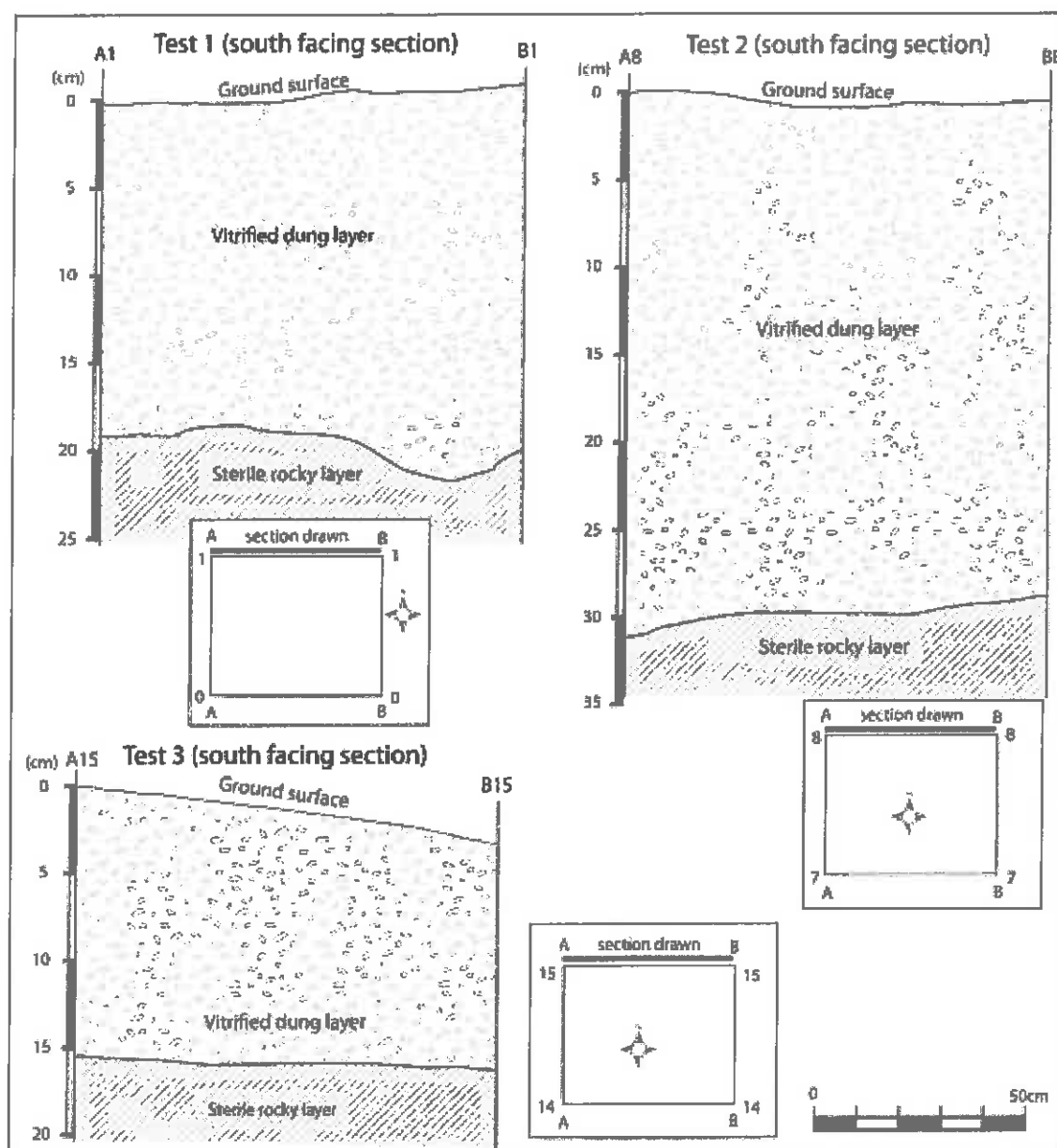


Figure 10: Excavation sections for Test -3 at VNRS1.

No excavations were carried out on the stone feature because they had very poor excavation potential. Generally the whole site did not produce significant amounts of cultural material, an observation which commensurate with typical cattle post.

12 Artefact studies and documentation

South Africa is one of the privileged countries in the world to have a very long and varied history human occupation (Deacon and Deacon 1999). However it is very important to note that this history is not evenly spread throughout the country. In this part of the Limpopo Province, Iron Age site dominates. Agriculturalist communities (Iron Age groups) entered southern Africa from West and East Africa around AD 200 and brought with them settled agriculture, metal working, animal husbandry, pottery making and social stratification (Huffman 2007). The view that all of these activities were introduced to southern Africa by these agriculturalists communities is still contested. The movement and spread of these EIA (~ AD200-1000) people within southern Africa seem to have been restricted to the summer rainfall (because of sorghum and millet farming) and they did not occupy much of the central interior Highveld area in South Africa. This perhaps explains the paucity of EIA sites in the study area. Ecologically, EIA preferred to settle on the alluvial soils near rivers for agricultural purposes and access to water.

Our field surveys and excavations mostly recovered potsherds and upper grinding stones but at VNRS1 a spindle was also recovered (Figure 11).

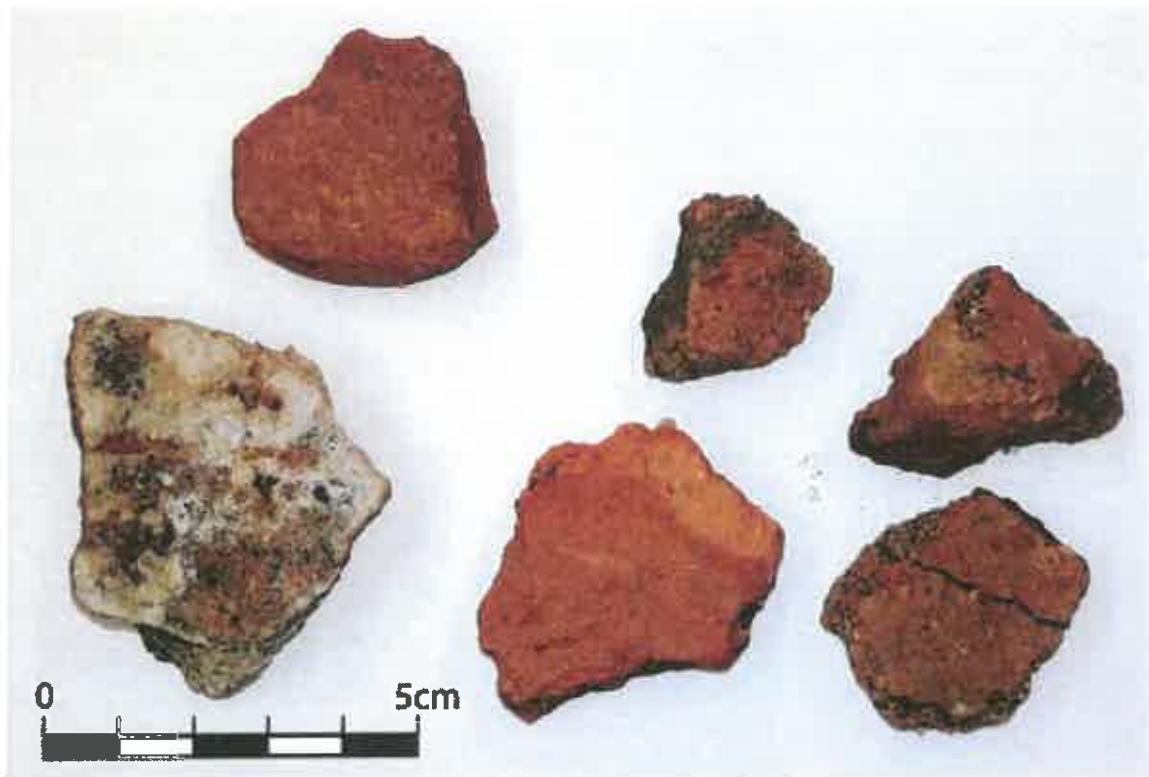


Figure 11: A spindle whorl and some potsherds from VNRS1

Only one potsherd was decorated in a broad line of incision (Figure 12) but reports by Pistorius (2011) had placed the sites into the Khami phase.

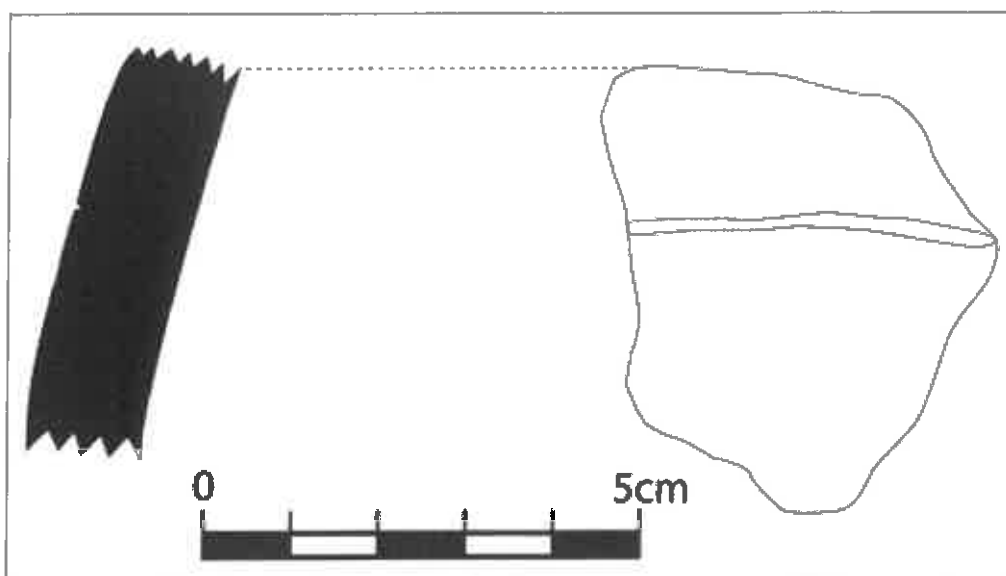


Figure 12: An illustration of a decorated sherd from Test 1 at VNRS1.

Key features of Khami pottery are graphite and red ochre designs on tall necks a shoulders of constricted vessels and are widely distributed from western Zimbabwe to parts eastern Botswana and northern South Africa Huffman (2007: 261). Unfortunately the current suite of ceramics under study does not have identifiable profiles.

13 Summary of findings

Table 3: A summary of the findings

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	None exists within the development footprint
Areas to which oral traditions are attached or which are associated with intangible heritage	None exists on the study area
Historical settlements and townscapes	None survives in the area f study
Landscapes and natural features of cultural significance	None

Archaeological and paleontological sites	Two archeological sites exist
Graves and burial grounds	None exists or are identifiable on the basis of a surface survey
Movable objects	Pottery, grinding stones, a spindle whorl and bone fragments
Overall comment	

14 Chance findings procedures

It has already been highlighted that sub-surface materials may still be lying hidden from surface surveys. Therefore, absence (during surface survey and test excavations) is not evidence of absence all together. The following monitoring and reporting procedures must be followed in the event of a chance find, in order to ensure compliance with heritage laws and policies for best-practice. This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. Accordingly, all construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds.

- ☐ If during the construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- ☐ The senior on-site Manager must then make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area before informing SAHRA/PHRA.

15 Conclusions

For compliance with South African heritage law and other environmental legislation, De Beers Consolidated Mines consulted Siyathembana Treading 293 Pty to carry out a mitigation of sites

to be affected by the consolidation of operations at Venetia Diamond Mine. The sites were previously identified and classified during HIAs but they had not been studied in detail to determine their size and significance. Although portions of these sites were once fenced off, the fencing was now dilapidated and the earlier recommendation of non-intervention had left the sites exposed to unforeseen agents of destruction. We then combined desktop studies with detailed fieldwork (surveys and test excavations) in order to mitigate these sites from a consolidation of operations that threatened the survival of these little known sites. This work and the subsequent laboratory analysis of the objects recovered suggest that the sites may be cattle post belonging to the Khami phase of the Iron Age. The sites are generally characterized by a paucity of cultural material except for isolated grinding stones, undecorated pottery fragments and a spindle whorl. The potential for chance finds, still remains and the developer and his contractors are requested to be diligent and observant during operations. The procedure for reporting chance finds has clearly been laid out.

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**MONITORING OF ARCHAEOLOGICAL SITES DURING CONSOLIDATION OF
EXISTING ACTIVITIES FOR THE VENETIA UNDERGROUND PROJECT FOR DE BEERS
CONSOLIDATED MINES LIMITED – VENETIA MINE**

Author(s): Professor Shadreck Chirikure, **Reviewed by** Dr McEdward Murimbika

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1. Executive Brief

Siyathembana Trading 293 (Pty) Ltd., a high level archaeological risk management company was contracted by De Beers Consolidated Mines (DBCM) to monitor known and unknown archaeological sites during the consolidation of existing activities by the diamond mining giant at Venetia Mine (Fig 1). Venetia Mine is situated outside the core of the listed portion of the Mapungubwe National Park and World Heritage site. However, it is situated on the Mapungubwe Cultural Landscape as broadly defined. In addition, Venetia has operational assets such as boreholes, pipelines and a dam inside the core of the World Heritage property. These assets have a historical relationship with the property because they were established in 1992, before the listing of Mapungubwe as a World Heritage site in 2003.



Fig 1 shows the plan of Venetia Mine

In 2012, DBCM applied for authorization to convert the mining method from open pit to underground mining. The State Party, represented by the Department of Environmental Affairs requested an HIA that considers the direct and indirect impact of the proposed conversion on attributes that convey Mapungubwe's Outstanding Universal Value as well as the individual

sites on Venetia Mine. The HIA established that the mine had no direct impact but that there were sites inside the mining area, some of which required monitoring.

This report presents the results of archaeological monitoring carried to ensure that heritage assets within the premises of Venetia Mine and those within the core of the listed property are sustainably protected. It reached the following conclusions:

1. No new sites were discovered during the minimal top soil removal associated with the construction of the buttress wall.
2. No chance archaeological finds were discovered during the construction of the buttress wall
3. The construction of the buttress wall took has commenced in an area already disturbed by mining. In other words, the FRD is a pre-existing facility. The buttress wall only served the purpose of creating additional capacity, stabilising and rehabilitating it. .
4. The Khami site lies on the edge of the dam within the FRD. Slime covered the low and small stone walling making up the site. Given its low significance, and lack of excavation potential, it is recommended that a destruction permit must be obtained from SAHRA in terms of the National Heritage Resources Act of 1999.
5. The Venetia Mine facilities are inside the buffer and core do not have a direct impact on attributes that convey Mapungubwe's OUV. Routine maintenance is carried out to rehabilitate areas affected by erosion.

2. Terms of reference (ToR)

Siyathembana Trading 293 (Pty) Ltd was contracted by DBCM to monitor the impact of the proposed consolidation of existing activities within the existing mining footprint on known and unknown archaeological resources. Furthermore, additional monitoring was conducted to assess the potential impact of Venetia Mine's assets on attributes that convey Mapungubwe's Outstanding Universal Value. The work was carried out following the provisions of the South African World Heritage Act of 1999, National Heritage Resources Act of 1999 and the SAHRA minimum standards. The terms of reference are as follows:

- a. to monitor the impact of the proposed development on known sites inside the mining area;
- b. to monitor exposed ground for chance archaeological and palaeontological finds
- c. rescue chance finds in line with the provisions of the National Heritage Resources Act
- d. produce comprehensive monitoring reports to meet compliance requirements
- e. to monitor the impact of the pre-existing assets inside the core of the World Heritage site
- f. consider alternatives in terms of the National Heritage Resources Act, if archaeological resources will be adversely impacted.

3. Abbreviations

AIA	Archaeological Impact Assessment
BEA	Basic Environmental Assessment – Section (23)(2)(d)
EIA	Environmental Impact Assessment
ESA	Early Stone Age
ESR	Environmental Scoping Report – Section (29)(1)(d)

EIA	Environmental Impacts Assessment – Section (32)(2)(d)
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
HP	Historical Period
IA	Iron Age
MIA	Middle Stone Age
LIA	Late Iron Age
LSA	Later Stone Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act 107 of 1998
NHRA	National Heritage Resources Act 25 of 1999
SAHRA	South African Heritage Resources Agency

4. Introduction

Venetia Mine is located approximately 80 kilometres west of Musina, Limpopo Province and approximately 40 kilometres to the east of Alldays. It is situated on the farm Venetia 103MS (Fig 2). The mine was established in 1992 and is today South Africa's largest diamond producer. The mine employs more than 4000 people and strongly contributes to the local, regional and national economies. When the mine was commissioned and developed, DBCM purchased multiple farms to create a nature, culture and wildlife sanctuary known as the Venetia Limpopo Nature Reserve. This 36 000 hectare portion of land is governed by a very strict code of conduct and currently forms part of the buffer zone that protects the core of the Mapungubwe National Park and World Heritage site. Further land donations and financial investments resulted in the creation of the Mapungubwe National Park and World Heritage site in 2003. Owing to a pre-existing relationship with the listed and unlisted portions of the Mapungubwe Cultural Landscape, DBCM still has operational assets such as a pipeline and water abstraction facilities inside the core and buffer of the listed property (Fig 3). Some of these assets (e.g. pipelines) have been exposed by soil erosion and are being continuously monitored and rehabilitated to ensure that the integrity of this cultural landscape is retained. Furthermore, there are individual sites located inside the Venetia Mine area.

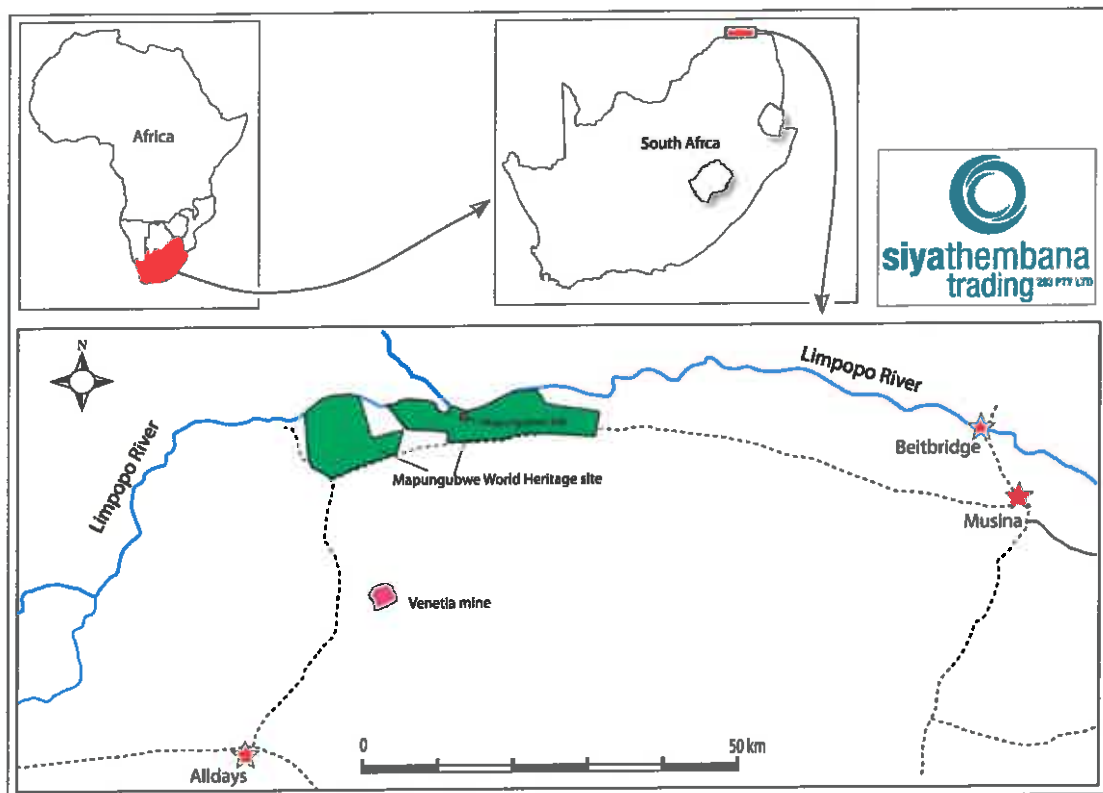


Fig 2 shows the location of Venetia Diamond Mine in relation to the Mapungubwe National Park and World Heritage site.

The Mapungubwe Cultural Landscape is an archaeologically layered landscape (Deacon and Norton 2003). It consists of various layers of human occupation dating back millions of years. The earliest layer belongs to the Early Stone Age (ESA) (2.6 million – 200 000 BP) which is followed by the Middle Stone Age (MSA) (300 000 – 20 000 BP) and the Later Stone Age (LSA) (20 000 -to the recent historical time (last 2000 years) (Sampson 1974; 1984; Sadr 2008; Barham & Mitchell 2008). Then, there is the layer corresponding to Early Iron Age farmers in the first millennium AD (Huffman 2007). This layer is followed by Middle Iron Age peoples who are associated with the state capitals at Schroda, K2 and Mapungubwe. Subsequent to this various groups of Late Iron Age period settled in the area. The last layers relates to colonial history and the early history of the twentieth century. The material signatures for all these cultural periods have been identified in the area under study and should be taken cognisance of.

In 2012, DBCM proposed to convert its operations from open pit mine to an underground operation. As part of obtaining relevant authorizations, the Department of Environmental Affairs requested that a full Heritage Impact Assessment following ICOMOS Guidelines be conducted. This was carried out by Siyathembana Trading but is still awaiting official comments from SAHRA. The realization that the attributes that convey Mapungubwe's World Heritage status must be safeguarded together with individual sites on the landscape as broadly defined prompted DBCM to retain Siyathembana Trading 293 for monitoring during the proposed consolidation of existing activities. The consolidation involved using the existing treatment plant, treating ore from the same kimberlite pipes; however, the extraction method is changing from 2021, to an underground mining method. As such, this will take place on a landscape that had already experienced cumulative years of mining and related activities.

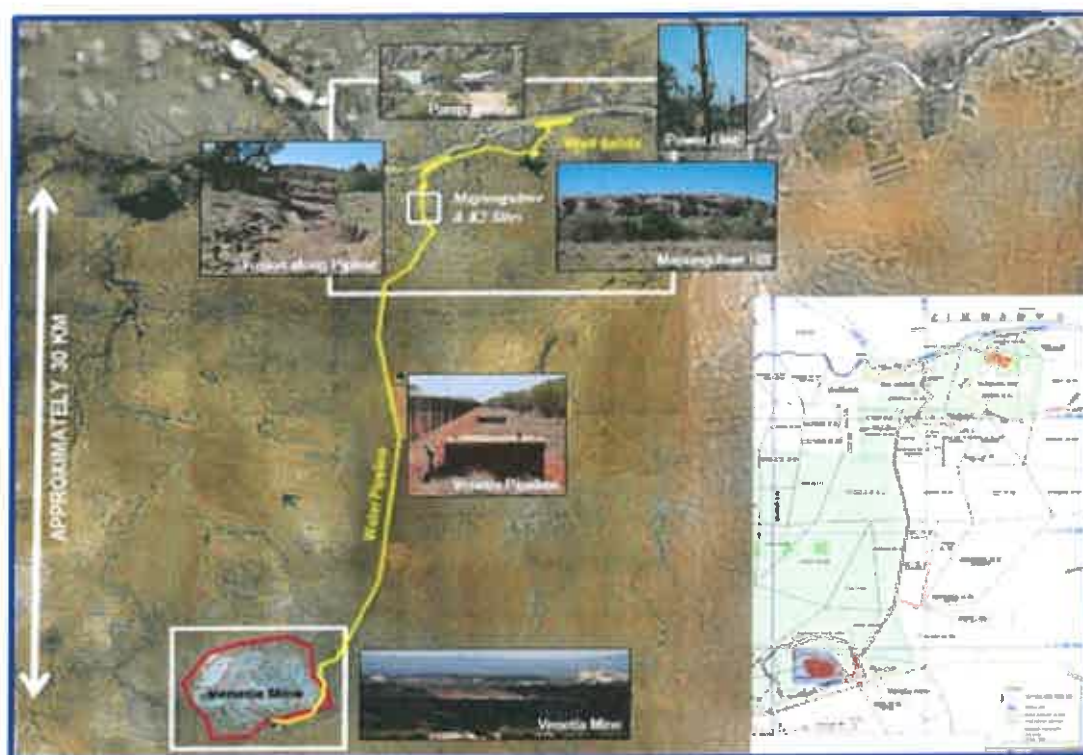


Figure 3 shows the operational assets of Venetia Mine inside the buffer zone and the core of the Mapungubwe World Heritage Site

The purpose of this report is to present the results of the monitoring of archaeological sites during the consolidation of existing activities as well as to assess the potential impact of Venetia Mine's assets on individual attributes that convey the OUV of Mapungubwe National Park and World Heritage Site inside the core. This was meant to ensure that Venetia Mine only contributes to safeguarding the OUV and not eroding it. The first part of the report deals with the monitoring associated with the consolidation of existing activities inside the mine while the second deals with the monitoring carried out inside the core of the World Heritage property.

5. Legislative context

The identification, evaluation and assessment (monitoring) of any cultural heritage sites, artifacts or finds in the South African context is required and governed by the following legislations:

- (a) National Heritage Resources Act (NHRA) Act 25 of 1999
 - (i). Protection of Heritage Resources – Sections 34 to 36; and
 - (ii). Heritage Resources Management – Section 38

(b) National Environmental Management Act (NEMA) Act 107 of 1998 - Sections 24(5), 24M and 44

(i). Basic Environmental Assessment (BEA) – EIA Regulation 22

(ii). Environmental Scoping Report (ESR) – EIA Regulation 28

(iii). Environmental Impacts Assessment (EIA) – EIA Regulation 31

The NHRA of 1999 stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34 (1) of the NHRA states that “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...”. Subsection 35(4) of the same act states that: No person may, without a permit issued by the responsible heritage resources authority-

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist with the detection or recovery of metals or archaeological material or objects, or use such equipment for the recovery of meteorites.

The purpose of Chapter 5 in NEMA is to promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities. To give effect to the general objectives of integrated environmental management laid down in Chapter 5, the potential consequences for or impacts on the environment of listed activities or specified activities must be considered, investigated, assessed and reported on. NEMA defines Environment as “the surroundings within which humans exist and that are made up of-

- (i) the land, water and atmosphere of the earth;
- (ii) micro-organisms, plant and animal life;
- (iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and
- (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being

This monitoring report is part of Venetia Mine’s compliance with the legislation to ensure that mining is executed in a sustainable way. The legislation, in particular the National Heritage Resources Act of 1999, also provides useful working definitions on what constitute heritage resources, archaeological resources, cultural significance and development. The following definitions are adopted in this monitoring report:

Heritage resources

This means any place or object of cultural significance

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Archaeological resources

This includes:

- i. 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;
- ii. 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 10m of such representation;
- iii. 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 as defined in the Maritimes Zones Act, and any cargo, debris or artifacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- iv. features, structures and artifacts associated with military history which are older than 75 years and the site on which they are found.

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in the change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- i. construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- ii. carrying out any works on or over or under a place;
- iii. subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- iv. constructing or putting up for display signs or boards;
- v. any change to the natural or existing condition or topography of land; and
- vi. any removal or destruction of trees, or removal of vegetation or topsoil

6. Archaeological resources of the Mapungubwe cultural landscape

The Mapungubwe Cultural Landscape is very rich in archaeological sites of various periods. These are attested by the presence of numerous sites, some of which have been subjected to intensive research while the other awaits further investigation. The archaeological history of the area can be summarized as follows:

i. Earlier Stone Age, Middle and Later Stone Ages

Material dating to the three Stone Ages – Earlier (2.6 million to 200 000 years BP), Middle (200 000 – 30 000 BP) and Later Stone Ages (30 000 – 2 000BP) (Deacon and Deacon 1999; Phillipson 2005) has been repeatedly found on archaeological sites within the Mapungubwe Cultural Landscape and adjacent areas. A team led by Professor Kathy Kuman of the University of the Witwatersrand identified important sites that have enhanced our understanding of the Stone Age sequence of the Limpopo Valley and surrounding areas (e.g. Sutton 2003; Pollarolo 2004; Kuman *et al.* 2005a, b; Kempson 2007; Le Baron 2007; Pollarolo *et al.* 2010; Wilkins *et al.* 2010). Most of the sites in the area are open-air sites that experienced episodic deflation during the arid periods of the Pleistocene (Kuman *et al.* 2005b). For example, due to the deflation, the stratigraphy of sites such as Hackthorne and Keratic Koppie was destroyed, thus reducing them to single component sites. However, the stratigraphy at Kudu Koppie remained intact (Kuman *et al.* 2005a, b). Based on a preliminary assessment of these sites' surface collections of stone artefacts, that include simple core types, bifaces, occasional unifaces as well as pieces typical of MSA tools such as retouched points, Kuman and colleagues (2005a) suggested that the earliest occupation of the sites was during the ESA, either in the Acheulean or the post-Acheulean Sangoan Industry. Further, they indicated that the sites bear resemblance to industries that are transitional between the ESA and Middle Stone Age (MSA), especially those found north of the Limpopo in Zimbabwe.

Lithic analyses indicated that Hackthorne is primarily a late ESA site with a mix of MSA tools. The site however, had a very low proportion of formal tools and a high proportion of flakes indicating that it may have been a manufacturing site (Kempson 2007). Hackthorne tools were produced from locally sourced rocks such as quartzite, quartz, chert and dolerite. The other important site is that of Keratic Koppie which is dominated by a Middle Stone Age assemblage. Formal tools form a small component of the assemblage and include heavy-duty tools such as picks, core axes, a uniface and a denticulate. Light-duty tools include some utilised flakes and some denticulated/notched scrapers. In addition, the site has the highest numbers of irregular cores (Kempson 2007). Based on these tools, the site's ESA is argued to be the final-post Acheulean with a major component of woodworking tools, suggesting it may be a local variant

of the Sangoan Industry (Kuman *et al.* 2005b; Kempson 2007). The MSA sites are dominated by scrapers and points (Lombard *et al.* 2012).

Kudu Koppie has the longest occupation period of the Stone Age sites studied in the Limpopo Valley, with assemblages spanning from the ESA to the Later Stone Age (LSA). It is the first open-air site in the northernmost part of South Africa with a late ESA assemblage overlain by an MSA industry in a stratified context (Pollarolo & Kuman 2009). The site was excavated in layers, the first containing highly weathered ESA tools (Kuman *et al.* 2005b), while Layer 2 contains ESA material at the base and some MSA tools higher up. Layer 3 contains MSA artefacts, while Layer 4 represents the uppermost MSA horizon and the overlying Layer 4 contains LSA tools. Kudu Koppie like the other two sites has high frequencies of small flaking debris, hence knapping could have taken place here too (Kuman *et al.* 2005b). The site has a variety of heavy-duty and light-duty tools such as picks, choppers, core-axes, denticulated/notched scrapers, retouched flakes and cutting tools and some miscellaneous retouch, as well as prepared cores and radial cores typical of MSA assemblages (Kempson 2007). It does not appear as if there was a rock type preference at this site as a wide variety of rock types available locally were used as was the case at the other two sites.

These sites demonstrate the potential information value of Stone Age sites appearing in open air contexts and suggest that the Limpopo Valley is important for enhancing our understanding of the Stone Age (see, for example, Volman 1984; Kuman 2007; Mitchell 2002; Lombard *et al.* 2012). Outmost care should therefore be excised to protect the Stone Age sites because they contribute an important layer of information. Indeed, there is a Middle Stone Age site within the Venetia Mine Area.

ii. Rock Art of the Mapungubwe Cultural Landscape

The Mapungubwe Cultural Landscape hosts important rock art which exposes the cultural beliefs and experiences of the people who made it; predominantly the hunter-gatherers, early farming communities and Khoi herders. Different traditions are demonstrated in this area, among them; pictographs (drawings or paintings); petroglyphs (carvings or inscriptions), engravings (incised motifs), and rarely petroforms (rocks laid out in patterns), and geoglyphs (ground drawings) (Schoonraad 1960). In general, both paintings and engravings have similar themes and images, but the engravings tend to include less detail and fewer human figures (Deacon 2002). The first three rock-art traditions occur in Limpopo valley with distinctive styles and content that is largely a result of differences in the cosmology and beliefs of Stone Age hunter-gatherers, of Stone Age herders, and of Iron Age agriculturists. The Venetia Limpopo Nature Reserve (VLNR) contains rock art at places such as Hilda and Edmondsburg (Eastwood and Fish 1995). For example, the site of Hilda 1 contains red paintings depicting giraffe, baboon,

fish, fat-tailed sheep and geometric abstracts (mainly Y-shapes). The paintings of a fat-tailed sheep are painted in the same style of as those of those at other sites in the area such as sheep shelter. The male figures at this site appear to be holding hands together or the Y-shapes between them. The style of the painted giraffe is very unusual (Eastwood 1995). No rock art sites have been recorded on the Venetia Mine area such that the nearest sites are at least 10 kilometres to the northwest.

iii. The Iron Age and historical period

The Limpopo Valley where the Mapungubwe Cultural Landscape is situated hosts a crucial history of the settlement of southern Africa by agriculturalists that made pottery, worked metal, practised crop agriculture, kept livestock and settled permanently in villages. The earliest evidence of occupation by farmers belongs to the Early Iron Age (AD200 – 900). The first farmers in the area made Happy Rest pottery and their remains were found at places such as Mapungubwe. These were followed by Zhizo farmers who had more extensive villages along rivers such as Limpopo. Schroda and Ratho are some of the best examples of this group. During the time of Schroda, the farmers were hunting ivory and exchanging it for exotic commodities such as glass beads. Because of its size and wealth of material, it is believed that Schroda was an important capital of a chiefdom based in the Limpopo valley (Huffman 2007). Around AD 1000 (beginning of the Middle Iron Age), a new group of people archaeologically known as the Leopard's Kopje settled at K2 and other places. K2 was an important capital which also participated in long distance trade and elephant hunting. Around AD1220, power shifted from K2 to Mapungubwe Hill, which became an important capital controlling a territory that is approximately 30 000 square kilometres in extent. Mapungubwe participated in long distance trade and worked gold and bronze, a prestige metal and alloy respectively. There are many Zhizo, (EIA) and Leopard's Kopje (MIA) sites in and around Mapungubwe. The sites of Schroda, K2, Leokwe, and Mapungubwe are very important because apart from being National Heritage Sites, they are part of attributes that convey Mapungubwe's Outstanding Universal Value (Huffman 2007, Fatherley 2009). Not surprisingly, they are in the core of the listed property. Any proposed developments inside and outside the listed areas must not in any way affect the integrity of these sites.

Around AD1300, when Mapungubwe declined, settlement continued in the area with new groups coming in. A new group made ceramics that have been designated as Icon appeared on the landscape. The first site was recovered on the farm Icon which is adjacent to Regina 66MS. According to Huffman (2007), Icon people represent ancestral Sotho-Tswana peoples. By

AD1450, Khami people established their settlements in the Limpopo valley and adjacent areas. As such Khami sites were found along the Limpopo and Kolope Rivers on farms such as Icon and Venetia 104MS. Khami people made platforms where houses were built. These Khami people are also ancestral Venda people. Settlement continued into the historical period such that by the 19th century, ancestral Bobirwa, Venda and Sotho-Tswana people were occupying the Mapungubwe cultural landscape as broadly defined. A number of settlements around Machete are testimony to this history (Huffman 2011). In the late 19th century, the Limpopo Valley was a great elephant hunting country which attracted European traders and hunters. After colonisation and with more European settlement, European sites became abundant for example there are also Anglo-Boer War sites. In the 20th century, the farm Greefswald was also used by the South African military.

A detailed archaeological survey conducted by Professor Huffman from the late 1990s onwards on the South African side of the Shashi-Limpopo valley and by Professor Munyaradzi Manyanga on the Zimbabwean side (Manyanga 2007) and Dr Sarah Mothulatsipi (Mothulatshipi 2009) on the Botswana side yielded important information that has created our current understanding of the area. In particular, Huffman's work on the Venetia Limpopo Nature Reserve and adjacent areas identified many sites, some of which are along the Kolope River. Successive archaeological impact assessments identified sites on the Venetia Mine area. These must be monitored to protect them from destruction.

In conclusion, our current knowledge indicates that the Limpopo Valley has attracted hunting and gathering and farming communities who left their material signatures. This landscape therefore is associated with scientific, historical, cultural, scientific and aesthetic values. This has been recognized through the declaration of important capitals and surrounding landscapes as National and World Heritage places. This means that sites that are outside and inside the core are culturally related. As such, extra care must be taken to ensure that any proposed development does not affect attributes that convey the value of the landscape. This is the main objective of the monitoring.

7. Monitoring of the construction of the buttress wall around the Fine Residue Deposit

Since 1989, Venetia Mine consistently carried out archaeological impact assessments as per requirements of various environmental and heritage legislations (see for example Hanisch

1989; Pistorius 1999). In addition, numerous research led archaeological surveys were carried out within the Venetia Limpopo Nature Reserve including the area around the mine (Huffman 2010). These processes resulted in the identification of a number of sites within the mining area precinct. Because the impact assessment was carried over different times, it is possible that some sites which in earlier times had no immediate danger were exposed to risk once the scope of existing activities was realigned. In line, with the recommendations of various impact assessors, archaeological sites were fenced off to protect them from danger even if they were of lowly grade 3 significance.

During 2013-2014, Venetia Mine opted to create a buttress wall around the Fine Residue Deposit (FRD) (Figs 4) which is the deposit facility used to deposit slimes from the mining treatment process. The buttress wall has many operational and environmental benefits to the mine, such as increasing the stability of the FRD; the buttress also ensures that the mine will be able to sustainably rehabilitate the side slopes of the FRD. Operationally the mine requires the buttress to increase the life of the FRD, as well as to ensure no further footprint areas are disturbed. The buttress will be created by depositing larger rocks from the Waste Rock Dump, which aids the rehabilitation process and stabilizes the facility. The two (2) other waste streams the mine generates are the Waste Rock and the Course Residue Deposit (Fig 4). These mining waste facilities have been operated from the commissioning of the mine in 1992 and will be operated until 2040+. As the mining method changes to underground the amount of waste rock material the mine generates will significantly reduce.

To secure the Fine Residue Deposit (Fig 4), Venetia Mine decided to erect a buttress wall which will be constructed using waste rock from the mining. The process of constructing the buttress wall (Fig 5) involves the following:

- Minimal removal of top soil.
- Minimal removal of remaining overburden to create stable foundation
- Carrying of waste rock from the Waste Rock Dump to the buttress wall
- Stacking the waste rock to a height of 20 metres to secure the fine residue

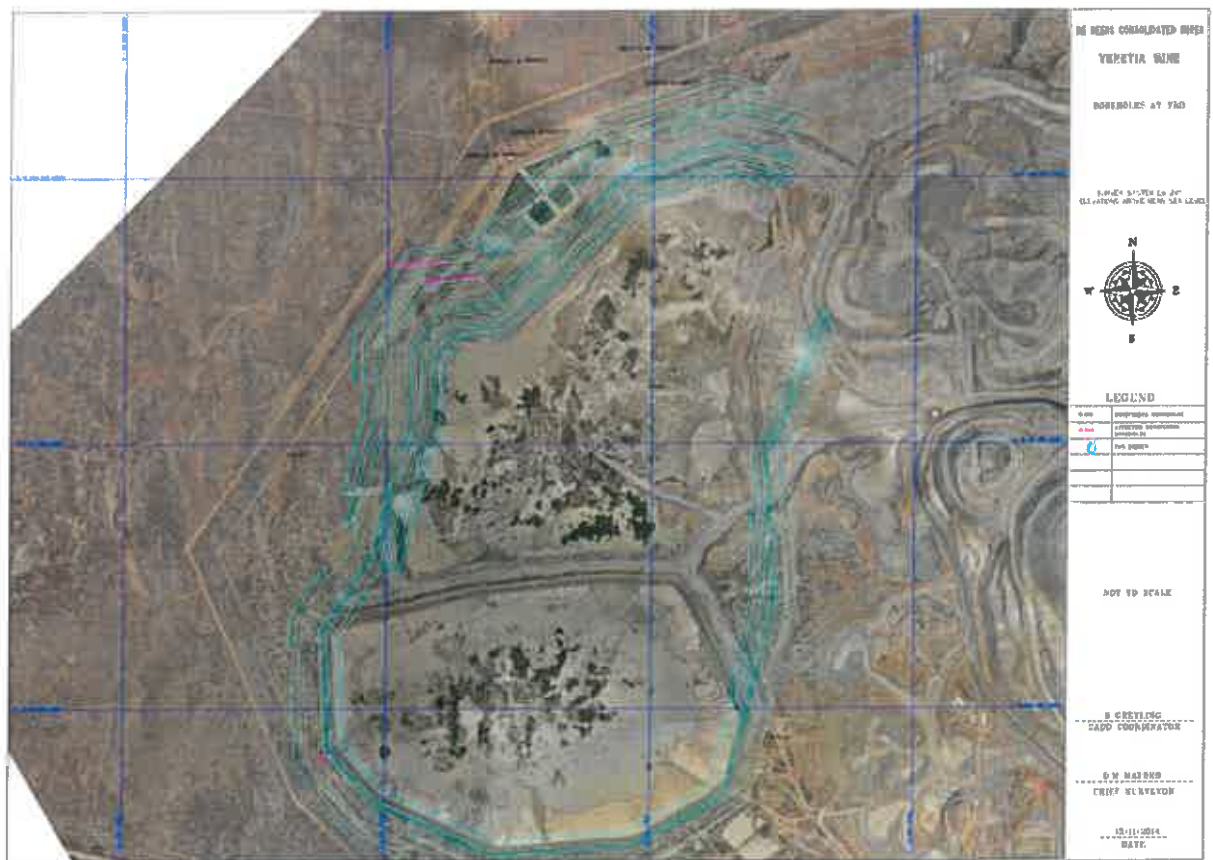


Figure 4 shows the plan of the buttress wall



Fig 5 shows construction of the buttress wall in an already disturbed environment

All the impact assessments carried out as part of the establishment and operation of Venetia Mine identified a single Khami site on the margins of the Fine Residue Deposit. This site (22°25'48.91"S, 29°17'33.70"E) (Fig 6) was initially fenced off and primarily consisted of a low stone wall associated with undecorated pottery. The site was of the lowly grade 3 significance and had extremely low excavation potential. This site has been severely compromised by the flooding such that it is best to apply for a destruction permit.

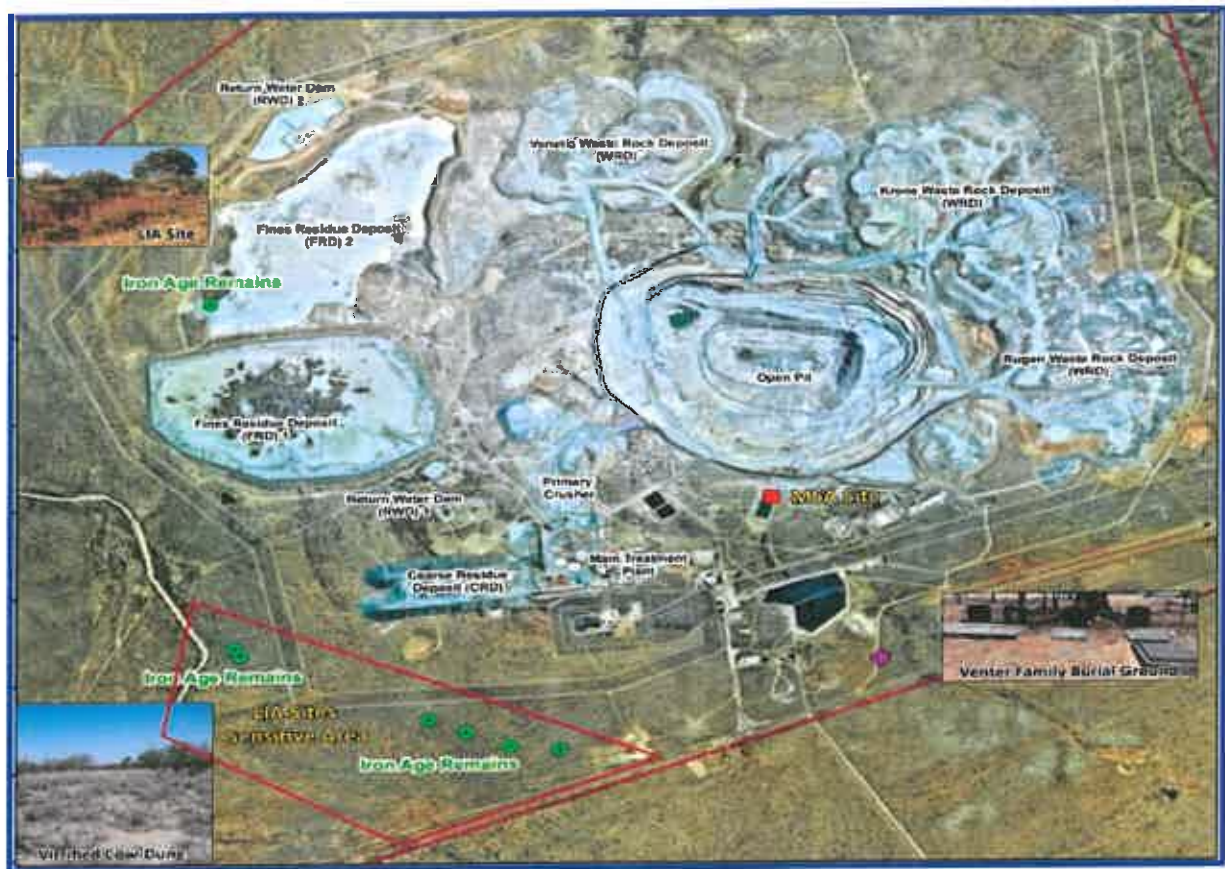


Figure 6 shows Venetia Mine in relation to archaeological sites identified during impact assessment processes

In areas where there are no known archaeological sites, Siyathembana carried out monitoring of the exposed ground as well as carrying out a thorough pedestrian survey to ensure that no sites are covered by the buttress wall. This was however a cautious approaches taken for an area that had already been disturbed through cumulative years of mining. No new sites were discovered during the monitoring and no chance finds were discovered.

8. Monitoring of the assets inside the buffer and core of the Mapungubwe National Park and World Heritage site

Venetia Mine has a historical relationship with the buffer and core of the Mapungubwe National Park and World Heritage site. The mine abstracts its water from boreholes situated along the Limpopo River. Some of the water is pumped to Schroda Dam where it is stored

before being transported via a pipeline to the mine. In certain instances, heavy rainfall exposes sections of the pipeline through soil erosion. In such cases, Venetia Mine and SANParks, have rehabilitated these areas and cladded them to reduce further flooding/ erosion damage. One of the areas affected by erosion is the area which is at least 400 metres away from Mapungubwe Hill. Since 2013, this area is periodically monitored and rehabilitated. Figure 7 below shows the eroded area before and after rehabilitation.

MAPUNGUBWE HILL VIEW - BEFORE



MAPUNGUBWE HILL VIEW - AFTER



2

Figure 7 shows the eroded area in front of Mapungubwe Hill before and after rehabilitation (Source: DBCM)

Figure 8 shows another part of the core before and after rehabilitation.



The Siyathembana team carried out an inspection of the facilities in November 2014 and January 2015 to consider their likely impact on the attributes that convey Mapungubwe's OUV. The following results were achieved:

- a. For most of its length, the pipeline in both the buffer and core is not affected by erosion.
- b. No archaeological sites are nearer to the pipeline for most its length.
- c. There are however some areas that as a result of topography are heavily affected by soil erosion. These expose the pipeline, creating a negative visual impact.

This was rehabilitated and cladded to ensure no future erosion will be take place. The power line poses a negative visual impact on Mapungubwe Hill. However, plans are well developed to relocate it.

- d. Barring these minor maintenance issues, Venetia Mine has no direct impact on attributes that convey Mapungubwe's OUV.

9. Conclusion and recommendations

Monitoring is an important component of heritage management and conservation. As such, the National Heritage Resources Act of 1999 has provisions for monitoring developments with potential to impact on heritage resources. Venetia Mine carries out monitoring of archaeological sites within its premises and also monitors the condition of its infrastructure in the core and buffer zones. The monitoring in this report was carried out for the consolidation of existing activities around the Fine Residue Deposit as well as a ground inspection of assets in the core and buffer. The following conclusions were reached:

1. No new sites were discovered during the minimal top soil removal associated with the construction of the buttress wall.
2. No chance archaeological finds were discovered during the construction of the buttress wall
3. The construction of the buttress wall took has commenced in an area already disturbed by mining. In other words, the FRD is a pre-existing facility. The buttress wall only served the purpose of creating additional capacity, stabilising and rehabilitating it. .
4. The Khami site lies on the edge of the dam within the FRD. Slime covered the low and small stone walling making up the site. Given its low significance, and lack of excavation potential, it is recommended that a destruction permit must be obtained from SAHRA in terms of the National Heritage Resources Act of 1999.
5. The Venetia Mine facilities are inside the buffer and core do not have a direct impact on attributes that convey Mapungubwe's OUV. Routine maintenance is carried out to rehabilitate areas affected by erosion

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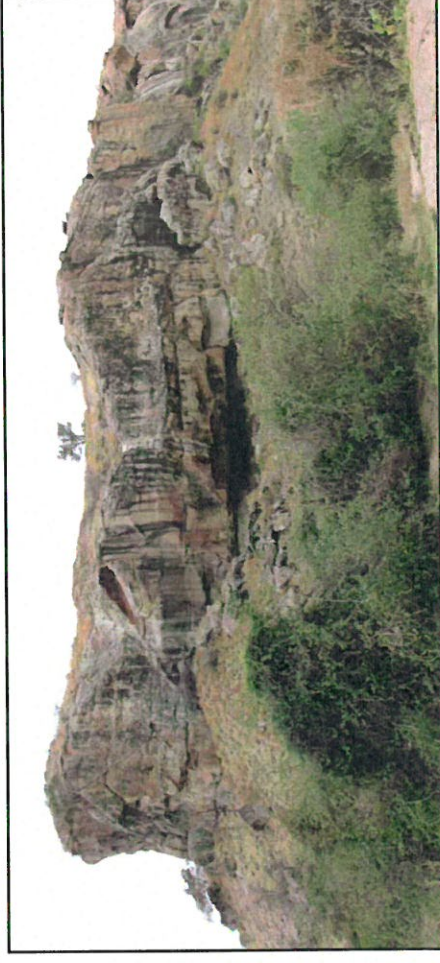
**MAPUNGUBWE NATIONAL PARK AND WORLD
HERITAGE SITE PIPELINE REHABILITATION
PROJECT**
14.09.2015

BACKGROUND

Confidential

Venetia Mine in collaboration SANParks embarked on the rehabilitation of the exposed pipeline area at the foot of Mapungubwe Hill and World Heritage site during Sep/Oct 2013.

The primary focus of the project was to eliminate the visual effects caused by the exposed water supply pipeline which had been exposed during excessive rainfall in the first quarter of 2013. Venetia Mine and SANParks agreed upon a rehabilitation plan which was jointly managed by Venetia Mine and SANParks.



The rehabilitation effort was deemed to be a huge success, receiving a positive response from various SANParks officials as well as visitors to the Park.

Various follow up inspections and site visits to the rehabilitated area were conducted after Sep/Oct 2013 to monitor the integrity of the water diversion structures as well as the re-establishment of vegetation cover in the effected areas.

The latest site visit and inspection was conducted on 11 September 2015.

MAPUNGUBWE NATIONAL PARK AND WORLD HERITAGE SITE PIPELINE PROJECT

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The exposed pipeline before any work commenced during Sep/Oct 2013.



No pipeline visible after the initial rehabilitation work. Note that vegetation cover had not been established yet.



MAPUNGUBWE NATIONAL PARK AND WORLD HERITAGE SITE PIPELINE PROJECT

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No pipeline visible after the initial rehabilitation work. Note that vegetation cover had not been established yet.



No pipeline visible during the last inspection. Note that vegetation cover has been established and restored.



MAPUNGUBWE NATIONAL PARK AND WORLD HERITAGE SITE PIPELINE PROJECT

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The exposed pipeline before any work commenced during Sep/Oct 2013.



Rehabilitated site as on 11 September 2015.



SPECIFIC AREAS REHABILITATED

Confidential



Before rehabilitation commenced



Directly after rehabilitation

SPECIFIC AREAS REHABILITATED

Confidential



Directly after rehabilitation



Site as on 11 September 2015

SPECIFIC AREAS REHABILITATED

Confidential



Before rehabilitation commenced



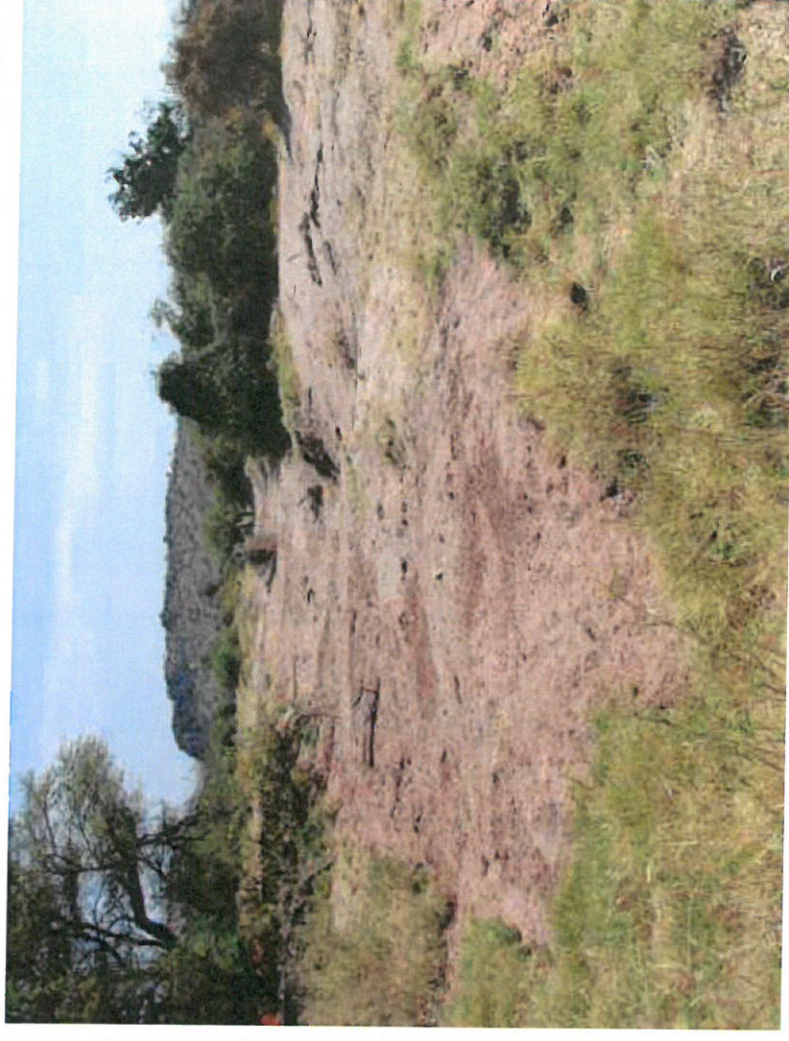
Site as on 11 September 2015

SPECIFIC AREAS REHABILITATED

Confidential



Before rehabilitation commenced



Directly after rehabilitation

SPECIFIC AREAS REHABILITATED

Confidential



Directly after rehabilitation



Site as on 11 September 2015

SPECIFIC AREAS REHABILITATED

Confidential



Before rehabilitation commenced



Directly after rehabilitation

SPECIFIC AREAS REHABILITATED

Confidential



Directly after rehabilitation



Site as on 11 September 2015