

PHASE 1 HERITAGE IMPACT ASSESSMENT REPORT

PROPOSED MAKHADO COLLIERY

INTEGRATED REPORT FOR THE:

1. OPENCAST MINE & INFRASTRUCTURE
2. BULK POWER SUPPLY
3. OFF SITE TRANSPORT – RAILWAY LINE & SIDING

VHEMBE DISTRICT MUNICIPALITY
LIMPOPO PROVINCE

FOR: Jacana Environmental cc
P O Box 31675
Superbia, 0759

Frans Roodt

April 2012

Tel: (015) 2257075
Cell: 083 770 2131
Fax: 086 670 9130
E-Mail: hr19@mweb.co.za



PO Box 1600
POLOKWANE
0 7 0 0

Executive Summary

This report addresses the proposed development of the Makhado Colliery on the farms Windhoek 649 MS, Tanga 648 MS, Fripp 645 MS, Lukin 643 MS, Boas 642 MS and Salaita 188 MT, located north of Louis Trichardt, along the foothills of the Soutpansberg. The report includes the results for the proposed BULK 22kV POWER SUPPLY from the Paradise Substation at Ha-Rabali Township on the farm M'Pefu 202 MT and the proposed development of a RAILWAY LINE & SIDING to and at the present Huntleigh Siding.

During the survey it was revealed that the area is rich in cultural heritage with over one hundred and twenty find places being recorded, which includes Stone Age, Iron Age, Historical Period remains and Graves. Intangible Heritage was also recorded, through a process of social consultation in liaison with Naledi. Not all the find places represent archaeological or heritage sites in the full sense but indicate the presence of some type of cultural remains. Many of the find places were also compromised or could not be clearly identified within the cultural sequence of the area and therefore needs further evaluation by means of Phase 1B assessments. Nevertheless, no specific archaeological or historical site was assessed to be of such significance that it presented a fatal flaw for the development of the proposed mine and infrastructure.

There are however, a number of graves located within the west pit and stockpile areas. A consultative process should immediately be implemented to obtain consent from the next of kin and traditional authority for the relocation of these graves. The threat that the mine poses for the formal cemetery on the farm Fripp, which is associated with the Fripp (Mudimeli) village, must be evaluated and stakeholder engagement should start as soon as possible.

Mitigation and management measures include Phase 1B and Phase 2 archaeological assessments for the Iron Age remains, which will be phased in as the mine develops. These assessments must be concluded for each phase of expansion before mining operations threaten the heritage remains. It is also recommended that an independent Stone Age specialist be appointed to assess the Stone Age material on the farms.

CONTENTS

5	1. Introduction
	1.1.1 Project description – Makhado Colliery
	1.1.2 Activity description
	1.1.3 Extent of operation
7	1.1.4 Mine Scheduling
	1.2 Integration of specialist studies
	1.3 Terms of reference
8	2. Relevant legislation
	2.1 The National Heritage Resources Act (25 of 1999) (NHRA)
	2.2 The Human Tissues Act (65 of 1983)
10	3. Methodology
	3.1 Sources of information
	3.2 Limitations
11	3.3 Categories of significance
	3.4 Terminology
12	4. Baseline information
13	5. Results of the Survey: Mining and infrastructure areas
	5.1 Table of recorded heritage remains
21	5.2 Discussion
23	5.3 Threatened heritage remains
26	5.4 Recommendations
28	6. Result of the survey for the Bulk 22kV Power Line
	6.1 Introduction
	6.2 Result of the survey
29	6.3 Discussion
	6.4 Recommendations for management and mitigation measures
29	7. Result of the survey for the Off-Site Product Transport: Siding & Railway Line
	7.1 Introduction
	7.2 Result of the survey
30	7.3 Discussion
	7.4 Recommendations for management and mitigation measures
32	8. Evaluation and statement of significance
33	9. Proposed heritage management guidelines for Makhado Colliery
35	10. References

List of figures

36	Fig 1. General view of development area
36	Fig 2. General view of part of the development area
36	Fig 3. Possible grave at site 1
36	Fig 4. Another possible grave at site 1
36	Fig 5. Pottery, Site 2

36	Fig 6. Grinding stone, Site 3
37	Fig 7. General view, Site 5
37	Fig 8. Cupule, site 5
37	Fig 9. Gaming board, Site 5
37	Fig 10.Pottery, Site 6
37	Fig 11.Possible grave site 8
37	Fig 12.Stone flakes, site 9
38	Fig 13.Site 11
38	Fig 14.Stone walling, site 11
38	Fig 15.View, Site 12
38	Fig 16.Pottery and ash, Site 12
38	Fig 17.Graveyard, Site13a
38	Fig 18.General view, Site 21
39	Fig 19.General view, Site 23
39	Fig 20.Ceramics, site 23
39	Fig 21.Ceramics, stone tool and smoothing stone- site 21
39	Fig 22.Ceramics and animal bone site 22
39	Fig 23.Ceramics and spindle whorl site 24
39	Fig 24.Ceramics from site 33
40	Fig 25.Ceramics from site 34
40	Fig 26.Photo shows the level of degradation at site 35
40	Fig 27.Ceramics from site 35
40	Fig 28.Stone Age material from site 37
40	Fig 29.View of natural environment- Site 37
40	Fig 30.Ceramics from site 38
41	Fig 31.Ceramics scatter from site 39
41	Fig 32.Stone cairn site 40
41	Fig 33.Ceramics from site 41
41	Fig 34.Ceramics and cupule from site 44
41	Fig 35. Ceramics from site 46
41	Fig 36. Glass and Ostrich egg shell beads- site 46
42	Fig 37.Grave at site 48 View of site 37
42	Fig 38. View of grave at site 49
42	Fig 39. Graffiti at site 55
42	Fig 40.View of overhang -site 55
42	Fig 41.Site 56
42	Fig 42.View of grave at site 57
43	Fig 43.Grave 62
43	Fig 44.Grave 65
43	Fig 45.Grave 66
43	Fig 46.Material remains from site 68
43	Fig 47.View of site 68
43	Fig 48.Iron adze near grain bins stand on site 71
44	Fig 49. Ceramics from site 74
44	Fig 50.General view, Site 74
44	Fig 51.Iron spear, site 75
44	Fig 52. General view, Site 78
44	Fig 53. Ceramics site 79
44	Fig 54. View of burnt grain bin rubble, site 80
45	Fig 55. View of Middle Stone Age material, site 81
45	Fig 56. View of cores and smoothing stone, site 84
45	Fig 57. Dried fountain at site 86
45	Fig 58. Child's grave at site 87
45	Fig 59. Graves site 88
45	Fig 60. Fountain eye in dense bush site 89
46	Fig 61. Ostrich eggshell bead – site 91

- 46 Fig 62. Isolated Mutamba style potshard - site 96
 46 Fig 63. Erode area adjacent to stream containing Stone Age material – site 97
 46 Fig 64. Open Iron Age site with midden deposit, upper grinder and grain bin stand – site 98
 46 Fig 65. Iron Age site with low frequency surface pottery, grain bin stand, upper grinder – site 100
 46 Fig 66. MSA flake at site 102
 47 Fig 67. Small Acheul hand axe – site 104
 47 Fig 68. Iron Age remains consisting of upper grinders and a scattering of potshards
 47 Fig 69. Open Iron Age site with low frequency of cultural material – only small number of potshards and ashy soil – site 113
 47 Fig 70. Example of a rocky outcrop containing Stone Age material – site 117
 47 Fig 71. MSA core – site 120
 47 Fig 72. Open grass covered patch resembling an Iron Age site, but containing no surface cultural material 121
 48 Fig 73. Terracing at site 1.
 48 Fig 74. Abandoned school ruin near sites 1 – 3.
 48 Fig 75. Modern remains at site 2.
 48 Fig 76. Structural remains at site 3.
 48 Fig 77. Terracing at site 4.
 48 Fig 78. Stone walling and terracing at site 5.
 49 Fig 79. Open sandy area at site 6.
 49 Fig 80. Pottery fragments at site 6.
 49 Fig 81. Brick ruin at site 7.
 49 Fig 82. Flaked core stone.
 50 Fig 83. General view of route (CoenBritz).
 50 Fig 84. General view of route showing drainage line (Vrienden).
 50 Fig 85. Typical farm road crossed by the line.
 50 Fig 86. MSA flakes recorded at 2 on locality map 1 (CoenBritz).
 50 Fig 87. MSA flake and small hand axe recorded at 3 on locality map 1 (Rissik).
 50 Fig 88. Ruin of a farm school on Vrienden.

51 **Annexure 1; History of the Musekwa Chieftainship**

- 58 Locality Map 1: Mining and Infrastructure areas.
 59 Google image: Archaeological sites recorded in Loubser
 60 Locality Map 2: Bulk Electricity supply
 62 Locality Map 3: Railway line and Siding

1. INTRODUCTION

1.1.1 Project Description – Makhado Colliery

This report addresses the development of an open cast coal mine on the farms Windhoek 649 MS, Tanga 648 MS, Fripp 645 MS, Lukin 643 MS and Salaita 188 MT located north of Makhado Town, along the foothills of the Soutpansberg. Associated with the mine is the proposed development of bulk electricity supply from the Paradise sub-station at Ha-Rabali and the bulk product transport infrastructure by means of a new railway line to Huntleigh near Mopane.

The proposed open cast development is situated within the Makhado Local Municipality in the Vhembe District Municipality, along the Nzhelele dam road (R525). The terrain on the five farms is diverse and includes the north facing Zoutpansberg foothills, sandstone ridges, calcrete outcrops and the Mutamba River floodplain.

1.1.2 Activity description

A New Order Mining Right (NOMR) application for the Makhado Colliery Project was submitted on 20 January 2011 to the DMR and the application was accepted by the DMR on 25 February 2011.

The area covered by the mining right application (MRA) covers five (5) farms with a combined area of 7 634.32 hectares and an estimated coal mining reserve of 169 MT in situ in the Soutpansberg coalfield. The mineral to be mined is coal found in the Madziringwe Formation. Within this coal zone the total estimated resource is 860 MT, which may allow for future expansion. The deposit extends from a sub-outcrop at a depth of less than 30m to over 300m on some of the farms.

The Project area is located in the Mopane Sector of the Soutpansberg Coalfield. Within the defined Coal Resource area, a number of seams occur within a 30 to 40m thick carbonaceous zone of the Madziringwe Formation. Six potential mining horizons (seams) have been identified by CoAL and named Upper Seam, Middle Upper Seam, Middle Lower Seam, Bottom Upper Seam, Bottom Middle Seam and Bottom Lower Seam. The Bottom Middle Seam often comprises predominantly mudstone but in certain areas is sufficiently rich in coal to be considered a mining target. However it has not been included in the estimated resources.

The planned opencast mine is to be mined at a Run-of-Mine (ROM) production rate averaging about 8.5-14 MT ROM to produce 2.2 MT of primary product (coking coal) product per year of which some 2.0 MT has been earmarked for Arcelor Mittal's domestic consumption and the remainder for export. The mine aims to produce only coking coal at this stage with a future potential for other export steam and domestic thermal products.

1.1.3 Extent of operation

The proposed Makhado coal mine will be an opencast mining operation, with an estimated 8.5-14 MT of ROM coal to be produced per year. The life of the mine (LOM) for the proposed open pit mine is estimated to be approximately 16 years. The colliery, which is planned on various portions of the farms Windhoek 649 MS, Tanga 648 MS, Fripp 645 MS, Lukin 643 MS and Salaita 188 MT, will mine the coal from three opencast pits (referred to as the West Pit, Central Pit and East Pit) located east of the N1 National Road and to the south of the Provincial Road D745. Intermediate crushers will be located to the south of each of these pits.

Mining will commence from the west side of the East Pit at the sub outcrop on the southern extent of the coal reserve. The extent of the mining area is predetermined by the extent of the coal seam located on the eastern section of the site.

The approximate extent of mining is:

- East Pit – 500 ha, maximum depth 200m;
- Central Pit – 250 ha, maximum depth 160m;
- West Pit – 280 ha, maximum depth 120m.

The coal processing plant will be located to the south of the East Pit. In addition to the open pits, the colliery will consist of the following surface workings:

In addition to the operational open pits, the colliery will consist of the following surface workings:

- Topsoil stockpiles;
- Overburden stockpiles (for start-up period until a wedge has been opened up in the pits so that the overburden can be used as fill);
- ROM coal storage area;
- Intermediate crusher/screening plant (at each of the three opencast pits);
- Associated conveyors from intermediate crusher/screening plants to the processing plant;
- ROM coal processing plant (primary, secondary and tertiary crusher);
- Associated conveyors from the processing plant to the product storage areas;
- Product stockpile areas and overland conveyor to RLT on Boas;
- Carbonaceous (discard) stockpile area;
- Haul roads and service roads, including a bridge over the Mutamba River;
- Earthmoving vehicle workshops;
- Clean and dirty water management infrastructure;
- Water storage structures and settling ponds;
- Water reticulation systems;
- Change houses and offices;
- Wastewater (sewage) treatment plant;
- Main entrance gate security and freight area;
- Bulk electricity supply infrastructure;
- Bulk water supply infrastructure (still to confirm);
- Bulk fuel storage facilities;
- Explosives magazine;
- Recruitment and training centre;

- Product transport infrastructure (railway line);
- Security structures and fences.

1.1.4 Mine Scheduling

A truck and shovel mining operation has been selected due to the structural nature of the deposit and to reduce the visual and noise impact from the mining operation compared to the use of a dragline shovel. Three mining methods were considered and the Modified Terrace option was selected due to the improvement in safety of the operation, the space created for early in pit overburden disposal and the relatively concentrated mining activities.

Initial mining operations will commence in the higher yielding East Pit and then proceed to the Central Pit and lastly the West Pit.

.Five primary procedures will be implemented during the mining process including:

- removal and stockpiling of topsoil;
- stripping and stockpiling of overburden;
- excavation of coal and backfilling of pit with overburden material;
- replacement and leveling/shaping of topsoil; and
- re-vegetation and maintenance of levelled areas.

The excavated coal material will be transported, via the load and haul method, to the proposed crushing plant which will be located centrally on the site. Here the coal will undergo primary and secondary crushing and will be screened to remove oversize material, mainly rock, the undersize material (-20mm) will report to a Feed to Plant stockpile. This will feed a plant using dense medium separation (DMS) and gravity concentration using reflux classifiers on the fine fractions. Ultrafine material will be beneficiated by froth flotation and de-watered by filter presses. The extraction of coal is primarily a physical process and not a chemical one.

1.2 Terms of reference

Undertake a Phase 1 Heritage Impact Assessment and submit a specialist report, which addresses the following:

- Executive summary;
- Scope of work undertaken, assumptions and limitations;
- Methodology used to obtain supporting information;
- Overview of relevant legislation;
- Results of all investigations;
- Interpretation of information;
- Assessment of impacts (including cumulative impacts) associated with all the stages of the project (construction, operation, closure and post closure);
- Recommendations on other management measures;
- References.

2. RELEVANT LEGISLATION

Two sets of legislation are relevant for this study with regard to the protection of heritage resources and graves.

2.1 The National Heritage Resources Act (25 of 1999) (NHRA)

This Act established the South African Heritage Resources Agency (SAHRA) and makes provision for the establishment of Provincial Heritage Resources Authorities (PHRA). The Act makes provision for the undertaking of heritage resources impact assessments for various categories of development as determined by Section 38. It also provides for the grading of heritage resources (Section 7) and the implementation of a three-tier level of responsibilities and functions for heritage resources to be undertaken by the State, Provincial authorities and Local authorities, depending on the grade of the Heritage resources (Section 8).

In terms of the National Heritage Resources Act (1999) the following is of relevance:

Historical remains

Section 34(1) No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

Archaeological remains

Section 35(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority or to the nearest local authority or museum, which must immediately notify such heritage resources authority.

Subsection 35(4) No person may, without a permit issued by the responsible heritage resources authority-

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

Subsection 35(5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedures in terms of section 38 has been followed, it may-

- (a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
- (b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;

- (c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
- (d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.

Subsection 35(6) The responsible heritage resources authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or meteorite is situated; serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

Burial grounds and graves

Subsection 36(3)

- (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-
- (c) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (d) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in detection or recovery of metals.

Subsection 36(6) Subject to the provision of any law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority-

- (a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
- (b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the content of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

Culture Resource Management

Subsection 38(1) Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development* ...

must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

***‘development’** 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 a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including-

- (a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (b) carry out any works on or over or under a place*;
- (e) any change to the natural or existing condition or topography of land, and
- (f) any removal or destruction of trees, or removal of vegetation or topsoil;

"place means a site, area or region, a building or other structure ..."

*"structure means any building, works, device or other facility made by people and which is fixed to the ground ..."

2.2 The Human Tissues Act (65 of 1983)

This Act protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

3. METHODOLOGY

3.1 Sources of information

Most of the information was obtained through the field survey of the area supplemented by relevant published sources and oral communications with community stakeholders, such as Chief Musekwa and councillors as well as Chief Mudimeli. The survey team consisted of F. Roodt (MA Archaeology, Post Grad Dip in Museum studies), H.M. Roodt-Lewis (BA Hons Archaeology, BSc Hons (Anatomy), and F.E. Roodt (BA Hons Archaeology). Standard archaeological observation practices were followed. Aspects such as favorable geographical and ecological conditions were considered with regard to suitable habitation in the past and such places were inspected where potential heritage remains may be located. Locations of noteworthy heritage remains were recorded by a handheld GPS and plotted on a 1:50 000 map. Archaeological material and the general conditions of the terrain were photographed with cameras.

On a wider historical perspective we interviewed Mr. Chris Olivier (tour operator/guide) and Dr. Dries Bester (environmentalist) both knowledgeable of the region and its history. Neither of them had knowledge of any significant historical event or place in the survey area.

3.2 Limitations

The overall survey was affected by the under-mentioned limitations:

- Dense vegetation limiting visibility in some areas.
- Rural village activities obscuring certain areas.
- Dangerous game such as lions, which prohibited access to the lion camp on Salaita.
- Access denied on properties for the power line and railway line surveys such as on Boas and Rissik
- Because of legal restrictions artifacts below the present soil surface could not be accessed.

3.3 Categories of significance

The significance of archaeological sites is rated into the following categories.

1.	No significance: sites that do not require mitigation.
2.	Low significance: sites that <i>may</i> require mitigation after a further Phase 1B assessment.
3.	Medium significance: sites that require mitigation.
4.	High significance: sites that must not be disturbed at all or require special mitigation.

The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences.

A crucial aspect in determining the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. Many aspects must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed. These are generally sites graded as of low or medium significance.

3.4 Terminology

Early Stone Age:	Predominantly the Acheulean hand axe industry complex dating to ± 1 Myr – 250 000 yrs. before present.
Middle Stone Age:	Various lithic industries in SA dating from ± 250 000 yrs. - 30 000 yrs. before present.
Late Stone Age:	The period from ± 30 000 yrs. to the contact period with either Iron Age farmers or European colonists.
Early Iron Age:	Most of the first millennium AD.
Middle Iron Age:	10 th to 13 th centuries AD.
Late Iron Age:	14 th century to colonial period. <i>The entire Iron Age represents the spread of Bantu speaking peoples.</i>
Historical:	Mainly cultural remains of western influence and settlement from AD 1652 onwards – mostly structures older than 60 years in terms of Section 34 of the NHRA.
Phase 1 assessment:	Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.
Phase 1B assessment:	The sampling of sites by collecting material, small test pit or shovel pit excavations or auger sampling.

Phase 2 assessment: In depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features.

Sensitive: Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

4. BASELINE INFORMATION

In terms of Huffman's (2007) distribution sequences of the Iron Age, the project area may contain the remains of the under-mentioned culture historical groups:

- ***Urewe Tradition***, originating in the Great Lakes area of Central Africa, was a secondary dispersal centre for eastern Bantu speakers. It represents the eastern stream of migration into South Africa.
 - Kwale Branch:
Mzonjanifacies (Broederstroom) AD 450 – 750 (Early Iron Age)
 - Moloko (Sotho-Tswana) Branch (Late Iron Age)
Icon facies AD 1300 – 1500: This pottery is associated with the first Sotho Tswana people entering the country.
- ***Kalundu Tradition***, originating in the far North of Angola, was another secondary dispersal centre for eastern Bantu speakers and represents the western stream of migration into South Africa.
 - Benfica Sub-branch:
Bambatafacies AD 150 – 650 (Early Iron Age)
 - Happy Rest Sub-branch:
Happy Rest facies AD 500 – 750 (Early Iron Age)
Malapatifacies AD 750 – 1030 (Early Iron Age)
Eilandfacies AD 1000 – 1300 (Middle Iron Age)
Mapungubwe facies AD 1250 – 1300 (Middle Iron Age)
Mutambafacies AD 1250 – 1450 (Middle Iron Age)
Khamifacies AD 1430 – 1680 (Late Iron Age)
Tavatshenafacies AD 1450 – 1600 (Later Iron Age)
*Letabafacies AD 1600 – 1840 (Later Iron Age)

*Letaba pottery is associated with modern day Venda people and can be found in any Venda village. The presence of this style of pottery must be evaluated in conjunction with its associated cultural material in order to determine whether it comes from an archaeological, historical or a contemporary source.

The project area falls in an area where no known heritage survey had been undertaken in the recent past. However, a number of archaeological sites have been identified by Loubser (1991), while doing

research on Venda ethno-archaeology for his PhD during the mid-1980's, which is included here in the form of a Google image showing the locations of sites within approximately 30 km of the proposed development.

Loubser integrated oral traditions, archaeology and ethnography to show that the Venda people originated locally and inhabited the Zoutpansberg a century before the Singo conquest of the current ruling lineages. The archaeology shows a local development of a Venda ceramic style (called Letaba) from the overlap between Shona and Sotho styles and independently supports linguistic evidence that the Venda language is an amalgamation of Shona and Sotho.

Loubser(1991) distinguishes five (5) settlement patterns in the Zoutpansberg area according to a chronological order. The first and presumably the oldest is the **central cattle pattern**, where settlements have one or several contiguous dung concentrations and the settlement is arranged around the dung concentration.

The second settlement pattern is the **Zimbabwe pattern**, characterized by regularly coursed-walls arranged in tight semi-circles and irregular enclosures along the upper portion of the site. Dwelling remains occur among the walls, but also extends well beyond the limits of the walls.

Loubser also distinguishes the **Dzata** pattern, which is very similar to the Zimbabwe pattern, but are characterised by short sections of walls that are semi-coursed and long sections of roughly stacked walls. The semi-coursed walls occur either in isolation or as part of roughly stacked walls.

The fourth is the **Mutzheto** pattern where settlements have stackedterraced walls (mutzheto). The walls demarcate the main residential area and are arranged in interlinking terraced enclosures along the upper portion of the settlement. Dwellings sometimes occur in a wide arc below the main walled cluster. Mutzheto sites share features with both Zimbabwe and Dzata patterns.

Lastly, from the 1830's conquered Chiefs were forced to abandon their Mutzheto settlements by their victors and forced to settle on the open flats; the **Dzanani** pattern. This was also the case after the Boers defeated the RamabulanaSingo in 1889. The subsequent re-settlement programme under British rule from 1902 forced the Western Venda to settle on the plains. Thereafter western Venda villages seldom included stone walling.

5. RESULTS OF THE SURVEY: MINING AND INFRASTRUCTURE AREA

5.1 Table of recorded heritage remains (Presented in this format because of the large number of finds)

Mining area field survey heritage record			
Location/find place number	Farm	Description	Rating/Action
1. S22°49'26.2" E29°55'13.1" S22°49'25.6" E29°55'00.6" S22°49'25.1" E29°55'05.0"	Tanga	Recent Historical Site, with ash, a bullet jacket, glass etc. and ruin mud wall. Covers a wide area of habitation. Two piles of stone are <i>thought</i> to be graves were indicated by Musekwa councilors.	4 – grave verification through consultation and protect
2. S22°48'06.3" E29°55'04.2" S22°48'10.0" E29°54'59.6"	Tanga	Iron Age pottery remains between Mutamba River and a low sandstone outcrop, small midden with fragments; pottery fragments including some	2 – not affected

		decorated fragments occur scattered in the area. Too fragmented to positively identify the culture.	
3. S22°47'47.3" E29°55'43.9"	Tanga	Iron Age remains containing a grinding stone, and some pottery fragments. Not positively identified.	2 – not affected
4. S22°48'22.2" E29°55'06.6" S22°48'22.9" E29°55'07.1" S22°48'22.9" E29°55'07.0"	Tanga	Recent remains on calcrete raise, with pottery shards, glass fragments, and some metal remains, possible floor, but could also be burned termite mound. Stone concentration, which might be a possible grave, could also be from stone clearance, needs further investigation.	4 – not affected, but protect.
5. S22°48'26.0" E29°57'32.0" S22°48'22.8" E29°57'34.5" S22°48'26.3" E29°57'23.3"	Frripp	Iron Age site on sandstone ridge in the existing village on Frripp, Mudimuli. Site contains pottery fragments, decorated and undecorated, some dolly holes and game boards on the rocks. Site extends to east and west according to the coordinates. Letaba pottery.	4 – not affected
6. S22°47'47.0" E29°57'44.4"	Frripp	Iron Age remains next to erosion ditch, containing some possible midden deposits, pottery fragments, and a broken spindle whorl weight. Letaba pottery.	2 – Phase 1B assessment if affected
7. S22°47'37.6" E29 57'25.3"	Frripp	Stone Age site in erosion gully, with Middle Stone Age and one Acheulbiface.	3 – not affected
8. S22°47'20.8" E29°57'18.3" S22°47'20.7" E29°57'19.6"	Frripp	Iron Age remains; could possibly be more recent. On a raise next to the river with some pottery fragments and very low stone packing, a cattle enclosure can be seen. Possible grave close to the above site, grave is stone stacked.	2 – not affected 4 - grave to be protected
9. S22°47'14.5" E29°57'32.8"	Frripp	Iron Age remains on small raise, similar to site 8, but also contains some MSA flakes.	2 – not affected
10. S22°47'16.9" 29°57'38.4"	Frripp	Iron Age remains, similar to above with cattle enclosure.	2 – not affected
11. S22°49'29.5" E29°55'29.5"	Tanga	Iron Age remains on foothills of the mountain. A small flat area is formed with some pottery fragments and a simple circular stone wall, most likely a cattle enclosure.	3 – Not affected
12. S22°49'34.7" E29°55'08.8"	Tanga	Iron Age remains, on foothills. Cutting formed by road with midden deposits and pottery fragments.	3 – Phase 2 assessment
13a. S22°48'48.2" 29°56'39.9" 13b S22°48'25.4" 29°57'14.7"	Frripp	Formal Graveyard of the village on Frripp. Another cemetery (13b) is located inside the Mudimeli village.	4 Consultation for relocation if affected
14. S22°47'53.7" E29°56'27.6"	Frripp	Site with pottery fragments and stone stacking, which could be a possible grave, but it is most likely just a stone heap.	4 – not affected, grave verification

			through consultation if affected
15. S22°48'07.2" E29°56'30.9"	Frripp	3 Possible graves with stone packing and a recent site, with what appears to be the remainder of house foundations and some pottery fragments.	4 – grave verification through consultation and relocation if affected
16. S22°48'17.5" E29°56'42.8"	Frripp	4 Possible graves on sandstone ridge close to the village, graves are stone stacked, with some pottery.	4 – grave verification through consultation and relocation if affected
17. S22°48'15.9" E29°56'46.5"	Frripp	Iron Age pottery fragments near sandstone ridge in open flat areas.	1 – Phase 1B assessment
18. S22°48'34.9" E29°56'14.5"	Frripp	Iron Age pottery fragments.(non-diagnostic)	2 – Phase 1B assessment
19. S22°47'58.5" E29°56'15.8"	Frripp	Iron Age remains on calcrete outcrop, with some pottery fragments and possible cattle enclosure	3 – Phase 2 assessment
20. S22°47'13.6" E29°59'18.7"	Lukin	Pottery on calcrete outcrop (non-diagnostic).	2 – Phase 1B assessment
21. S22°47'03.0" E29°59'13.6"	Lukin	Large open area on calcrete outcrop - pottery (non-diagnostic). + Early Stone Age material.	2 – Phase 2 assessment
22. S22°46'53.0" E29°59'14.4"	Lukin	Large open area on calcrete outcrop with cattle enclosure deposit, pottery and well preserved deposit NB (non-diagnostic).	3 – Phase 2 assessment
23. S22°46'49.9" E29°59'24.4"	Lukin	Pottery near sandstone outcrop, Possibly Tavhatsheha.	2 – Phase 1B assessment
24. S22°46'40.7" E29°59'27.5"	Lukin	Mutamba pottery in open Mopani patch. Spindle whorl present.	2 – Phase 1B assessment
25. S22°46'13.6" E30°00'25.4"	Salaita	Pottery fragments near drainage line (non-diagnostic) + Early Stone Age material.	2 – Phase 1B assessment
26. S22°46'36.2" E29°59'51.0"	Lukin	Pottery on sandstone ridge (non-diagnostic).	2 – Phase 1B assessment
27. S22°46'39.5" E29°59'45.9"	Lukin	Pottery on sandstone ridge (non-diagnostic).	2 – Phase 1B assessment
28. S22°47'22.4" E29°58'49.0"	Lukin	Pottery in open patch in Mopani veldt (non-diagnostic)	2 – Phase 1B assessment
29. S22°48'01.4" E29°58'16.8" S22°48'01.2" E29°58'16.9"	Lukin	Pottery in neck of two sandstone hillocks (non-diagnostic). Stone feature & grinding stone.	3 – Phase 2 assessment
30. S22°48'12.3" E29°58'12.7"	Lukin	Pottery on sandstone ridge (non-diagnostic).	2 – Phase 1B assessment
31. S22°47'56.0" E30°00'14.1"	Lukin	Pottery in open area near mountain (non-diagnostic).	2 – Phase 1B assessment
32. S22°46'31.3" E30°00'43.5"	Salaita	Single ceramic vessel, non-diagnostic.	2 – Phase 1B assessment
33. S22°46'08.9" E30°00'25.2"	Salaita	Iron Age site, along drainage line, one	2 – Phase 1B

S22°46'09.8" E30°00'22.3"		diagnostic potshard resembles the Tavatshena facies, and ostrich eggshell beads. Small non-diagnostic ceramic vessel was found nearby.	assessment
34. S22°46'01.1" E30°00'36.0"	Salaita	Clear stone circle, possibly a cattle enclosure, non-diagnostic pottery.	3 – Phase 2 assessment
35. S22°46'17.8" E30°00'00.1"	Salaita	Pottery fragments and grain bin stand in open Mopani patch (non-diagnostic).	3 – Phase 2 assessment
36. S22°46'20.7" E29°59'53.9"	Salaita	Grain bin stand and ashy midden.	3 – Phase 2 assessment
37. S22°46'28.5" E30°59'49.8"	Lukin	Middle Stone Age stone material, flakes and tools.	3 – to be assessed by Stone age specialist
38. S22°46'29.8" E29°59'44.6"	Lukin	Non-diagnostic Pottery fragments.	2 – Phase 1B assessment
39. S22°46'30.2" E29°59'41.0"	Lukin	Pottery scatter and piece of Tuyère pipe.	2 – Phase 1B assessment
40. S22°46'25.5" E29°59'46.9"	Lukin	An unidentified low cairn of packed stone was recorded. It does not resemble a grave but requires further investigation if it is to be affected by the development although it falls just outside of pit area.	2 –protect
41. S22°46'31.7" E29°59'53.8"	Lukin	Cattle enclosure and pottery fragments, tentatively identified as Thavhatshena.	3 – Phase 2 assessment
42. S22°47'02.2" E29°59'05.4"	Lukin	Iron Age site, pottery fragments.	2 – Phase 1B assessment
43. S22°47'03.3" E29°59'02.7"	Lukin	Iron Age site, road has degraded the area and bisects the site.	2 – Phase 1B assessment
44. S22°47'00.3" E29°59'01.7"	Lukin	Cupule on stone moved during the grading of the farm road, non-diagnostic ceramics on a rise.	1 – no action
45. S22°47'23.0" E29°58'59.7"	Lukin	Single non-diagnostic ceramic pot.	1 – no action
46. S22°46'08.8" E30°00'43.4"	Salaita	Large cattle enclosure deposit with ceramics, glass beads and lower grinding stone, grain bin stands - Letaba.	3 – Phase 2 assessment
47. S22°46'04.7" E30°01'03.3"	Salaita	Pottery fragments on sandstone ridge (non-diagnostic).	2 – Phase 1B assessment
48. S22°48'16.5" E29°59'48.4"	Lukin	Graveyard, 12 graves, packed stone, just outside area.	4 – to be protected
49. S22°48'08.8" E29°53'43.2"	Windhoek	2 historical graves.	Not affected, but protect
50. S22°49'44.8" E29°53'59.8"	Windhoek	Low concentration pottery on calcrete outcrop (non-diagnostic).	2 – Phase 1B assessment
51. S22°49'02.3" E29°54'15.3"	Windhoek	Pottery fragments and packed stone–possibly grain bins stands (non-diagnostic).	2 – Phase 1B assessment
52. S22°48'44.1" E29°54'01.4"	Windhoek	Low concentration pottery scatter on floodplain (non-diagnostic).	2 – Phase 1B assessment if affected
53. S22°48'41.9" E29°54'09.1"	Windhoek	Cattle enclosure and midden deposit (non-diagnostic).	2 – Phase 2 assessment
54. S22°48'17.9" E29°54'22.6"	Windhoek	Stone age material and Pottery scatter –	2 – not affected

		possibly Gumanye pottery.	
55. S22°48'14.9" E29°53'26.4"	Windhoek	Rock overhang at sandstone outcrop, Concentration of pottery fragments and stone age material –Site probably of spiritual significance.	3 - not affected, but protect
56. S22°49'51.9" E29°53'27.2" S22°49'51.2" E29°53'26.0"	Windhoek	Pottery fragments on flood plain (non-diagnostic). Extends westwards. Probably Mutamba pottery	2 – not affected
57. S22°50'34.2" E29°53'21.5"	Windhoek	At least 7 graves; 1 grave stone, 6 packed stone.	4 – not affected, but protect
58. S22°49'40.9" E29°53'32.1"	Windhoek	Possible grave on raise. May relate to 60 below.	4 – not affected, but protect
59. S22°49'35.5" E29°53'30.5" S22°49'32.3" E29°53'29.4"	Windhoek	Iron Age remains on floodplain, possibly Mutamba - has been impacted on by erosion. Extends further to the northwest where more ceramics fragments were found.	2 – not affected, but protect
60. S22°49'34.6" E29°53'34.2"	Windhoek	Recent historical midden remains such as cast iron pot pieces.	1 – not affected
61. S22°49'10.9" E29°53'44.3"	Windhoek	Farm labourer area, glass bottles, earthenware ceramics.	1 – no action
62. S22°49'19.7" E29°54'08.2"	Windhoek	Single grave & homestead foundations.	4 – consultation for grave relocation
63. S22°49'15.3" E29°53'47.0"	Windhoek	Earthenware ceramics, possibly related to farm labourer occupation.	1 – no action
64. S22°49'10.4" E29°53'51.0"	Windhoek	Non-diagnostic pottery on calcrete raise, previously ploughed for agricultural purposes.	2 – Phase 1B assessment
65. S22°49'15.4" E29°53'59.1"	Windhoek	Grave with gravestone – Mulaudzi- date: 1910 -1958.	4 – consultation for grave relocation
66. S22°49'14.1" E29°53'59.0"	Windhoek	Grave- headstone has fallen over- could possibly have been disturbed- Grobler T. J. Born 1856, date of death unknown- can no longer be distinguished on gravestone.	4 – consultation for grave relocation
67. S22°49'15.4" E29°54'02.4"	Windhoek	Grave- stacked stone.	4 – consultation for grave relocation
68. S22°49'15.2" E29°54'11.1"	Windhoek	Farm workers settlement, rectangular foundations, bottles dated by a collector to <i>circa</i> 1910-1930.	3 – Phase 2 assessment
69. S22°49'20.6" E29°53'50.9"	Windhoek	Rectangular foundation ruin of recent historical house.	1 – no action
70. S22°49'23.7" E29°53'56.2"	Windhoek	Non-diagnostic pottery scatter.	2 – Phase 1B assessment
71. S22°49'21.4" E29°53'55.9"	Windhoek	Grain bin stand and scattering of pottery shards. A small iron adze was recorded here.	2 – Phase 1B assessment
72. S22°49'12.6" E29°53'52.3"	Windhoek	Rondavel foundation.	1 – no action
73. S22°48'08.7" E29°54'22.4" S22°48'10.8" E29°54'22.1"	Windhoek	Non-diagnostic pottery scatter on raise on the floodplain. Extends southwards.	2 – not affected

74. S22°49'21.2" E29°53'31.1" S22°49'16.1" E29°53'32.3"	Windhoek	Midden deposit and cultural remains next to the river. Contains glass on surface, but could be a contaminated Iron Age deposit.	3 – not affected
75. S22°45'39.0" E30°01'48.4"	Salaita	Iron Age remains, grinding stone, stone platforms- possibly floors. Iron spearhead was recorded here.	3 – Phase 2 assessment if affected by a proposed borrow pit
76. S22°45'45.9" E30°01'46.3"	Salaita	Middle Stone Age.	3 – assessment by Stone Age specialist
77. S22°47'15.3" E29°58'44.7"	Lukin	Middle Stone Age.	3 – not affected
78. S22°47'18.9" E29°58'29.3"	Lukin	Iron Age remains, ceramic scattering and grinding stone.	2 – not affected
79. S22°47'25.3" E29°58'17.9"	Lukin	Iron Age pottery, midden deposit and grinding stone.	2 – not affected
80. S22°47'31.1" E29°58'11.2"	Lukin	Burnt grain bin rubble. 78,79 & 80 may be related.	2 – Phase 1B assessment
81. S22°47'33.3" E29°58'04.0"	Lukin	MSA; small flakes.	2 – assessment by Stone Age specialist
82. S22°47'54.8" E29°59'07.5"	Lukin	Pottery scatter.	2 – Phase 1B assessment
83. S22°46'58.2" E29°58'44.8"	Lukin	Pottery scatter on floodplain.	2 – Phase 1B assessment because it is close to activity area
84a. S22°47'13.2" E29°58'13.8" b. S22°47'13.0"E29°58'22.4"	Lukin	MSA.	3 – not affected
85. S22°46'57.2" E29°59'24.5" S22°46'56.6" E29°59'26.1"	Lukin	Non-diagnostic Iron Age remains. Extends eastwards and seems to be a twin site.	2 – Phase 1B assessment
86. S22°49'29.2" E29°55'20.1"	Tanga	A dried up fountain at the foot of the mountain, which was used in the past by passersby and local communities. Water was scooped and drank while resting in the shade of some large Nyalabessie trees next to the fountain. The site was specifically pointed out by Chief Musekwa and is regarded as important in memory of their ancestors.	4 – Chief Musekwa will communicate what protection it requires
87. S22°50'38.0" E29°53'20.2"	Windhoek	An unknown child's grave in-between the remains of a recent historical homestead of the Singo family. According to the informant the area was evacuated in the early 1920's.	4 – it falls outside the mining area and should not be disturbed
88. S22°50'37.4" E29°53'23.1"	Windhoek	A group of three graves of the Mavhetha family – one has a newly erected modern granite gravestone; buried in 1940. The other two are stone stacked. The remains of the family homestead appear to be about 80 meters to the east of the graves.	4 – it falls outside the mining area and should not be disturbed
89. S22°50'14.9" E29°53'49.5"	Windhoek	A fountain called Mpfuluka, the name by	4 – it falls

		which the general area is known to the Venda people, which was used by the ancestors. The water is believed to have medicinal qualities.	outside the mining area and should not be disturbed
90. S22°46'22.2" E29°58'49.8"	Boas	Single MSA flake.	1 – no action
91. S22°46'32.7" E29°58'17.8"	Boas	Large open Iron Age site on a raise with midden deposit, grain bin stands and low frequency of surface pottery shards. One decorated shard resembles the Thavatshe style.	3 – Phase 2 assessment if affected
92. S22°46'44.8" E29°58'16.0"	Boas	Small isolated cluster of pottery shards – unidentified.	1 – monitoring during construction
93. S22°46'40.5" E29°58'08.0"	Boas	Midden deposit exposed in farm road. Upper grinder, pottery unidentified.	3 – Phase 2 assessment
94. S22°46'37.4" E29°58'03.3"	Boas	Isolated upper grinder.	1 – no action
95. S22°46'35.5" E29°57'59.8"	Boas	Scattering of potshards on edge of stony ridge – no other surface material	1 – monitoring during construction
96. S22°46'33.5" E29°57'54.1"	Boas	Single Mutamba style potshard.	1 – no action
97. S22°46'49.3" E29°57'46.6"	Boas	Eroded area along drainage line containing what seems to be predominantly Earlier Stone Age material.	3 – not affected
98. S22°46'46.5" E29°57'59.7"	Boas	Open Iron Age site with midden deposit, upper grinder and grain bin stand.	3 – Phase 2 assessment if affected
99. S22°46'54.6" E29°58'10.7"	Boas	Open calcrete outcrop that contains a single potshard. Deposit may be subterranean.	1 – Phase 1B assessment if affected
100. S22°46'42.6" E29°58'37.1"	Boas	Iron Age site with low frequency surface pottery, grain bin stand, upper grinder.	3 – not affected
101. S22°46'35.1" E29°58'11.0"	Boas	Open area with sparse tree cover containing Iron Age remains consisting of low frequency potshards and grain bin stand.	2 – Phase 1B assessment
102. S22°46'37.7" E29°58'11.0"	Boas	Quartzite outcrop containing Stone Age material.	2 – assessment by Stone Age specialist
103. S22°46'35.1" E29°58'41.5"	Boas	Iron Age midden remains – eroded; non-diagnostic pottery.	2 – not affected
104. S22°46'37.4" E29°58'43.6"	Boas	Small Acheul hand axe and some scattered Stone Age flakes.	2 – not affected
105. S22°46'37.6" E29°58'29.9"	Boas	Open Iron Age site with pottery and bin stand.	3 – not affected
106. S22°46'36.2" E29°58'58.7"	Boas	Iron Age remains consisting of 2 x upper grinders and a scattering of potshards; probably an indication of floodplain agriculture.	2 – not affected
107. S22°46'36.5" E29°58'51.2"	Boas	A scattering of earlier stone age material including an incomplete hand axe.	2 – not affected
108. S22°46'33.0" E29°58'52.8"	Boas	Stone Age material – both MSA and earlier stone age.	2 – not affected
109. S22°46'45.9" E29°58'49.6"	Boas	Iron Age remains on eroded calcrete	2 - not affected

S22°46'43.8" E29°58'48.8"		outcrop consisting of non-diagnostic potshards and upper grinders.	
110. S22°46'41.3" E29°58'45.9"	Boas	Upper grinder in isolation – probably linked to floodplain agriculture	1 – no action
111. S22°46'52.0" E29°58'36.6"	Boas	Cluster of potshards – no other cultural remains on surface.	2 - Phase 1B assessment if affected
112. S22°46'45.9" E29°58'39.9"	Boas	Cluster of potshards – no other cultural remains on surface.	2–not affected
113. S22°47'09.9" E29°58'15.9" S22°47'08.6" E29°58'16.4"	Boas	Open Iron Age site with low frequency of cultural material – only small number of potshards and ashy soil.	2–not affected
114. S22°46'56.0" E29°58'27.8"	Boas	Quartz outcrop containing Stone Age material.	2 - assessment by Stone Age specialist
115. S22°47'02.6" E29°58'30.3"	Boas	MSA flakes.	1 – not affected
116. S22°46'54.0" E29°58'24.0"	Boas	Calcrete outcrop containing Stone Age material	2 - assessment by Stone Age specialist
117. S22°47'08.9" E29°58'12.2"	Boas	Stony area containing Stone Age material	2–not affected
118. S22°46'59.5" E29°58'17.2"	Boas	Cluster of potshards – no other cultural material.	1 – no action
119. S22°47'07.3" E29°57'54.0"	Boas	Open grassy area containing ashy soil with no surface cultural material.	1 – monitoring
120. S22°47'06.9 E29°57'46.6"	Boas	MSA scrapper.	1 – no action
121. S22°47'15.2E29°57'48.3"	Boas	Open grass covered patch resembling an Iron Age site, but containing no surface cultural material	1 - monitoring
122. S22°47'18.2 E29°57'47.6"	Boas	Rocky outcrop with scattered Stone Age material.	2–not affected
123. S22°47'16.2 E29°57'51.6"	Boas	Isolated potshards.	1 – no action
124. S22°47'12.8 E29°57'51.2"	Boas	Open grass covered patch resembling an Iron Age site, but containing no surface cultural material.	1 - monitoring
125. S22°47'11.6 E29°57'50.0"	Boas	Open grass covered patch resembling an Iron Age site, but containing no surface cultural material.	1 - monitoring
126. S22°47'09.1E29°57'49.1"	Boas	Stone Age material.	2 - assessment by Stone Age specialist
127. S22°47'17.2 E29°57'56.9"	Boas	MSA flakes.	2–not affected

NOTE: All recorded heritage material **do not necessarily constitute a heritagesite** and therefore the number allocated to it rather indicates a location or find place where such cultural remains were recorded, and not a primary heritage site. This is especially true on the floodplains where a scattering of pottery fragments may only indicate agricultural activities and not a settlement. In addition, where cultural material was found on an open calcrete outcrop it was mostly not possible to determine the extent of the site due to the geo-morphology of the terrain, which already tends to stunt and change vegetation growth without the interference of human settlement. For this reason and the fact that the pottery is often non-diagnostic, we recommend Phase 1B assessments in many cases to establish the true identity, integrity and significance of the remains.

5.2 Discussion

5.2.1 Stone Age remains

There is abundant evidence for Stone Age remains in the demarcated area. The presence of the recorded Stone Age material in the exposed gravels indicates the subterranean distribution of artifact bearing gravel. For a comparative analysis, a study by Wits archaeologists in the area west of Mapungubwe on the Hackthorne plateau, where Clarens Formation Sandstone dominates the geology was consulted (Le Baron, et al 2010). Here landscape-scale archaeological investigations were undertaken of the spatial distribution of Stone Age artifacts. It was found that although artifact deposition was widespread, koppies hosted the most intensive activities. Although the geology differs at the proposed Makhado colliery, the methodology used during the Hackthorne investigation, namely the excavation of test pits associated both with specific landscape features and random grid locations may possibly be successfully applied at Makhado in order to determine artifact distribution patterns and assemblages for this area. It is not considered necessary to repeat the Phase 1 survey, but it is recommended that a Stone Age specialist be contracted to undertake further Phase 2 assessments of the Stone Age deposits.

5.2.2 Iron Age remains

Evidence of the presence of Mutambafacies (AD 1250 – 1450), Tavatshenafacies (AD 1450 – 1600) and Letabafacies (AD 1600 – 1840) were found. Although a large number of “find places” or locations with Iron Age remains were recorded, the integrity of most of them is uncertain or compromised. In addition most of these locations cannot be properly described with regard to size, complexity, depth of deposits or the cultural facies to which it belongs without undertaking a certain amount of shovel pit testing (Phase 1B). This so-called Phase 1B assessment is a method by which the uncertain state of a find place can be assessed in order to evaluate its true place and function within the cultural sequence of the area, and thereby its significance and what mitigation measures is required for its management. Phase 1B assessments will also establish repetitiveness of function or occurrence, for example, the presence of a concentration of pot shards on the floodplain; was it related to agricultural activities in which case it may contribute to an understanding of food production, or was it merely an event of water transportation in a ceramic container from the Mutamba River that somehow broke and was discarded along the way.

Some of the recorded locations could be recognised as settlement/occupational sites by virtue of noticeable cultural features; in this case features such as grain bin stands, midden deposits, grinding stones and fairly widespread pottery fragments. In other words, enough evidence could be observed to identify the location as an archaeological site even if the cultural facies or extent of the site is as yet not established.

5.2.3 Rock Art

During surveys the area was thoroughly searched for rock art. This included all overhangs and sandstone ridges, which are the areas in the designated development area where rock art has the greatest probability of existing. No rock art was recorded in the project area.

5.2.4 Historical period

In the mid-19th century (1848) followers of the trekker leader Hendrik Potgieter settled south of the Zoutpansberg in the area where Louis Trichardt camped in 1836, and called the new Town “de Oude dorp”. It was changed to Zoutpansbergdorp and again to Schoemansdal. Schoemansdal was evacuated in 1867 because of hostilities between the settlement and the Venda under Chief Makhado. It was only in 1899 that the town of Makhado (then Louis Trichardt) was established, about 15 km

east of the old Schoemansdal. During this period the route to the north went around the Zoutpansberg (where Vivo is today) until the road to Musina through Wylliespoort was completed in 1908. The development will have no negative affect on early colonial or historical settlements.

5.2.5 Intangible Heritage

Naledi Development was appointed to conduct the social impact assessment for the project. During mid-2010 the company arranged, on behalf of CoAL of Africa, an appeasement ceremony through which the affected local communities communicated with the ancestral spirits concerning the development of the mine. This entire ceremony, which focussed on the ancestral burial place (*Tshiendeulu*) near the ancestral village Tshipange, was video recorded and is available from Naledi Development on request. Those present represented the wider spectrum of affected communities, underlying the fact that a broad base of communities was consulted with regard to the proposed mining development. The ancestral ceremony was attended by representatives from:

- King Mphephu Royal and Traditional Council
- Musekwa Chief, Traditional Council and Community representatives
- Makushu Chief, Traditional Council and Community representatives
- Mosholombi Traditional Council and Community representatives
- Pfumembe Chief, Traditional Council and Community representatives
- Mudimeli Traditional Council and Community representatives
- Sangoma's from the area
- Musekwa land claimant beneficiaries and dignitaries

Summary of the ritual at Tshiendeulu (Royal burial place) as translated from the CD by Richard Munyai

I saw Vho-Makhadzi (sisters to the Chief) given the fresh uncooked goat liver by one of Vho-Khotsimunene (the sons of Chief's younger brothers). After they ate, they put some goat liver and other cooked meat on tree leaves for the ancestors. Mr. Khara "We are here with Vho-Makhadzi and Vho-Khotsimunene to give the offerings to the ancestors"

After the offerings they went to the place where the mining activity will be taking place, to ask safety from the ancestors.

By Nthambeleni Solomon MusekwaMundalamo (Headman Nekhongoni) "Thovhela (His Excellency)Vho-Tshishonga, the head of all The Vhandalamo all over the country. We are here at Haramathikhithi your grandson. We are asking for jobs and the right way to proceed, we also requesting you to take us to Vho-Muvhango and Lihama".

"We came here to ask for jobs. There are people who want to mine coal from your land. Give us permission so that our children and grandchildren can get jobs"

*"We don't have answers to the Miners (Coal of Africa) now. The answer will come to your Son **Nthambeleni Solomon MusekwaMundalamo**, grandson of Tshishonga when he is sleeping; it will come to him in a dream like a vision and it is then that the Coal of Africa will get the answer".*

"We are putting the snuff down here, where the miners will start. Open the way for us so that the miners do not forget us, and let them respect us forever".

Makhadzi; We are asking the safety of this mine so that it must not collapse, we are asking you our ancestors that coals must come out, we need this mine to be opened. Our ancestors Vho-Tshishonga, Vho-Madala, Vho-Sikwhivhilu, Ramudzuli and to those we don't know.

ChiefNthambeleniMusekwa subsequently provided CoAL of Africa with a positive response at a meeting held in July 2010, which was also video recorded.

A brief translation of the speech by ChiefMusekwa reads:

If this was my decision it would already have been finalised, but I had to wait for the ancestors to give me the answer. I also thank CoAL of Africa for understanding about the ancestors.

The first point from the ancestors is that; NthabeleniNthabeleni, be together in order to be one (united). So, when I analyse this, they wanted me and the other Chiefs around here to work together; that is why I called on all Chiefs in this area.

Secondly, Nthambeleni, tell these people that we do not need people who eat alone (a metaphor meaning that the mining may continue – the ancestors gave their approval).

With these proceedings ChiefMusekwa, on behalf of the traditional leaders and communities affected by the proposed mining, gave their approval for the mining to continue.

In October 2010 the author was accompanied by ChiefMusekwa and 8 council members to the affected mining area where they pointed out the sacred fountains and some of the graves mentioned in the recordings above. ChiefMusekwa also spoke about the sacred python and leopard, which reside among the foothills of the Zoutpansberg and through which the ancestors manifest themselves to the local people. These animals may under no circumstances be killed as it will be a bad omen which could affect the spiritual wellbeing of community members. With regard to vegetation, the Chief specifically mentioned the marula tree (*Sclerocarya birrea*), Baobab (*Adansonia digitata*) and Nyalabessie (*Xanthocercis zambesiaca*), which are highly regarded as food and medicinal plants and which should not be removed unnecessarily. Vegetation and rehabilitation is addressed in the EMP.

Lastly, ChiefMusekwa presented the author with a written copy of their history, which is included as **Annexure 1**.

5.2.6 The built environment (>60 years)

The built environment within the proposed mining area mainly consists of Fripp Village (Mudimeli), which was a 1980's political re-settlement programme. The village is not under threat, but should the village be relocated in the future, the entire village must be mapped and surveyed for culturally significant and unique structures and features.

The farms Tanga, Fripp, Lukin, Salaita and Boas have no pioneer farmstead buildings. The buildings on Windhoek will not be affected by the mining.

5.3 Threatened heritage remains

Heritage remains that will directly be affected in the mining and infrastructure area are listed in table format according to find place below. Appropriate mitigation measures are specified.

5.3.1 Remains located in the open cast pit area:

5.3.1.1 East pit:

Location No.	Description	Mitigation
20	Pottery on calcrete outcrop (non-diagnostic).	Phase 1B assessment

21	Large open area on calcrete outcrop with pottery (non-diagnostic). + Early Stone Age material.	Phase 1B assessment
22	Large open area site on calcrete outcrop with cattle enclosure deposit, pottery and well preserved deposit (non-diagnostic).	Phase 2 assessment
23	Pottery near sandstone outcrop, possibly Tavhatshena.	Phase 1B assessment
24	Mutamba pottery in open Mopani patch. Spindle whorl present.	Phase 1B assessment
25	Pottery fragments near drainage line (non-diagnostic) + Early Stone Age material.	Phase 1B assessment
26	Pottery on sandstone ridge (non-diagnostic).	Phase 1B assessment
27	Pottery on sandstone ridge (non-diagnostic).	Phase 1B assessment
32	Single ceramic vessel, non-diagnostic.	Phase 1B assessment; collect and reconstruct if possible
33	Iron Age site, along drainage line, one diagnostic potshard resembles the Tavatshenafacies, and ostrich eggshell beads. Small non-diagnostic ceramic vessel was found nearby.	Phase 1B assessment
34	Clear stone circle, possibly a cattle enclosure, non-diagnostic pottery.	Phase 2 assessment if affected
35	Pottery fragments and grain bin stand in open Mopani patch (non-diagnostic).	Phase 2 assessment
36	Grain bin stand and ashy midden.	Phase 2 assessment
38	Non-diagnostic Pottery fragments.	Phase 1B assessment
39.	Pottery scatter and piece of Tuyère pipe.	Phase 1B assessment
40.	An unidentified low cairn of packed stone was recorded. It does not resemble a grave but requires further investigation if it is to be affected by the development.	It is far enough from the activity area and should only be fenced off for protection
41	Cattle enclosure and pottery fragments, tentatively identified as Thavhatshena.	Phase 2 assessment
42	Pottery fragments.	Phase 1B assessment
43	Possible Iron Age site, road has degraded the area and bisects the site.	Phase 1B assessment
44	Cupule on stone moved during the grading of the farm road, non-diagnostic ceramics on a rise.	no action
46	Large cattle enclosure deposit with ceramics, glass beads and lower grinding stone, grain bin stands - Letaba.	Phase 2 assessment
47	Pottery fragments on sandstone ridge (non-diagnostic).	Phase 1B assessment
75	Iron Age remains, grinding stone, stone platforms- possibly floors. Iron spearhead was recorded here.	Phase 2 assessment if affected by a proposed borrow pit
76	Middle Stone Age.	Assess by Stone Age specialist
85	Non-diagnostic Iron Age remains. Extends eastwards and seems to be a twin site.	Phase 1B assessment

5.3.1.2 Central Pit:

Location No.	Description	Mitigation
28	Pottery in open patch in Mopani veldt (non-diagnostic)	Phase 1B assessment

29	Pottery in neck of two sandstone hillocks (non-diagnostic). Stone feature & grinding stone.	Phase 2 assessment
30	Pottery on sandstone ridge (non-diagnostic).	Phase 1B assessment
45	Single non-diagnostic ceramic pot.	No action

5.3.1.3 West Pit:

Location No.	Description	Mitigation
13a	Formal Graveyard of the Mudimelivillage on Fripp.	Consultation for relocation and implementation of legal requirements
18	Iron Age pottery fragments.	Phase 1B assessment
51	Pottery fragments and packed stone– possibly grain bins stands (non-diagnostic).	Phase 1B assessment
61	Farm labourers area, glass bottles, earthenware ceramics.	No action – will assess such remains at 68.
62	Single grave & homestead foundations.	Consultation for relocation of grave and implementation of legal requirements
63	Earthenware ceramics, probably related to farm labourer occupation.	No action
64	Non-diagnostic pottery on calcrete raise, previously ploughed for agricultural purposes.	Phase 1B assessment
65	Grave with gravestone – Mulaudzi- date: 1910 -1958.	Consultation for relocation and implementation of legal requirements
66	Grave- headstone has fallen over- could possibly have been disturbed- Grobler T. J. Born 1856, date of death unknown- can no longer be distinguished on gravestone.	Consultation for relocation and implementation of legal requirements
67	Grave - stacked stone.	Consultation for relocation and implementation of legal requirements
68	Farm workers settlement, rectangular foundations, bottles dated by a collector to <i>circa</i> 1910-1930.	Phase 2 assessment
69	Rectangular foundation ruin of recent historical house.	No action
70	Non-diagnostic pottery scatter probably recent historic	Phase 1B assessment
71	Grain bin stand and scattering of pottery shards. A small iron adze was recorded here.	Phase 1B assessment
72	Rondavel foundation.	No action

5.3.2 Remains located at the various stockpile areas.

5.3.2.1 Stockpiles for the central pit:

Location No.	Description	Mitigation
80	Burnt grain bin rubble. 78 & 80 may be related.	Phase 1B assessment
81	MSA; small flakes.	Assessment Stone Age by Specialist

5.3.2.2 Stockpiles for the west pit:

Location No.	Description	Mitigation
--------------	-------------	------------

4	Recent remains on calcrete rise, with pottery shards, glass fragments, and some metal remains, possible floor, but could also be burned termite mound. Stone concentration, which might be a possible grave, could also be from stone clearance, needs further investigation	Avoid and protect grave
15	3 Possible Graves with stone packing and a recent site, with what appears to be the remainder of house foundations and some pottery fragments	Grave verification and implementation of legal requirements.
16	4 Possible Graves on sandstone ridge close to the village, graves are stone stacked, with some pottery.	Grave verification and implementation of legal requirements.
17	Iron Age pottery fragments near sandstone ridge in open flat areas.	No action
19	Iron Age remains on calcrete outcrop, with some pottery fragments and possible cattle enclosure	Phase 2 assessment
53	Cattle enclosure and midden deposit (non-diagnostic).	Phase 1B assessment

5.3.3 Remains located at other infrastructure areas.

105	Open Iron Age site with pottery and bin stand.	It falls outside the activity area and should not be affected. However, a Phase 2 assessment is required should development affect the site
111	Cluster of potshards – no other cultural remains on surface.	Phase 1B assessment
114	Quartz outcrop containing Stone Age material.	Assessment by Stone Age specialist
116	Calcrete outcrop containing Stone Age material	Assessment by Stone Age specialist

5.4 Recommendations

5.4.1 Stone Age Remains

It is recommended that a Stone Age specialist be appointed to conduct an assessment/s of the Stone Age material at the proposed Makhado colliery.

5.4.2 Iron Age Remains

The locations and sites that will be affected should the proposed Makhado colliery be granted a mining license are listed in the tables above with recommended mitigation measures. Because the integrity and significance of many of the find place could not be established, we recommend phase 1B or shovel pit testing to determine the type and facies of such find place. i.e., agricultural activity, other activity area or merely a concentration of discarded material. Where the Phase 1B assessment reveals the existence of a primary archaeological site worthy of a further Phase 2 assessment, it should be undertaken. In addition, when it is found that the integrity of a primary site has been compromised by whatever means to such an extent that no viable assessment can be done, such a site should be screened for burials by means of searching for evidence of a burial by placing a fixed grid of 1m² over the site in which at least 1 shovel test pit must be excavated in an effort to locate any burials on the site. It must be remembered that pre-colonial archaeological sites normally contain unmarked graves.

Phase 2 assessments of a number of sites that will be impacted on are recommended. As part of the Phase 2 work such sites must also be screened for burials as described above.

5.4.3 Historical graves and cemeteries

The following legal procedures must be adapted and implemented to deal with these graves:

5.4.3.1 Application of a permit from SAHRA's BGG Unit in terms of Section 36 of the National Heritage Resources Act for **graves older than 60 years or that of a victim of conflict.**

- **Graves of known identity:** Proof of thorough consultative process:
 - Locate next of kin and obtain letter of consent from next of kin.
 - Obtain a letter of consent or statement of no objection from the local traditional authority.
 - Determine a place for the re-burial of each grave in consultation with next of kin. In addition, also determine the arrangement of reburial, i.e., by the next of kin/community or a funeral undertaker.
 - Submit documentation of the above with the permit application to SAHRA.
 - Inform SAPS of intent to relocate the grave/s and submit a copy of the permit to SAPS.

- **Graves of unknown identity:** Proof of thorough consultative process:
 - Place advertisement in a local and national newspaper with description and location of graves and full contact detail of consultant and developer. A waiting period of 60 days applies.
 - If no reaction to advertisement follows, then apply for permit from SAHRA after the waiting period of 60 days with proof of advertisement and any other consultative process.
 - If in rural area obtain a letter of consent or statement of no objection from local traditional authority must be submitted with permit application.
 - If advertisement leads to a claim from next of kin or from a community who by tradition has an interest, then written consent from relevant party must be obtained.
 - Determine a place for the re-burial of each grave
 - Submit documentation of the above with the permit application to SAHRA.
 - Inform SAPS of intent and process of re-burial and submit a copy of the permit to SAPS.

5.4.3.2 Graves less than 60 years old in terms of the Human Tissues Act (Act no. 65 of 1983) and the Removal of Graves and Dead Bodies Ordinance No. 7 of 1925

- Locate the next of kin of the buried persons and obtain consent from the next of kin for the relocation of the graves.
- Determine a place for the re-burial of each grave.
- Obtain a letter of consent or statement of no objection from the local traditional authority.
- Submit above documentation to the Department of Health and obtain permission for the relocation of the graves – which process would most probably be regulated by the Vhembe District Municipality.
- Inform the South African Police Service and provide documentation from relevant heritage authority.
- The graves are to be exhumed by a funeral undertaker under the supervision of an archaeologist. Undertaker would also arrange all the formalities for the reburial.

In all of the above the specific requirements with regard to ritual and ceremonial practices from next of kin and/or community for both the exhumation and re-burial activity must be determined beforehand and facilitated by the developer.

6. RESULTS OF THE SURVEY: BULK 22kV POWER SUPPLY(See Locality Map 2)

6.1 Introduction

The project is situated in the Nzhelele valley and drainage area of Venda in the Limpopo Province and south to southwest of the Nzhelele Dam. The route follows disturbed areas in close vicinity to existing settlements, abandoned ploughed field, road tracks, and even an old power line route. In the mountainous sections much of the route covers areas of predominantly stony surface with little or no topsoil.

No known heritage survey has been undertaken here in the recent past. However, a number of archaeological sites have been identified by Loubser (1991) in the Zoutpansberg while doing research on Venda ethno-archaeology for his PhD during the mid-1980's, of which the Provincial heritage site; Dzata (co-ordinates $S22^{\circ} 52' 06.4'' E30^{\circ} 08' 36.5''$) and its predecessor Tshiendeulu (co-ordinates $S22^{\circ} 50' 12.7'' E30^{\circ} 09' 17.5''$), are the nearest to the Paradise Sub-station (starting point of the proposed power line). Both these sites are well away to the east of the project and will not be affected in any way.

6.2 Result of the survey

Of the cultural remains that were recorded along the proposed route, two are presumed to be archaeological sites, i.e. numbers 5 and 6. Number 8 is a formal cemetery, while the other recordings are from recent activities.

1. Co-ordinates $S22^{\circ} 51' 40.1'' E30^{\circ} 04' 53.1''$. Modern foundation remains and terracing near the ruins of an abandoned school (Figs 73&74). No other cultural remains of significance. No significance.
2. Co-ordinates $S22^{\circ} 51' 36.8'' E30^{\circ} 04' 50.7''$. Foundation remains and cement floor with modern discarded utensils (Fig 75). No significance.
3. Co-ordinates $S22^{\circ} 51' 32.5'' E30^{\circ} 04' 46.4''$. Foundation remains with modern discarded utensils, including a tyre lever (Fig 76). No significance.
4. Co-ordinates $S22^{\circ} 51' 19.3'' E30^{\circ} 04' 27.1''$. Signs of stone terracing with no cultural remains – probably an abandoned field (Fig 77). No significance.
5. Co-ordinates $S22^{\circ} 51' 07.1'' E30^{\circ} 04' 09.0''$. Stone walling and terracing at a large rock. Also contains pottery remains (Fig 78). Significance: medium/moderate and should be avoided. The placing of the pylons will not affect the site, but the access road must be diverted under supervision of the archaeologist so as not to damage or impact on the site.
6. Co-ordinates $S22^{\circ} 50' 45.8'' E30^{\circ} 03' 50.0''$. Large sandy open area with scattered non-diagnostic pottery fragments indicative of previous habitation (Figs 79& 80). Significance: medium/moderate. The pylons will be placed at the northern end of the site and will therefore have an impact. The pylon area must be assessed by means of a Phase 2 excavation prior to construction and the outcome of this assessment will inform further management measures on the site concerning the access road.
7. Co-ordinates $S22^{\circ} 50' 27.4'' E30^{\circ} 03' 46.7''$. Ruin of a clay brick homestead that falls just outside the route (Fig 81). Significance: low. The placing of the pylons will not affect the site and the access road must avoid the site.

8. Co-ordinates $S22^{\circ} 49' 46.5'' E30^{\circ} 03' 20.5''$: A formal graveyard/cemetery at Maangani village. No impact is expected.

Stone Age remains are very scarce along the proposed route. Some flaked stones were observed such as shown in figure 82, but due to the nature of the linear development, the impact on Stone Age material will be negligible.

6.3 Discussion

The route of the proposed power line spans over disturbed and/or stony areas. The lack of archaeological sites in such a generally fertile area of the Nzhelele River valley can be attributed to the fact all suitable areas are currently inhabited or alternatively, being cultivated. The remainder is extremely stony and thus not arable as would be a prerequisite during prehistoric times.

6.4 Recommendations for management and mitigation measures

No further actions are required at recorded site numbers 1 – 4 and 7. These are not regarded as significant from a heritage point of view and neither has any community member objected to the route of the proposed power line on grounds of heritage matters.

Recorded sites 5 and 6 require further management actions, namely:

1. Site 5 must be avoided and the access road diverted to ensure that no damage is done to the stone walling and terracing at the site.
2. Site 6: A Phase 2 assessment must be undertaken where the pylons are to be placed prior to development. The outcome of this assessment will inform on further management measures concerning the access road.

7. RESULTS OF THE SURVEY: OFF SITE TRANSPORT – RAILWAY LINE & SIDING (HUNTLEIGH) (See Locality Map 3)

7.1 Introduction

The railway line is planned from the farm Lukin 643 MS over the farms Boas 642 MS, CoenBritz MS 646, Juliana 647MS, Rissik 637MS, Lekkerlag 580MS, Joffre 584MS, Battle 585MS, Command 583MS, and Vrienden 589MS. (Refer to maps, South Africa 1:50 000 2229 DB & DD). The proposed railway line crosses the N1 on the farm Rissik.

The project is situated north of the Zoutpansberg in what is generally referred to as Mopanebushveld. The terrain is somewhat undulated on the farms Boas, Coen Brits and again on Lekkerlag. The rest of the route is relatively flat. Grass cover is mostly sparse, but trees including *Grewiasp.* Mopane, *Combretumsp.* false marula (*Lanneastuhlmannii*), *Kirkia*, *Commiphoras* and *Adansoniadigitata* (Baobab) abound. The route is generally undisturbed on the farms except where it crosses roads or firebreaks. On the farms Boas, CoenBritz and the hilly parts of Lekkerlag sheet erosion has reduced the topsoil cover.

7.2 Result of the survey (locality map 3)

1. Co-ordinates $S22^{\circ} 46' 52.0'' E29^{\circ} 58' 37''$: General coordinate on the farm Boas of an area shaded on the locality map where Stone Age material was frequently noted during our surveys*.

2. Co-ordinates S22°45'25.4" E29°56'25.0": General coordinate on the farm Coen Britz where a scattering of surface MSA flakes were noted.
3. Co-ordinates S22°44'07.6" E29°53'57.0": A scattering of stone flakes and a broken small hand axe on Rissik.
4. Co-ordinates S22°41'15.5" E29°48'29.3": Ruin of a farm school on the farm Vrienden – dry stone walling. The rail route passes about 400m north of the ruin and it will not be affected by the development.

*Apart from the above, the railway line and road access may have an impact on previously recorded heritage material included in the report titled: PRELIMINARY PHASE 1 HERITAGE IMPACT ASSESSMENT REPORT; MAKHADO OPENCAST COAL MINE, VHEMBE DISTRICT MUNICIPALITY, LIMPOPO submitted for the EIA Scoping Report. These are recorded on the locality **map 2** below as numbers:

91. S22°46'32.7" E29°58'17.8": Large open Iron Age site on a raise with midden deposit, grain bin stands and low frequency of surface pottery sherds. One decorated sherd resembles the Thavatshena style. Phase 2 mitigation required.
92. S22°46'44.8" E29°58'16.0": Small isolated cluster of pottery sherds – unidentified. Monitoring during construction phase.
93. S22°46'40.5" E29°58'08.0": Midden deposit exposed in farm road. Upper grinder and pottery - unidentified. Phase 2 mitigation required.
94. S22°46'37.4" E29°58'03.3": Isolated upper grinder. No further action.
96. S22°46'33.5" E29°57'54.1" 1: Single Mutamba style potsherd. No further action.
97. S22°46'49.3" E29°57'46.6": Eroded area along drainage line containing what seems to be predominantly Earlier Stone Age material. Requires an assessment by Stone Age specialist.
98. S22°46'46.5" E29°57'59.7": Open Iron Age site with midden deposit, upper grinder and grain bin stand. Phase 2 mitigation required.
99. S22°46'54.6" E29°58'10.7": Open calcrete outcrop that contains a single potsherd. Deposit may be subterranean. Monitoring during construction phase.
105. S22°46'37.6" E29°58'29.9": Open Iron Age site with pottery and bin stand. Phase 2 mitigation required.

7.3 Discussion

Contrary to expectations, the survey produced no significant heritage resources. No Iron Age remains were found between Boas and Huntleigh siding. The probable reason for this is that there is no reliable source of water in this part of the project area, except the Mutamba River, where heritage resources were recorded during the survey for the mining area. Exposed Stone Age material is also generally absent. This can also be attributed to the scarceness of water. Abundant Stone Age occurs closer to the Mutamba River within the mining area.

7.4 Summary of threatened remains located in the Transport node (see Locality Map 1).

Location No.	Description	Mitigation
91	Large open Iron Age site on a raise with midden deposit, grain bin stands and low frequency of surface pottery shards. One decorated shard resembles the Thavatshena style.	It falls outside the activity area and should not be affected. However, a Phase 2 assessment is required should development affect the site
92	Small isolated cluster of pottery shards – unidentified	Monitoring during construction
93	Midden deposit exposed in farm road. Upper grinder, pottery unidentified.	Phase 2 assessment
94	Isolated upper grinder.	No action
95	Scattering of potshards on edge of stony ridge – no other surface material	Monitoring during construction
96	Single Mutamba style potshard.	No action
98	Open Iron Age site with midden deposit, upper grinder and grain bin stand.	It falls outside the activity area and should not be affected. However, a Phase 2 assessment is required should development affect the site

7.5 Recommendations for management and mitigation measures

No further actions are required at recorded numbers **2 – 4**. Recordings 2 & 3 are not regarded as significant from a heritage point of view and **4** will not be impacted on.

Recommendations for the area indicated at **1** are dealt with in the report for the Mining area. For these heritage remains we have recommended further assessments by way of Phase 1B and Phase 2 investigations.

No-one has objected to the route of the proposed railway line over the community and Black owned farms; Portion 2 Rissik 637 MS, Battle 585 MS, Remaining Extent Joffre 584 MS and Lekkerlag 580 MS on grounds of heritage matters.

Finally, should the project be approved, we recommend that the earthworks preceding construction of the line be monitored on a regular basis in the event that heritage resources are exposed to enable the implementation of cultural resource management measures. The discovery of undetected heritage remains must be reported to the archaeologist, who will then comply with the necessary legal requirements.

8. EVALUATION AND STATEMENT OF SIGNIFICANCE FOR THE ENTIRE PROJECT.

8.1 Significance criteria in terms of Section 3(3) of the National Heritage Resources Act.

Significance		Rating
1.	The importance of the cultural heritage in the community or pattern of South Africa's history (Historic and political significance)	Medium/moderate: Mutamba, Thavatshena and Letabasites may add data to our understanding of the origins of the Venda
2.	Possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage (Scientific significance).	None
3.	Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage (Research/scientific significance)	Medium/moderate: Mutamba, Thavatshena and Letaba sites may add data to our understanding of the origins of the Venda. Little is known about the Stone Age of the Mutamba River drainage area. A study here will enhance existing data and knowledge about the Stone Age.
4.	Importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects (Scientific significance)	None
5.	Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group (Aesthetic significance)	None
6.	Importance in demonstrating a high degree of creative or technical achievement at a particular period (Scientific significance)	None
7.	Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (Social significance)	Medium/moderate Venda history and oral traditions from Musekwa and other Venda clans.
8.	Strong or special association with the life and work of a person, group or organization of importance in the history of South Africa (Historic significance)	None
9.	The significance of the site relating to the history of slavery in South Africa.	None

8.2 Section 38(3) (c) An assessment of the impact of the development on such heritage resources.

The proposed development will have an adverse effect on the recorded heritage remains that fall within the development area.

8.3 Section 38(3) (d) An evaluation of the impact of the development on heritage resources relative to the sustainable economic benefits to be derived from the development.

None of the recorded heritage remains within the mining area is uncommon, rare or unique, although it must be recorded for posterity by means of adequate research. The sustainable economic benefits outweigh the conservation benefits.

8.4 Section 38(3) (e) The results of consultation with the communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources.

The majority of the affected communities support the mining development as is recorded above and in the social consultative process.

8.5 Section 38(3)(f) If heritage resources will be adversely affected by the proposed development the consideration of alternatives.

No viable alternatives exist.

8.6 Section 38(3)(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.

Mitigation for further Phase 1B and Phase 2 assessments will be implemented.

From a heritage resources management point of view we have no objection with regard to the development on condition that the recommendations for each activity above are implemented. The discovery of undetected heritage remains must be reported to the archaeologist, who will then comply with the necessary legal requirements.

9. PROPOSED HERITAGE MANAGEMENT GUIDELINES FOR MAKHADO COLLIERY

A detailed heritage management plan can only be developed once all authorisations are in place and a mining license been issued. Nevertheless this section serves to indicate and prioritise what actions require implementation in a phased approach following the sequence of mining the opencast pits from east to west. The required immediate, short-, intermediate- and long-term management actions are mentioned below:

9.1 Immediate actions:

- Protection: During the Heritage Impact Assessment (“HIA”) a number of heritage find places and sites have been recorded. Those within the transport node and east pit will be the first to be affected. Until such time as the necessary permits are obtained from SAHRA to undertake Phase 1B and Phase 2 work, these find sites must be protected from disturbances and damage and some will have to be fenced off.
- The planned work/operational schedule of the mine must be made available to the heritage specialist / coordinator in order to plan the necessary sequence in which sites and find places must be dealt with. It is advisable to commence with the heritage work as soon as possible to avoid any delays in the mining development once a mining license is issued.
- A Stone Age specialist must be appointed as soon as possible to commence with the further assessment of the Stone Age material. Most of these are not in the area of initial development and can be phased in.
- A heritage sub-committee should be established comprising of stakeholders such as the heritage authority, community representatives, representatives from Traditional Authorities, ASAPA and other interested and affected parties. This committee should guide the rescue and research aspects of the future archaeological and consultative work.

9.2 Short-term actions (Year 1-2):

- Protection: Continue implementing protection measures at find places that are threatened prior to undergoing Phase 1B or Phase 2 assessments.
- Phase 1B assessments must urgently be conducted at threatened heritage find places in both the transport node and east pit under permit from SAHRA. Assessments should commence as soon as a permit is obtained.

- Phase 2 assessments should be urgently conducted under permit from SAHRA at those identified sites along the transport node and the east pit.
- Intangible Heritage: Community representatives and the Traditional leadership to be engaged and consulted to gather additional indigenous knowledge from the area.
- Stone Age: A Stone Age specialist to continue assessing the Stone Age bearing gravels.

9.3 Intermediate actions (Year 2-5):

- Protection: Continue implementing protection measures at find places that are threatened by mine expansion prior to undergoing Phase 1B or Phase 2 assessments.
- Phase 1B: Continue implementing Phase 1B assessments at sites that will be threatened by the expansion of the mining in the east pit and stockpile areas.
- Phase 2: Continue Phase 2 assessments in the east pit and stockpile area.
- Commence with developing Phase 3 site management and protection plans for those heritage remains inside the mine property which are indirectly threatened by the mining.
- Commence with consultative process for the relocation of graves in the west pit area that will be threatened by mining or implement protection measure for such graves.

9.4 Long-term actions (Year 5-10):

- Protection: Continue protection of find places and sites that may in the long term be threatened by any activity relating to the mining development.
- Phase 1B: Continue implementing Phase 1B assessments at sites that will be threatened by the expansion of the mining in the central pit and stockpile areas.
- Phase 2: Implement Phase 2 assessments at sites that may be affected by mining expansions in the central pit and stockpile areas.
- Continue developing Phase 3 site management and protection plans for those heritage remains inside the mine property which are indirectly threatened by the mining.

9.5 Long-term actions (Year 10-):

- Protection: Continue protection of find places and sites that may in the long term be threatened by any activity relating to the mining development.
- Phase 1B: Continue implementing Phase 1B assessments at sites that will be threatened by the expansion of the mining in the west pit and stockpile areas.
- Phase 2: Implement Phase 2 assessments at sites that may be affected by mining expansions in the west pit and stockpile areas.
- Continue developing Phase 3 site management and protection plans for those heritage remains inside the mine property which are indirectly threatened by the mining.

10. REFERENCES

Deacon, J. 1996. *Archaeology for Planners, Developers and Local Authorities*. National Monuments Council. Publication no. P021E.

Deacon, J. 1997. *Report: Workshop on Standards for the Assessment of Significance and Research Priorities for Contract Archaeology*. In: Newsletter No 49, Sept 1998. Southern African Association of Archaeologists.

Huffman, T.N. 2007. *Handbook to the Iron Age. The archaeology of Pre-colonial Farming Societies in Southern Africa*. University of KwaZulu-Natal Press.

Le Baron, J.C., Kuman, K & Grab, S.W. 2010. *The landscape distribution of Stone Age artefacts on the Hackthorne plateau, Limpopo River valley, South Africa*. South African Archaeological Bulletin 65: 123-131.

Loubser, J.H.N. 1991. *The Ethnoarchaeology of the Venda-speakers in Southern Africa*. Navorsing van die Nasionale Museum, Bloemfontein 7(8): 145 – 464.



FRANS ROODT (BA Hons, MA Archaeology, Post Grad Dip. in Museology; UP)
Principal Investigator for R & R Cultural Resource Consultants.

Images: Opencast mine & infrastructure area



Fig 1. General view of development area



Fig 2. View of part of development area



Fig 3. Possible grave site 1



Fig 4. Another possible grave site 1



Fig 5. Pottery, Site 2



Fig 6. Grinding stone, Site 3



Fig 7. General view, Site 5

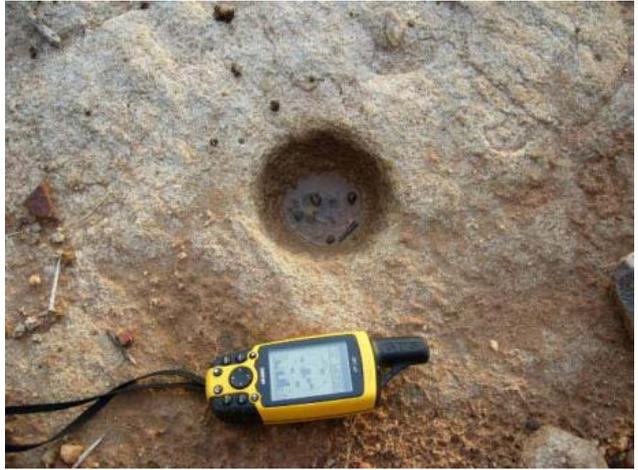


Fig 8. Cupule hole, Site 5



Fig 9. Gaming board, Site 5



Fig 10. Pottery fragments, Site 6



Fig 11. Possible Grave, Site 8



Fig 12. Stone flakes, Site 9



Fig 13. Site 11



Fig 14. Stone wall, Site 11



Fig 15. Site 12



Fig 16. Pottery and ash, Site 12



Fig 17. Graveyard, Site13a



Fig 18. General view, Site 21



Fig 19. Ceramics, stone tool and smoothing stone- site 21



Fig 20. Site 22, ceramics and animal bone



Fig 21. View, Site 23



Fig 22. Pottery, Site 23



Fig 23. Ceramics and spindle whorl site 24



Fig 24. Ceramics, site 33



Fig 25. Ceramics from site **34**



Fig 26. Photo shows the level of degradation at site **35**



Fig 27. Ceramics from site **35**



Fig 28. Stone Age material from site **37**



Fig 29. View of natural environment- Site **37**

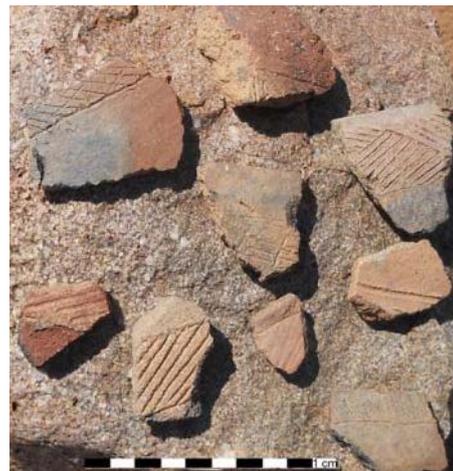


Fig 30. Ceramics from site **38**



Fig 31. Ceramic scatter at **Site 39**(shown in red)



Fig 32. Stone cairn at **Site 40**



Fig 33. Ceramics from site **41**



Fig 34. Ceramics and cupule from site **44**



Fig 35. Ceramics from site **46**



Fig 36. Glass and shell beads- site **46**



Fig 37. Graves at site **48**



Fig 38. Grave at site **49**

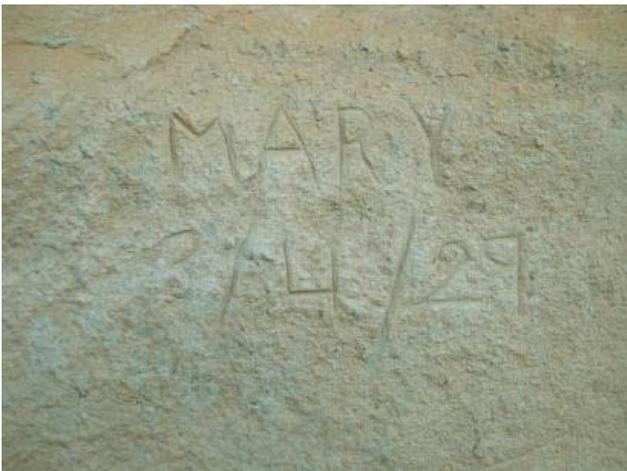


Fig 39. View of graffiti at site **55**



Fig 40. View of overhang -site **55**



Fig 41. Site **56**

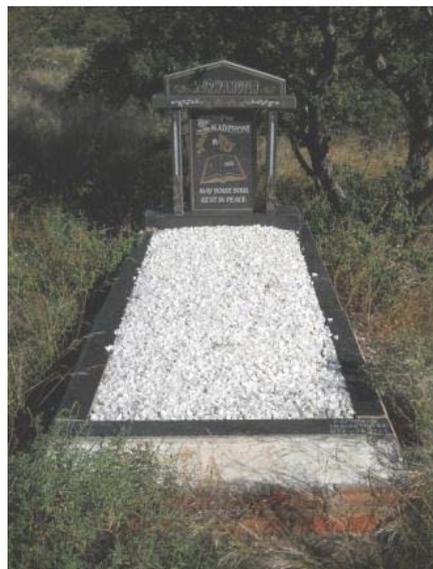


Fig 42. View of grave at site **57**

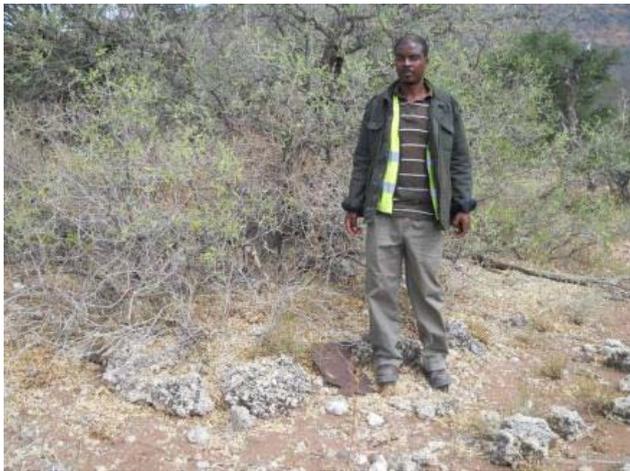


Fig 43. Grave site **62**



Fig 44. Grave at site **65**



Fig 45. Grave at site **66**



Fig 46. Foundation remains from site **68**



Fig 47. Iron adze near grain bins stand on site **71**



Fig 48. Ceramics from site **74**



Fig 49. General view of site 74



Fig 50. Iron spear from site 75



Fig 51. MSA flakes and core; site 78



Fig 52. Ceramics from site 79



Fig 53. View of burnt grain bin rubble at site 80



Fig 54. View of Middle Stone Age flakes, site 81

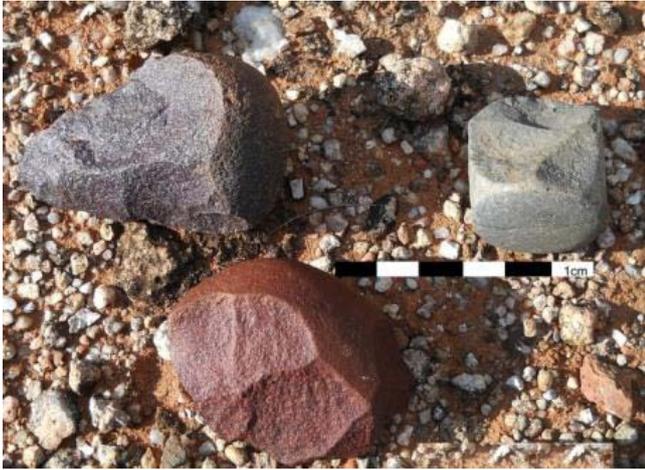


Fig 55. View of cores and smoothing stone, site **84**



Fig 56. Dried up fountain at site **86**



Fig 57. Childs grave at site **87**



Fig 58. Graves at site **88**



Fig 59. Fountain eye among dense bush at site **89**



Fig 60. General view of site **91**

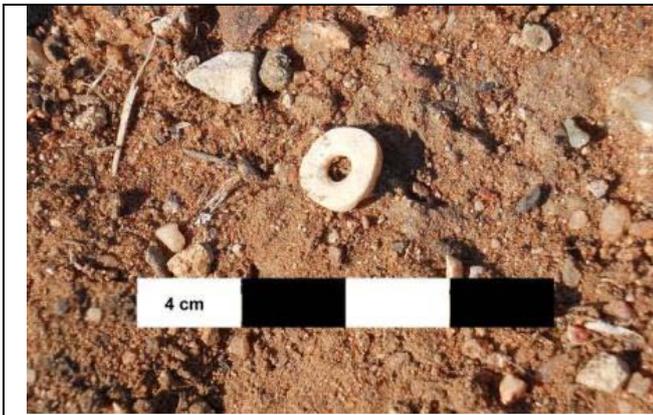


Fig 61. Ostrich eggshell bead – site **91**



Fig 62. Isolated Mutamba style potshard- Site **96**



Fig 63. Erode area adjacent to stream containing Stone Age material – site **97**



Fig 64 Open Iron Age site with midden deposit, upper grinder and grain bin stand – site **98**



Fig 65. Iron Age site with low frequency surface pottery, grain bin stand, upper grinder – site **100**



Fig 66. MSA flake at site **102**



Fig 67. Small Acheul hand axe – site **104**



Fig 68. Iron Age remains consisting of upper grinders and a scattering of potshards



Fig 69. Open Iron Age site with low frequency of cultural material – only small number of potshards and ashy soil – site **113**



Fig 70. Example of a rocky outcrop containing Stone Age material – site **117**



Fig 71. MSA core – site **120**



Fig 72. Open grass covered patch resembling an Iron Age site, but containing no surface cultural material – Site **121**

Images: Bulk power supply



Fig 73. Terracing at site 1.



Fig 74. Abandoned school ruin near sites 1 – 3.



Fig 75. Modern remains at site 2.



Fig 76. Structural remains at site 3.



Fig 77. Terracing at site 4.



Fig 78. Stone walling and terracing at site 5.



Fig 79. Open sandy area at site 6.



Fig 80. Pottery fragments at site 6.



Fig 81. Brick ruin at site 7.



Fig 82. Flaked core stone.

Images: Off-site transport – railway line & siding



Fig 83. General view of route (Coen Britz).



Fig 84. General view of route showing drainage line (Vrienden).



Fig 85. Typical farm road crossed by the line.



Fig 86. MSA flakes recorded at 2 on locality map 1 (Coen Britz).



Fig 87. MSA flake and small hand axe recorded at 3 on locality map 1 (Rissik).



Fig 88. Ruin of a farm school on Vrienden.

Annexure 1. History of the Musekwa Chieftainship.

THE VHANDALAMO OF MUSEKWA CHIEFTAINSHIP

The Musekwas belong to the Ndalamo clan whose totem is "tale of the goat"; they originated from Central Africa where they lived with Masingo.

Historically, the Vhandalamo and the Masingo are of the same family, as one group, is of the aunt's side and another from the uncle. Together they crossed the Vhembe river and built their royal village at Dzata, known today as Thavhani dza Tshiendeulu. Later on they were removed to Dzata la vuvhili (second Dzata).

The family at Dzata disintegrated at a later stage. The Vhandalamo of Tshishonga moved to the Tshishonga plain / ground and this is where Tshishonga died. Musekwa, unlike the rest of the Vhandalamo that proceeded downward with their journey, went and resided at Maneledzi, known as Khavhambe. Chief Musekwa then became the only remaining Tshishonga (Tshishonga-nda-sala) as he became the army general of Manenu Manena Musipha.

In around 1830 Musekwa died at what is today known as Musekwaspoort. Some of his descendants are the following:

- Tshikundamalema
- Muila
- Funyufunyu
- Ramovha

After his death, Chief Ramaneledzi (Mutonge) took over the reigns when he was still there at Maneledzi. They praised him thus:

Maneledzi mangandanganda
A sa kundwi nga vhanzhi u anda.

History informs us that he did not rule for a very long time, he died at Maneledzi. In 1865 Chief Sikhwivhilu filled his position. Chief Sikhwivhilu was praised as follows :

Sikhwivhilu ndi sinye-sinye midavhini yo govhelwaho.

Chief Sikhwivhilu moved from Maneledzi and built his new royal village at Tshivhuyanani (Tshipange). Chief Sikhwivhilu died there at Tshipange.

S 22° 50' 57"
E 29° 53' 37"

Chief Sikhwivhilu had the following young brothers:

Nelushi

Magadani

Ramaisha, and others.

Chief Mavhasa then filled the position. He was praised as follows:

Mavhasa mililo vhanwe vha da nga u ora.

During his period of leadership, the names of some areas/villages were changed and foreign names attached. For example

1. Mupfuluka was named Windhoek and Tanga
2. Divhani was named Grootgeluek and Kalbult
3. Maname was named Paradise and Marias
4. Marambode was named Northwich and Fountain
5. Tshaulu was named Overwinning; and many others.

It was because of these changes that chief Mavhasa fell sick and consequently died in 1913 during the Union of South Africa. During this time, some of the areas under the leadership of chiefs, were turned into "location".

For example, Musekwa Location and Mphephu Location.

Chief Mavhasa had the following young brothers:

Rangolo

Mufunwaini

Rasithu

Ramathikhithi, and others.

He also had the following children:

Madala

Tshivhidzo

Makwarela

Khangale

Muthuwavhathu

Fhasiasikule.

In 1920, when ascending the chieftainship position, Joseph Madala was the first chief to have a demarcated area known as Musekwa Location. The chief was not impressed as the demarcated area was full of stones and little space for agriculture. Although the chief rejected to be subjected under these conditions, he was forced by the commissioner of that time to accept them as he got handcuffed. Chief Madala died in 1939 at Musekwa Location. He was buried at Tshipange where his forefathers had been buried.

The following were chief Madala's sons:

Ramudzuli

Ndwamato

Tshamano

Makana

Khwara
Malokisa
Muofhe, and others.

The following were his daughters:

Alilali
Denda, and others.

In 1941, after the death of chief Madala, J.R. Musekwa took over as the chief. During the reign of Chief J.R. Musekwa, the Musekwa areas were brought under Mphephu Tribal Council. History informs us that chief P.R. Mphephu was the chairperson of this council while Chief J.R. Musekwa was his deputy. Chief Musekwa died in 1977 after a long illness and his demotion to a lower rank (that of headmanship). The demotion was done by a commissioner. Chief J.R. Musekwa was laid to rest at Tshipange where his forefathers were buried.

The following are Chief J.R. Musekwa's children:

Nthambeleni
Tshipfuralo
Thikhathali
Ratshilumela
Tshinanga
Mususumeli
Mmbangiseni, and others.

In 1978 Nthambeleni became the leader. The ceremony was conducted by the family led by Vho-Tshamano Musekwa. The certificate for this traditional leadership came out reflecting HEADMANSHIP instead of CHIEFTAINSHIP.

The family directed its complaints to this effect to the chairperson of the Mphephu tribal Council. The chairperson was P.R. Mphephu who was still the chief minister of Venda

homeland.

The chief minister indicated that he was going to attend to the matter. It was in 1979 that Chief Minister P.R. Mphahlele was promoted to the paramount chief and president of the Republic of Venda.

The response to our complaint was sidelined due to the authority that the chairperson was given by the apartheid regime. Nonetheless, in 1986 president P.R. Mphahlele built the Musekwa Tribal Authority. Unfortunately he passed away before the opening of the Tribal Authority; and as anticipated and promised, the restoration (by him) of the Musekwa chieftainship was not done. This task of the restoration of the Musekwa chieftainship was, as a subsequent, handed over to the commissioner of the time. The acting president, Chief F.N Ravele who came up with new policies and the reshuffling of cabinet, also made mention of the fact that a headman could be promoted to be chief. We felt covered by the introduction of this new law.

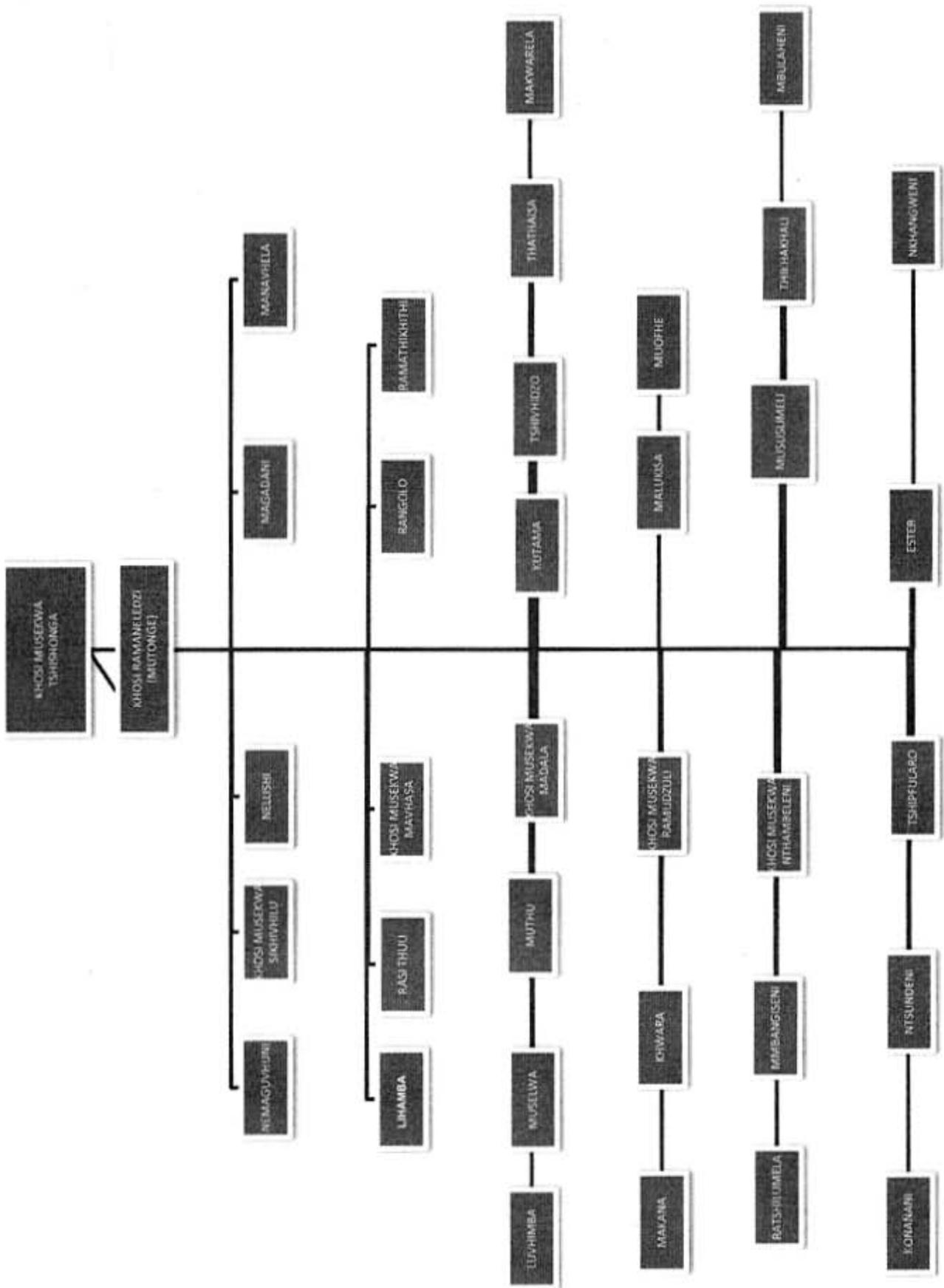
Although we had already applied for this position during the leadership of president P.R. Mphahlele, in 1989 vhomakhadzi Vho-Phophi Mphahlele and president Ravele re-instated the Musekwa chieftainship which was later withdrawn during the Ramashwana rule; as president Ravele was toppled by Gabriel Ramushwana. The reason advanced for the withdrawal of chieftainship was that one could not be promoted in traditional leadership.

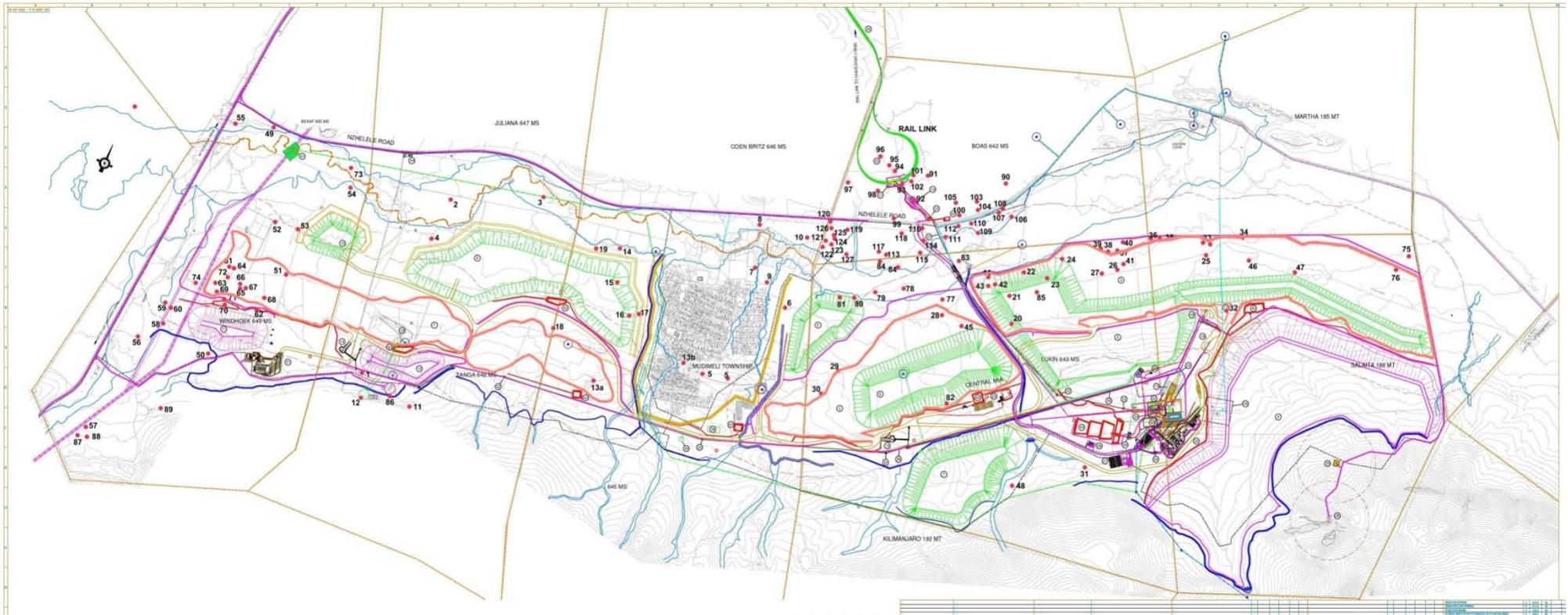
Gabriel Ramushwana instituted a commission of inquiry to look into traditional leadership. The commission was led by Adv. Mushasha. We appeared before the Mushasha commission giving all the evidence that Musekwa deserved to be a chief. The Mushasha commission confirmed the Musekwa Chieftainship. Subsequent to the Mushasha commission findings, the Government of National Unity was approached. The Government of National Unity was led by Gabriel Ramushwana. Government pointed out that it had no powers to restore the chieftainship but indicated that we should wait for the new government to attend to the matter. The matter was taken to court as Gabriel Ramushwana gave us a go ahead.

It was also confirmed in the court of law that the Musekwa's chieftainship existed but needed explanation as to why such chieftainship was stripped off. We pointed out that the apartheid government reduced the status of our leadership. We further requested Adv. Mushasha to lead us in this case. When the matter was still in court, the Ramushwana regime came to an end as the new South Africa led by the president R. Nelson Mandela came into being.

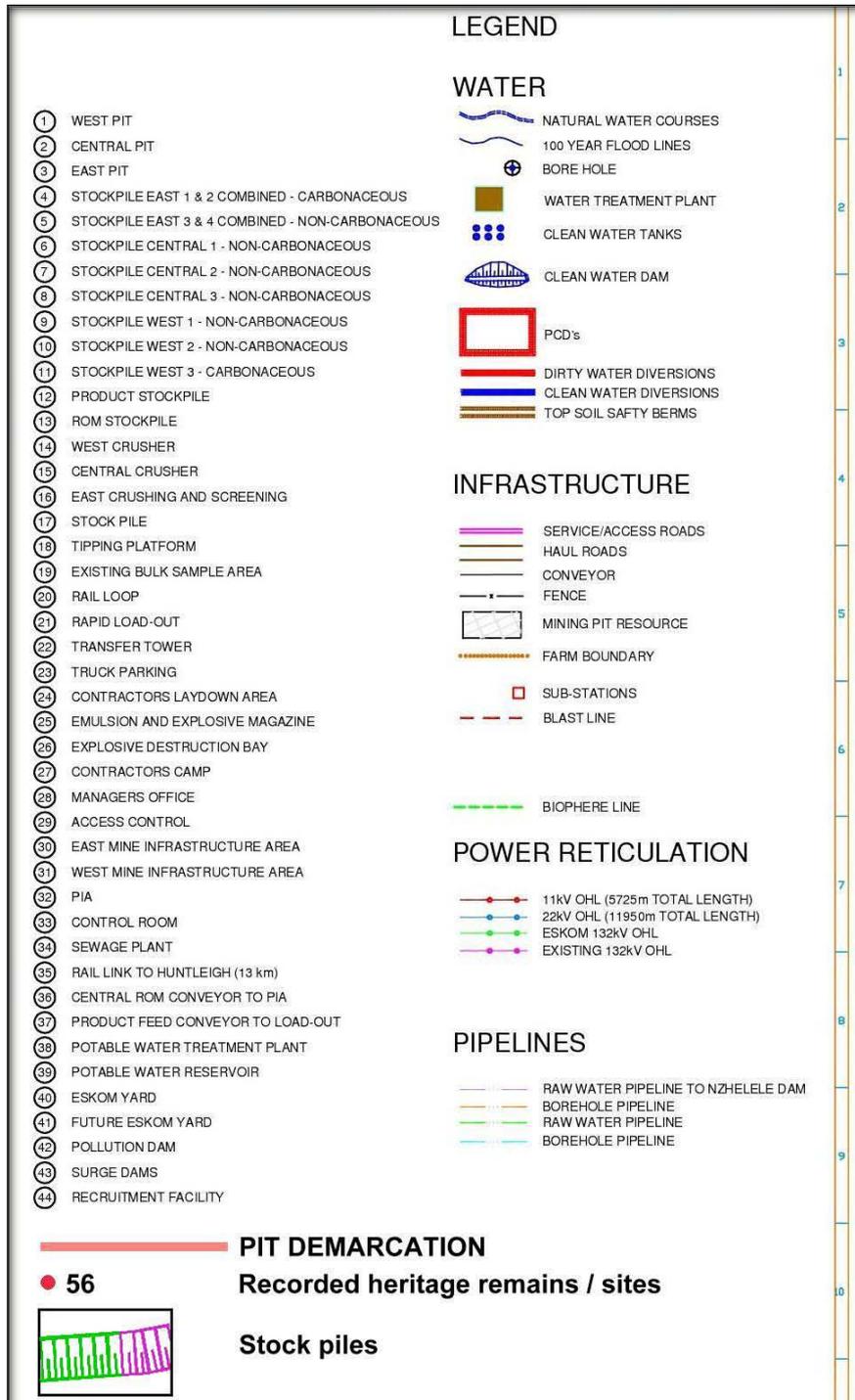
Northern Province was led by Ramahlodi Ngwako and Professor Ralushai commission was formed. Our case was subsequently taken from court to the Ralushai commission. Our submissions to this commission indicated that we are one of the eight independent Venda chiefs.

We also provided the commission with evidence from Pretoria indicating that the Musekwa chieftainship has been in existence for long. Even the deposed chief Ravele, appeared before the commission testifying on behalf of Mphephu Territorial Council that indeed the Musekwa chieftainship existed; and as a result they should get it back. The Ralushai commission confirmed and endorsed that the Musekwa chieftainship existed.

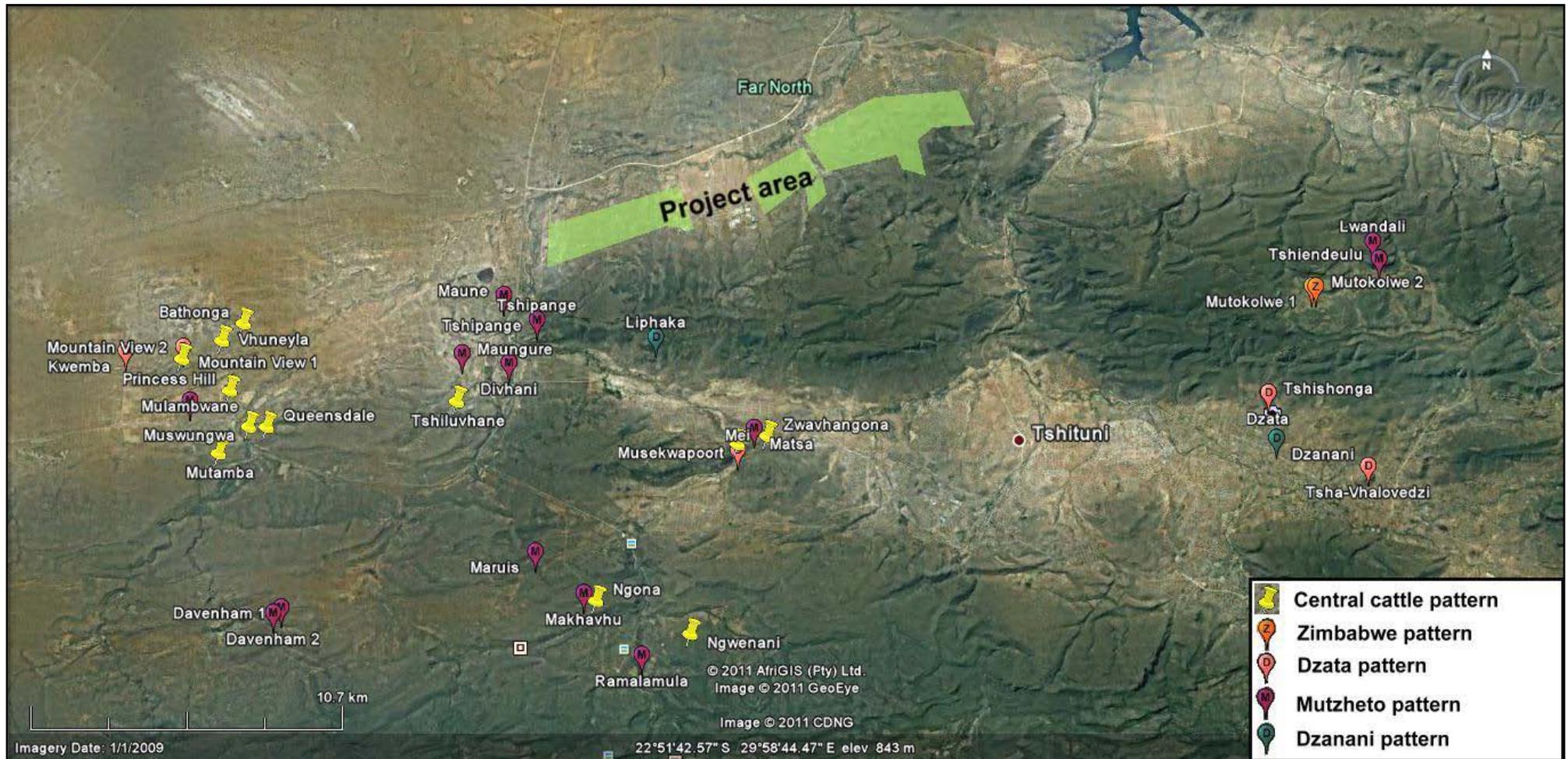




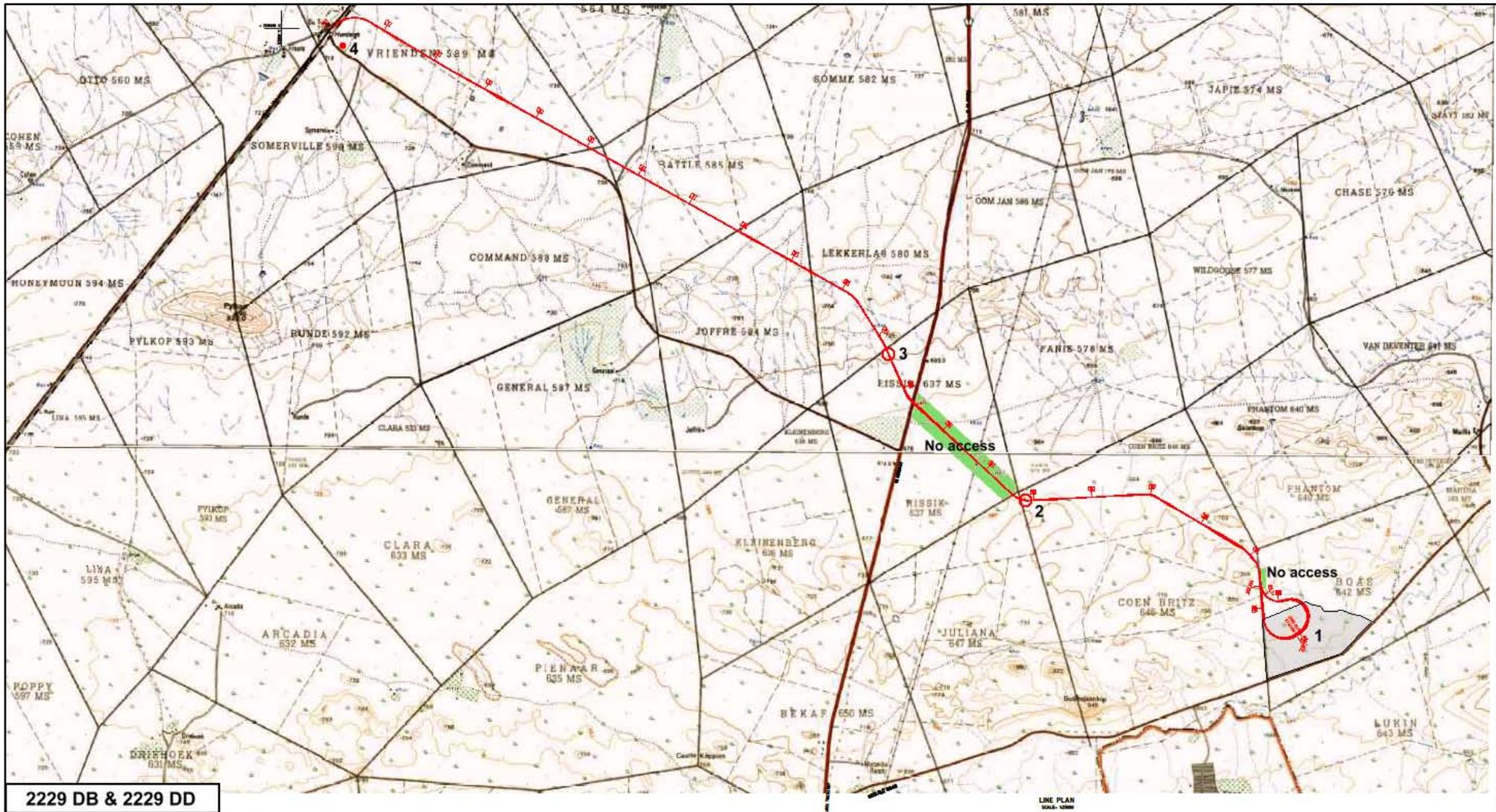
Locality Map 1: Mining area 1:50 000 2229 DD& 2230 CC



LEGEND for Locality Map 1



Google image: Archaeological sites recorded in Loubser (1991)



Locality Map 3: Railway line and Siding