



wits enterprise

**Wits Commercial Enterprise
(Pty) Limited**

(Registration No: 2002/008461/07)
5th floor, Senate House, Jorissen Street,
2001 Braamfontein
Private Bag 3, 2050 Wits
South Africa

**Digby Wells &
Associates**

**Archaeological
Impact Assessment**

**Proposed mining
development for
Mooihoek Chrome
Mine, Burgersfort,
Limpopo Province**

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Service provider



MATAKOMA - ARM
HERITAGE CONTRACTS UNIT

UNIVERSITY OF THE WITWATERSRAND
SCHOOL OF GEOGRAPHY, ARCHAEOLOGY AND ENVIRONMENTAL
STUDIES
PRIVATE BAG 3, P O WITS 2050
TEL: +27 82 851 3575 / +27 82 373 8491,
FAX: +27 11 717 6578
EMAIL: INFO@MATAKOMA.CO.ZA

ACKNOWLEDGEMENT OF RECEIPT

CLIENT: Digby Wells & Associates

CONTACT PERSON: Ms. Marike Fourie,
Digby Wells & Associates
Tel: (011) 789 9495
Fax: (011) 504 1440
Fax to email: 086 502 1588

SIGNATURE: _____

LEADING CONSULTANT: MATAKOMA-ARM Heritage Contracts Unit

CONTACT PERSON: Wouter Fourie

SIGNATURE: _____

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- The results of the project;
- The technology described in any report
- Recommendations delivered to the Client.

EXECUTIVE SUMMARY

As we know from legislation the surveying, capturing and management of heritage resources is an integral part of the greater management plan laid down for any major development or historic existing operation. With the proclamation of the National Heritage Resources Act 1999 (Act 25 of 1999) this process has been laid down clearly. This legislation aims to underpin the existing legislation, which only addresses this issue at a glance, and gives guidance to developers and existing industries to the management of their Heritage Resources.

The importance of working with and following the guidelines laid down by the South African Heritage Resources Agency cannot be overemphasised. This document forms part of the Environmental Impact Assessment for the proposed new Mooihoek Chrome Mine, Burgersfort, Limpopo Province.

The following outline the findings of the report:

One site of significance was found.

Site **MHC001** consists of one grave. The relocation of these graves must be done according to the guidelines provided in the report, in the event that preservation of the site is deemed impossible.

If these recommendations are adhered to there is from a Heritage point of view no reason why the development can not commence.

General

If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

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1. INTRODUCTION

Matakoma Heritage Consultants (Pty) Ltd was contracted by Digby Wells & Associates to conduct an Archaeological Impact Assessment Heritage Scoping Assessment for the proposed new Mooihoek Chrome Mine, Burgersfort, Limpopo Province.

The aim of the study is to identify all heritage sites, document, and assess their importance within Local, Provincial and national context. From this we aim to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilised before and during the survey, which includes in Phase 1: Information collection from various sources and public consultations; Phase 2: Physical surveying of the area on foot and by vehicle; and Phase 3: Reporting the outcome of the study.

During the survey, one cultural heritage site of significance was identified. General site conditions and features on site were recorded by means of photos, GPS location, and description. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to SAHRA provincial office for scrutiny.

2. APPROACH AND METHODOLOGY

The aim of the study is to extensively cover all data available to compile a background history of the study area; this was accomplished by means of the following phases.

2.1 PHYSICAL SURVEYING

Due to the nature of cultural remains, the majority that occur below surface, a physical walk through of the study area was conducted. MATAKOMA-ARM was appointed to conduct a survey of the proposed development area together with access routes and entrances to the proposed residential development. The total area of impact comprised an area of approximately 60ha in total. The study area was surveyed over one day, by means of vehicle and extensive surveys on foot by MATAKOMA-ARM.

Aerial photographs and 1:50 000 maps of the area were consulted and literature of the area were studied before undertaking the survey. The purpose of this was to identify topographical areas of possible historic and pre-historic activity. All sites discovered both inside and bordering the proposed development area was plotted on 1:50 000 maps and their GPS co-ordinates noted. 35mm photographs on digital film were taken at all the sites.

3. WORKING WITH LEGISLATION

It is very important that cultural resources be evaluated according to the National Heritage Recourse Act. In accordance with the Act, we have found the following:

- These sites are classified as important based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) section 3 (3).

A place or object is to be considered part of the national estate if it has cultural significance or other special value because of-

- (a) its importance in the community, or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;

- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- (h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- (i) sites of significance relating to the history of slavery in South Africa.

(Refer to Section 9 of this document for assessment)

These sites should be managed through using the National Heritage Recourses Act 1999 (Act No 25 of 1999) sections 4,5 and 6 and sections 39-47.

Please refer to Section 9 for Management Guidelines.

4. ASSESSMENT CRITERIA

This chapter describes the evaluation criteria used for the sites listed below.

The significance of archaeological sites was based on four main criteria:

- **site integrity** (i.e. primary vs. secondary context),
- **amount of deposit, range of features** (e.g., stonewalling, stone tools and enclosures),
- **uniqueness** and
- **potential** to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows:

A - No further action necessary;

B - Mapping of the site and controlled sampling required;

C - Preserve site, or extensive data collection and mapping of the site; and

D - Preserve site

Impacts on these sites by the development will be evaluated as follows

4.1 IMPACT

The potential environmental impacts that may result from the proposed development activities.

4.1.1 Nature and existing mitigation

Natural conditions and conditions inherent in the project design that alleviate (control, moderate, curb) impacts. All management actions, which are presently implemented, are considered part of the project design and therefore mitigate against impacts.

4.2 EVALUATION

4.2.1 Site Significance

The significance rating scale is as follows:

HIGH: Must be mitigated or not impacted on at all.

LOW - MEDIUM: May require further work before development can commence.

NO SIGNIFICANCE: Do not require mitigation.

4.2.2 Certainty

DEFINITE: More than 90% sure of a particular fact. Substantial supportive data exist to verify the assessment.

PROBABLE: Over 70% sure of a particular fact, or of the likelihood of impact occurring.

POSSIBLE: Only over 40% sure of a particular fact or of the likelihood of an impact occurring.

UNSURE: Less than 40% sure of a particular fact or likelihood of an impact occurring.

4.2.3 Duration

SHORT TERM: 0 to 5 years

MEDIUM: 6 to 20 years

LONG TERM: more than 20 years

DEMOLISHED: site will be demolished or is already demolished

Example

Evaluation

IMPACT	SIGNIFICANCE	CERTAINTY	DURATION	MITIGATION
Negative	high negative	definite	long	C

5. HISTORICAL BACKGROUND OF AREA

As heritage surveys deal with the locating of heritage resources in a prescribed cartographic landscape, the study of archival and historical data, and especially cartographic material, can represent a very valuable supporting tool in finding and identifying such heritage resources.

The historical background and timeframe can be divided into the Stone Age, Iron Age and Historical timeframe. These can be divided as follows:

Stone Age

The Stone Age is divided in Early; Middle and Late Stone Age and refers to the earliest people of South Africa who mainly relied on stone for their tools.

Earlier Stone Age: The period from \pm 2.5 million yrs - \pm 250 000 yrs ago. Acheulean stone tools are dominant.

Middle Stone Age: Various lithic industries in SA dating from \pm 250 000 yrs – 22 000 yrs before present.

Later Stone Age: The period from \pm 22 000-yrs before present to the period of contact with either Iron Age farmers or European colonists.

Iron Age

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the Pre-Historic and Historic periods. Similar to the Stone Age it can be divided into three periods:

The Early Iron Age: Most of the first millennium AD.

The Middle Iron Age: 10th to 13th centuries AD

The Late Iron Age: 14th century to colonial period.

Historic Timeframe

The historic timeframe intermingles with the later parts of the Stone and Iron Age, and can loosely be regarded as times when written and oral recounts of incidents became available.

Sekhukhune

Sekhukhune became king of the Bapedi after the death of his father Sekwati in 1861. He deposed Mampuru as the rightful heir and took up his reign at Thaba Mosega in the Lelolo Mountains.

The number of people under Sekhukhune's rule increased rapidly. An estimate of 1879 established their total at 75 000, of whom 15 000 were capable of bearing arms. This included many neighbouring tribes who had been persuaded to declare themselves loyal to Sekhukhune (Smith, 1969).

In 1873 Sekhukhune's brother, Johannes Dinkwanyane, who had fled with Merensky and the Bapedi Christians to Botshabelo, left the mission station with his followers and settled at Mafolofolo near Lydenburg (Delius, 2007).

Numerous raids and attacks by the Bapedi followed in the region and subsequently war was declared on the Bapedi on 16 March 1876 (Smith, 1969).

On 13 July 1876 an attack was launched on Mafolofolo by a combined force of some 2000 burghers, 600 Transvaal Africans and some 2400 Swazi warriors. Dinkwanyane was mortally wounded and buried at Mafolofolo.

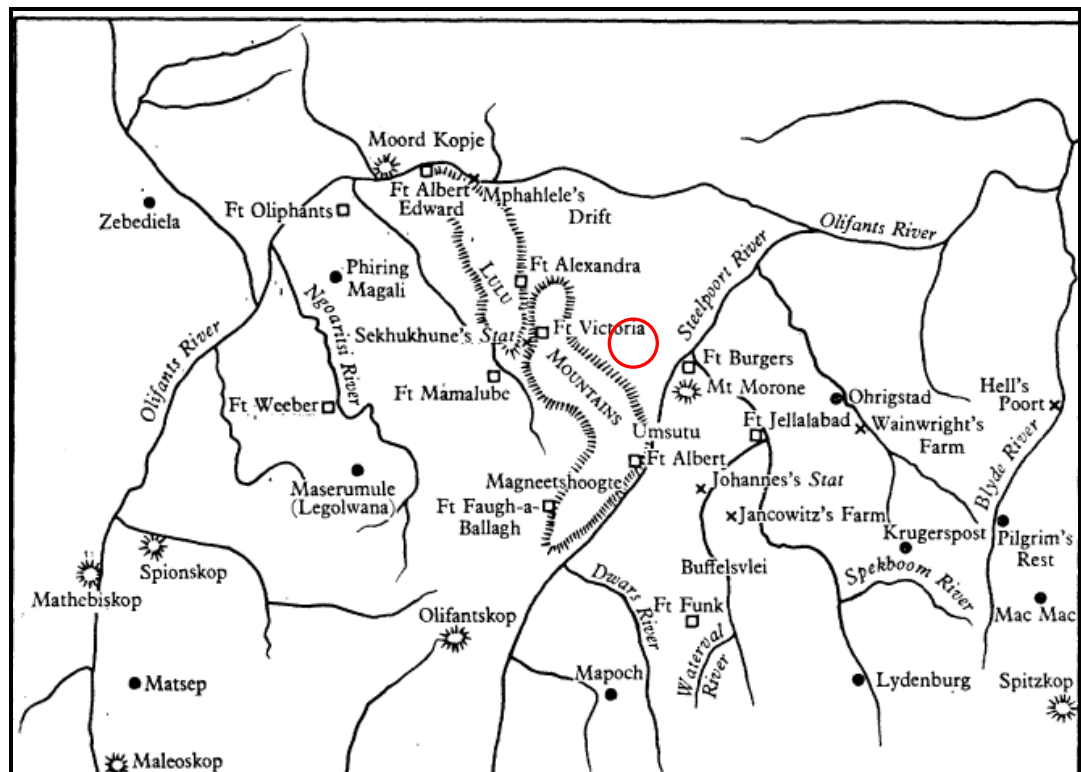


Figure 1: Sekhukhune's country and vicinity 1877-1880 (Smith, 1969) (Red indicating study area)

On 2 August 1876 the first assault was launched on Sekhukhune's stronghold Dsjate by a combined ZAR army. The attack was repelled and the burgher army retreated. With the retreat of the burghers they constructed Fort Burgers to the eastern side and Fort Webber to the western side of the Lelolo Mountains to protect Middelburg and Lydenburg from raids by Sekhukhune's forces (Smith, 1969).

The annexation of the Transvaal on 12 April 1877 saw the launch of a punitive expedition by Sir Garnet Wolseley on Sekhukhune and his followers. Wolseley's army consisted of 3 500 white troops and 3000 Transvaal African auxiliaries and some 8 000 Swazi warriors accompanied by Mampuru.

The assault, that commenced on 28 November 1879, on Sekhukhune's strong hold caused many casualties on both sides and on 2 December 1879 Skhukhune was captured (Kinsley, 1973).

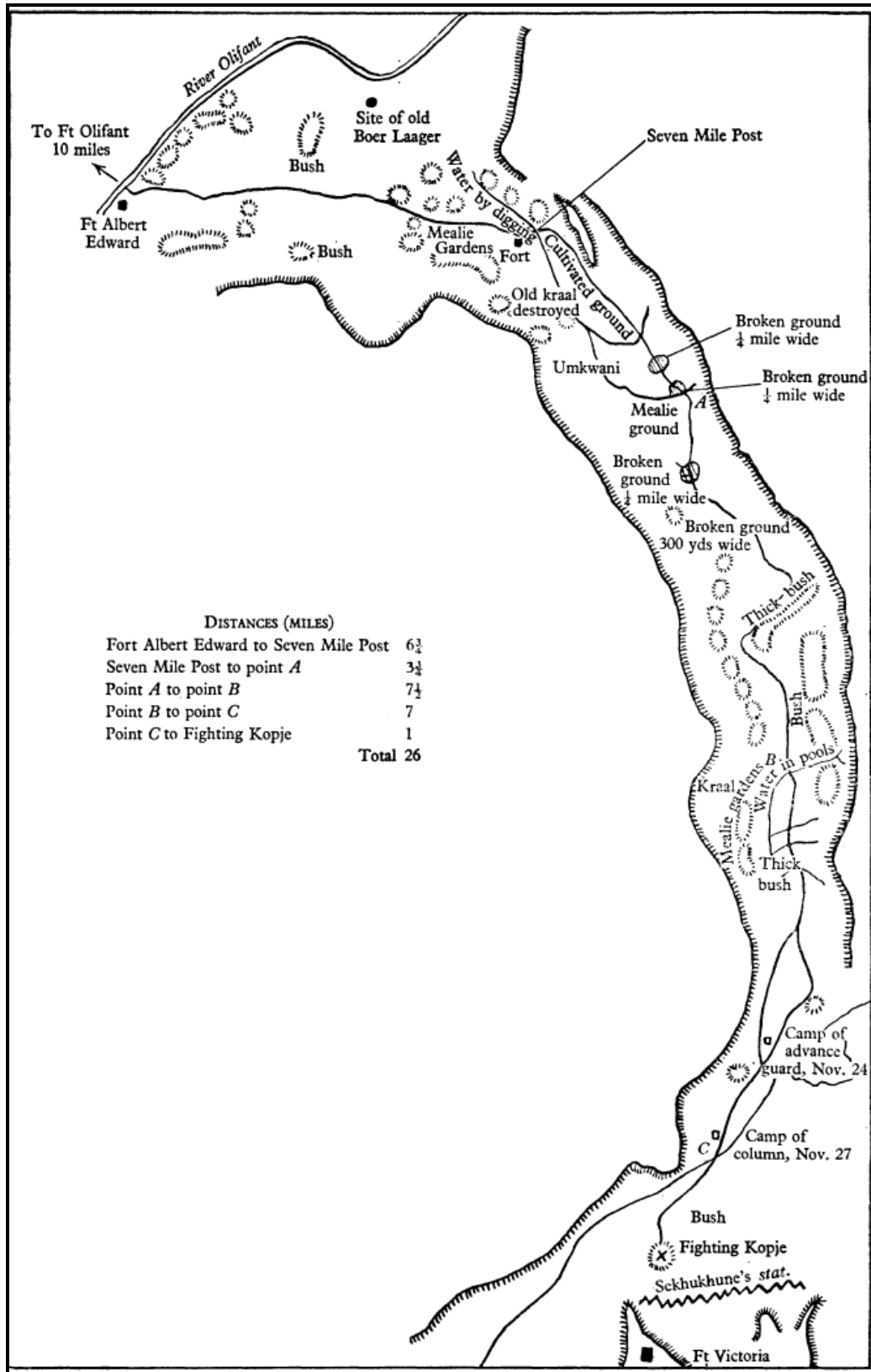


Figure 2: Dsjate Valley and layout of the last assault on Sekhukhune (Smith, 1969)

6. SITES OF SIGNIFICANCE

The site of the proposed mining activities is situated in one of the northern tributaries of the Moopetsi River some 20 kilometres northwest of Burgersfort. The site itself is highly eroded in the area earmarked for the waste stock piles and tailings dam. The areas allocated for the plant and shaft area has previously been utilised for mining activities.

As the the Burgersfort area is known for its rich Early Iron Age history the survey was concentrated on the eroded alluvial flood plain in the area of the proposed tailings and waste rock dumps.

One cemetery with one grave is present on site.

6.1 2430CA-MHC001

Description of Site:			
Site Number	MHC001		
Map reference	Topo-sheet number	Number of Map in report	
	22430CA	Annexure A	
GPS coordinates: <i>Indicate Model and datum - WGS 84</i>	X	Y	
Garmin 38, WGS 84	-24.5771832	30.1476753	
Site Data	Description		
Type of site (e.g. open scatter; shell midden, cave /shelter);	Cemetery, consisting of one grave		
Site categories (e.g. Earlier Stone Age, Late Iron Age);	Historic		
Context (i.e. primary or secondary);	Primary		
<i>Cultural affinities, approximate age and significant features of the site;</i>	None		

<p>Estimation or measurement of the extent (maximum dimensions) and orientation of the site(s);</p>	<p>5 x 5m</p>
<p>Depth and stratification of the site (where shovel test permits have been given), both in the text and through photographs of the sections;</p>	<p>None visible</p>
<p>Possible sources of information about past environments, such as stalactites/ stalagmites, flowstone, dassie middens, peat or organic rich deposits.</p>	<p>None</p>
<p>Photographs and diagrams (Figure numbers)</p>	<div data-bbox="699 927 1305 1727" data-label="Image"> <p>The photograph shows an outdoor archaeological site on reddish-brown soil. A rectangular stone structure is visible, along with a shovel test pit. Various artifacts are scattered around, including a white cup, a yellow container, and a wooden stick. A scale bar is placed on the ground for reference. The site is surrounded by rocks and some vegetation in the background.</p> </div> <p>• Figure 3: Photo of cemetery</p>
<p>Statement of Significance (Heritage Value)</p>	<p>The site is of high significance.</p>

Field Rating (Recommended grading or field significance) of the site:	Generally protected (GP.A)				
Impact Evaluation of development on site	Impact on site is seen as medium negative, through possible destruction of site				
Recommendations including:	The graves must be relocated if required through the appropriate relocation process.				
Summary					
Field Rating	Impact	Impact Significance	Certainty	Duration	Mitigation
Grade GP.A	Negative	High	Possible	Long term	B

(Refer to **Figure 1** for layout of the property.)

No other sites of cultural heritage significance were found during the survey.

7. ASSUMPTIONS AND LIMITATIONS

Due to the nature of cultural remains that occur, in most cases, below surface, the possibility remains that some cultural remains may not have been discovered during the survey. Although MATAKOMA-ARM surveyed the area as thorough as possible, it is incumbent upon the developer to inform the relevant heritage agency should further cultural remains be unearthed or laid open during the process of development.

8. LEGAL AND POLICY REQUIREMENTS

In areas where there has not yet been a systematic survey to identify conservation worthy places, a permit is required to alter or demolish any structure older than 60 years. This will apply until a survey has been done and identified heritage resources are formally protected.

Archaeological and palaeontological sites, materials, and meteorites are the source of our understanding of the evolution of the earth, life on earth and the history of people. In the new legislation, permits are required to damage,

destroy, alter, or disturb them. People who already possess material are required to register it.

The management of heritage resources are integrated with environmental resources and this means that before development takes place heritage resources are assessed and, if necessary, rescued.

In addition to the formal protection of culturally significant graves, all graves, which are older than 60 years and are not in a cemetery (such as ancestral graves in rural areas), are protected. The legislation protects the interests of communities that have interest in the graves: they may be consulted before any disturbance takes place.

The graves of victims of conflict and those associated with the liberation struggle will be identified, cared for, protected and memorials erected in their honour.

Anyone who intends to undertake a development must notify the heritage resource authority and if there is reason to believe that heritage resources will be affected, an impact assessment report must be compiled at the developer's cost. Thus developers will be able to proceed without uncertainty about whether work will have to be stopped if a heritage resource is discovered.

According to the National Heritage Act (Act 25 of 1999 section 32) it is stated that:

An object or collection of objects, or a type of object or a list of objects, whether specific or generic, that is part of the national estate and the export of which SAHRA deems it necessary to control, may be declared a heritage object, including –

- objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, meteorites and rare geological specimens;
- visual art objects;
- military objects;
- numismatic objects;
- objects of cultural and historical significance;
- objects to which oral traditions are attached and which are associated with living heritage;
- objects of scientific or technological interest;
- books, records, documents, photographic positives and negatives, graphic material, film or video or sound recordings,

excluding those that are public records as defined in section 1 (xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996), or in a provincial law pertaining to records or archives; and

- any other prescribed category.

Under the National Heritage Resources Act (Act No. 25 of 1999), provisions are made that deal with, and offer protection, to all historic and pre-historic cultural remains, including graves and human remains.

- Graves younger than 60 years fall under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the Office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning, or in some cases the MEC for Housing and Welfare. Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. In order to handle and transport human remains the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

- Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the South African Heritage Resource Agency (SAHRA). The procedure for Consultation Regarding Burial Grounds and Graves (Section 36(5) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in the category located inside a formal cemetery administrated by a local authority will also require the same authorisation as set out for graves younger than 60 years over and above SAHRA authorisation. If the grave is not situated inside a formal cemetery but is to be relocated to one,

permission from the local authority is required and all regulations, laws and by-laws set by the cemetery authority must be adhered to.

9. ASSESSMENT AND RECOMMENDATIONS

*A locality map is provided in **Annexure A***

If it is found that the preservation of the cemetery of site MHC001 is impossible, the relocation of the graves must adhere to the guidelines provided by the South African Heritage Resources Agency. These include comprehensive social consultation, permit applications and detailed excavations.

MATAKOMA-ARM can be contacted for further work on this process.

There is from a Heritage point of view no reason why the development can not commence.

General

If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

10. LIST OF PREPARES

Wouter Fourie, BA (Hon) Archaeology (Pretoria)

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ANNEXURE A: Locality Map

MOOIHEK CHROME MINE - AIA

