Ingwe Eco Esate

ARCHAEOLOGICAL IMPACT ASSESSMENT

Residential Development on Portion 71 of the farm Wysfontein 427 JP, Northwest Province

9 November 2007

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ACKNOWLEDGEMENT OF RECEIPT

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- Recommendations delivered to the Client.

EXECUTIVE SUMMARY

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 lain 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.

This document forms part of the Environmental Impact Assessment for the proposed residential development on Portion 71 of the farm Wysfontein 427 JP.

The following outline the findings of the report:

The site earmarked for development has no significant heritage resources on the portion. The larger conservation area do however have extensive stonewalled settlements associated with the Bamodimosana Bammatau. Ethnography indicates settlement of these areas before the establishment of the larger Molokwane capital on Selonskraal.

The survey was only conducted on the portion earmarked for residential development. Other portions in the conservancy was not surveyed and thus any possibly development on these portions will require the survey and identification and demarcation of these sites. However on adjacent portions of the farm Wysfontein, Tweerivier and Moedwil extensive stonewalled settlements are present.

The layout of the settlement units on Tweerivier and Moedwil are associated with the large stonewalled settlement of Molokwane situated to the east on the farm Selonskraal.

If these recommendations are adhered to, by the developer and the associated contractor, from a Heritage perspective there is 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.

A heritage resources management plan must be developed for managing the heritage resources in the study area during construction and operation of the development. This includes:

- ***Monitoring program (watching brief) by an archaeologist***
- ***basic training for construction staff on possible finds,***
- ***action steps for mitigation measures, surface collections, excavations and***
- ***Communication routes to follow in the case of a discovery.***

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1. INTRODUCTION

MATAKOMA-ARM Heritage Contracts Unit was contracted by Umgeni Water to conduct an Heritage Impact Assessment for the proposed Augmentation and extension of the Wartburg Bulk Water Supply Project, KwaZulu- Natal.

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 legal framework provided.

The report outlines the approach and methodology utilised before and during the survey, which includes:

Phase 1: Information collection from various;
Phase 2: Physical surveying of the area on foot and by vehicle, and;
Phase 3: Reporting the outcome of the study.

During the survey, no sites of significance were identified within in the development area.

This report must also be submitted to the South African Heritage Resources Agency for scrutiny.

1.1 PROPOSED PROJECT DESCRIPTION

The proposed project will entail the following:

- The development of 46 low density freestanding units on portion 71 of the farm Wysfontein.
- The development will be part of a larger conservancy area that include Portion 51 of the farm Tweerivier, Portions 6, 65, 65, 70, 71 and 91 of the farm Wysfontein 427 JP. (Refer to Figure 1).

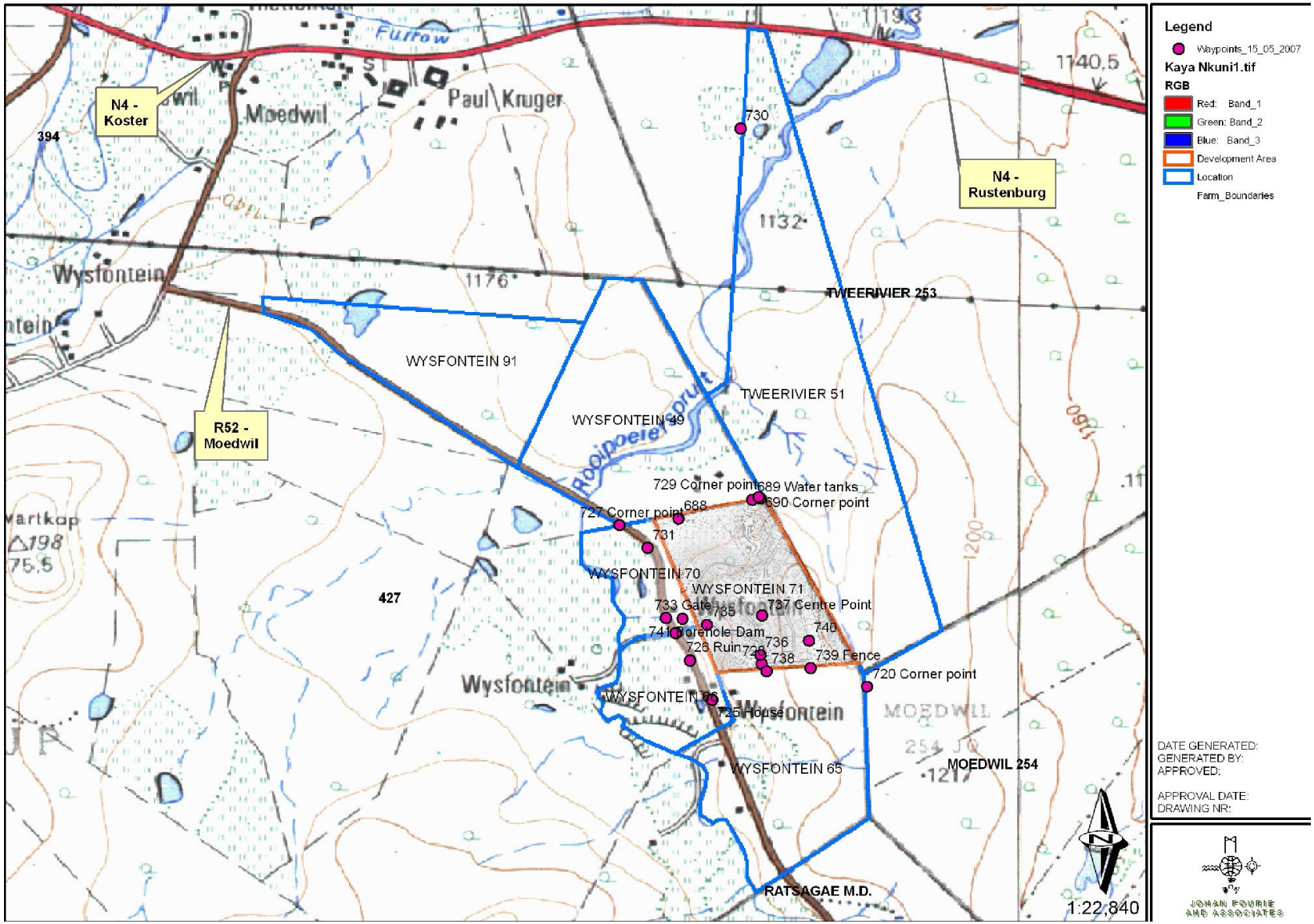

Figure 1: Locality Map

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 occur below the surface, a physical walk through of the route alignment was therefore conducted. Matakoma - ARM Heritage Contract Unit were appointed to conduct a survey of the footprint of the proposed impact area. The study area (44ha) was surveyed over one day, by means of vehicle and extensive surveys on foot.

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

Site significance classification standards prescribed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used for the purpose of this report.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	-	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction
Generally Protected C (GP.C)	-	Low Significance	Destruction

4.2.2 Impact Rating

VERY HIGH

These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or social) environment, and usually result in **severe** or **very severe** effects, or **beneficial** or **very beneficial** effects.

Example: The loss of a species would be viewed by informed society as being of VERY HIGH significance.

Example: The establishment of a large amount of infrastructure in a rural area, which previously had very few services, would be regarded by the affected parties as resulting in benefits with a VERY HIGH significance.

HIGH

These impacts will usually result in long term effects on the social and/or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light.

Example: The loss of a diverse vegetation type, which is fairly common elsewhere, would have a significance rating of HIGH over the long term, as the area could be rehabilitated.
Example: The change to soil conditions will impact the natural system, and the impact on affected parties (in this case people growing crops on the soil) would be HIGH.

MODERATE
These impacts will usually result in medium- to long-term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by society as constituting a fairly important and usually medium term change to the (natural and/or social) environment. These impacts are real but not substantial.
Example: The loss of a sparse, open vegetation type of low diversity may be regarded as MODERATELY significant.
Example: The provision of a clinic in a rural area would result in a benefit of MODERATE significance.

LOW
These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by the public and/or the specialist as constituting a fairly unimportant and usually short term change to the (natural and/or social) environment. These impacts are not substantial and are likely to have little real effect.
Example: The temporary change in the water table of a wetland habitat, as these systems are adapted to fluctuating water levels.
Example: The increased earning potential of people employed as a result of a development would only result in benefits of LOW significance to people who live some distance away.

NO SIGNIFICANCE
There are no primary or secondary effects at all that are important to scientists or the public.

Example: A change to the geology of a particular formation may be regarded as severe from a geological perspective, but is of NO significance in the overall context.

4.2.3 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.

4.2.4 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	**Impact Significance**	**Heritage Significance**	**Certainty**	**Duration**	**Mitigation**
Negative	Moderate	Grade GP.B	Possible	Short term	B

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:

5.1 STONE AGE

The Stone Age is divided into 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 ± 2.5 million yrs - ± 250 000 yrs ago. Acheulean stone tools are dominant.

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

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

5.2 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 to 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.

The farms Modewill, Selonskraal and Shylock have extensive known archaeological stonewalled settlements associated with the Bakwena Bamodimosana chiefdoms.

The largest of these settlement is Molokwane, occupied by the Bakwena Bamodimosana tribe between 1650 and 1770. It covers an area of approximately 4 km². The site is seen as having national significance and graded as Level 1.

5.3 HISTORIC TIMEFRAME

17th Century to present AD (1600 – 2000)

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.

6. SITES OF SIGNIFICANCE

The site earmarked for development has no significant heritage resources on the portion. The larger conservation area do however have extensive stonewalled settlements associated with the Bamodimosana Bammatau. Ethnography indicates settlement of these areas before the establishment of the larger Molokwane capital on Selonskraal.

The survey was only conducted on the portion earmarked for residential development. Other portions in the conservancy was not surveyed and thus any possibly development on these portions will require the survey and identification and demarcation of these sites. The following table gives a breakdown of the characteristics found on the sites located to the east of the eastern fence of the development.

Figure 2: Structures younger than 60 years on site

6.1 2526DB-MHC001

Description of Site: ***Site Number***	2526DB-MHC001		
Map reference	***Topo-sheet number***	***Number of Map in report***	
	2526DB	***Annexure B***	
GPS coordinates: *Indicate Model and datum - WGS 84*	X	Y	
Garmin 38, WGS 84	E26.9935	S25.65784	
Site Data	***Description***		
Type of site *(e.g. open scatter; shell midden, cave /shelter);*	Late Iron Age stonewalled settlement		
Site categories *(e.g. Earlier Stone Age, Late Iron Age);*	Late Iron Age 1600 AD		
Context *(i.e. primary or secondary);*	Primary		
Cultural affinities, approximate age and significant features of the site;	Bamodimosana Bammatau		

Estimation or measurement of the extent *(maximum dimensions) and orientation of the site(s);*	Measured width of main settlement approximately 400 metres. Site extends in a north south alignment
Depth and stratification of the site *(where shovel test permits have been given), both in the text and through photographs of the sections;*	Major ash middens in entrance areas of southern section on the farm Moedwil. Remains of huts and layout of settlement in primary contexts. Walls in large areas still well preserved.
Possible sources of information about past environments, such as stalactites/ stalagmites, flowstone, dassie middens, peat or organic rich deposits.	None
Photographs and diagrams *(Figure numbers)*	 *Figure 3: Well preserved walling*

	 *Figure 4: Preserved hut foundation*  *Figure 5: Fire breaks bulldozed through archaeological site*
Statement of Significance *(Heritage Value)*	The site is of **high** heritage significance. As it is linked to later settler communities of the area
Field Rating *(Recommended grading or field significance)* of the site:	Local Significance (GP.3B)
***Impact Evaluation** of development on site*	Impact on site is seen as possibly low negative, however the 20 metre servitude for the pipeline provides for conservation of the site

Recommendations *including:*	Fencing with 15 metre buffer zone.				
Summary					
Field Rating	**Impact**	**Impact Significance**	**Certainty**	**Duration**	**Mitigation**
Grade GP.3B	Negative	High	Possible	Long term	C

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 thoroughly 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.

9. ASSESSMENT AND RECOMMENDATIONS

A locality map is provided in ***Annexure A*** and Heritage Sites in ***Annexure B***

A summary of the recommendations for each of the main heritage sites follows:

During the survey no sites of heritage value were found within the proposed layout area as indicated. However on adjacent portions of the farm Wysfontein, Tweerivier and Moedwil extensive stonewalled settlements are present.

The layout of the settlement units on Tweerivier and Moedwil are associated with the large stonewalled settlement of Molokwane situated to the east on the farm Selonskraal.

If these recommendations are adhered to, by the developer and the associated contractor, from a Heritage perspective there is 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.

A heritage resources management plan must be developed for managing the heritage resources in the study area during construction and operation of the development. This includes:

- ***Monitoring program (watching brief) by an archaeologist***
- ***basic training for construction staff on possible finds,***
- ***action steps for mitigation measures, surface collections, excavations and***
- ***Communication routes to follow in the case of a discovery.***

10. LIST OF PREPARES

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11.1 ARCHIVAL RESEARCH

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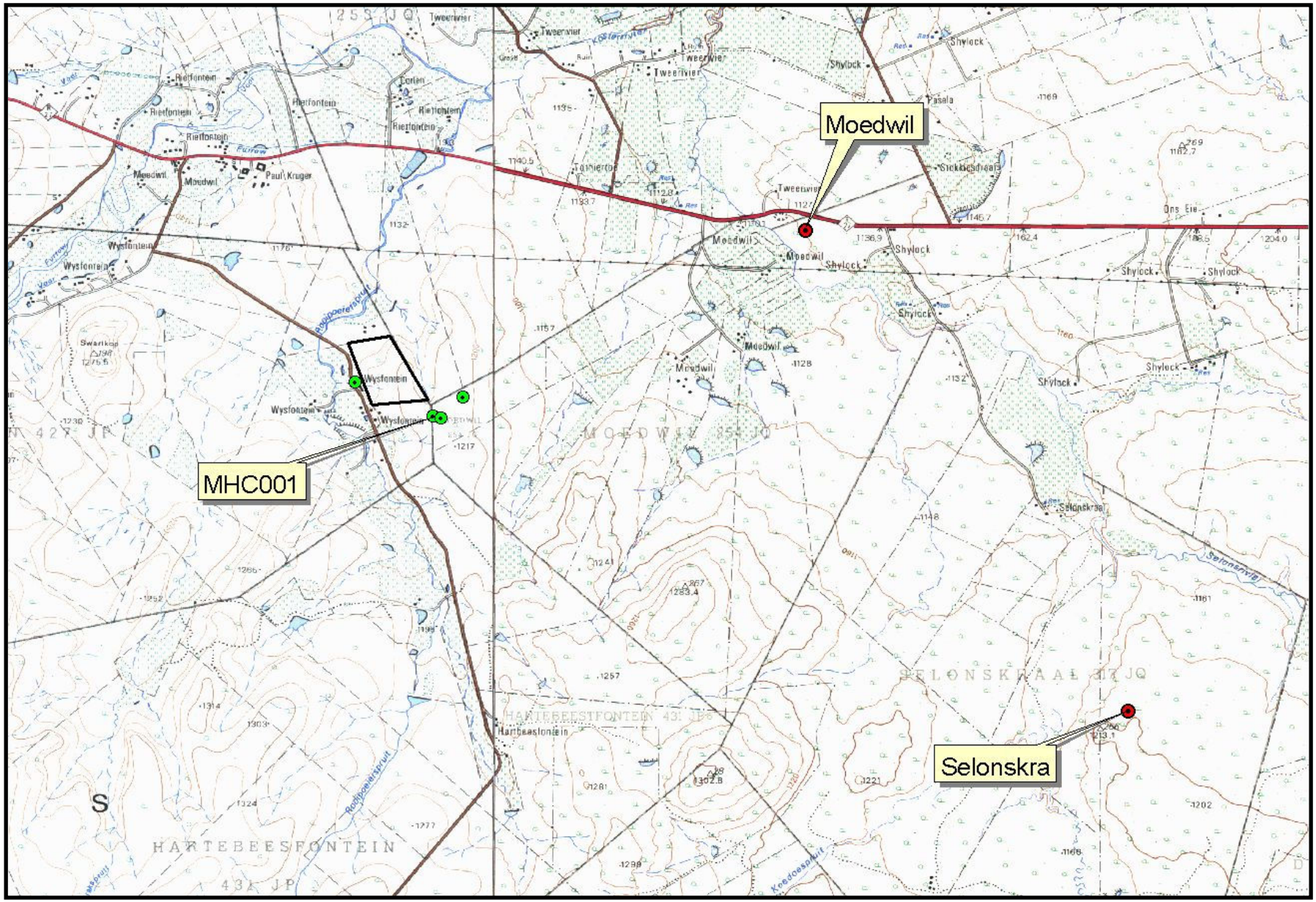
ANNEXURE A: Locality Map

Refer of Figure 1

ANNEXURE B:
Heritage Sites


Moedwil
MHC001
Selonskra
Wysfontein
Tweerivier
Shylock
Rietfontein
Paul Kruger
Swartkop
Hartbeestfontein
HARTEBEESFONTEIN 431 JP
MOEDWIL 351 JQ
SELONSKRAAL 317 JQ