

**AN ECOLOGICAL ASSESSMENT OF THE TERRESTRIAL ECOSYSTEM OF
THE PROPOSED EXTENSION SHARE BLOCK PRIVATE RESORT
DEVELOPMENT ON THE REMAINDER PORTION 4 AND PORTION 8, RIETVLEY
28KU MPUMALANGA, SOUTH AFRICA
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Appendix B: Rietvley: Faunal Assessment and Habitat Integrity: Dr. Andrew Deacon, 2005.

Appendix C: Rietvley Game Reserve: Soils and Ecological Report: Mr. Francois de Wet, 2004.

1. ABBREVIATIONS AND ACRONYMS

DAFF	Department of Agriculture, Forestry and Fisheries
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
ECO	Ecological Control Officer
e.g.	For Example
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
GPS	Geographical Positioning System
IEM	Integrated Environmental Management
NGO's	Non Governmental Organisations
SANBI	South African National Biodiversity Institute

2. EXECUTIVE SUMMARY

The Rietvley Farm (Rietvley 28KU), bordering the Ndlopfu Game Reserve was resold to a number of investors. The southern portions, Remainder of Portion 4 and Portion 8 were acquired by the Ndlopfu Shareholders. Ndlopfu is home to 25 privately owned holiday homes. Ndlopfu Share Block Pty. Ltd has expressed an intention to expand their business enterprise into the new “Rietvley” Section of the farm. This expansion proposes to develop an **additional six privately owned holiday homes**.

An **Environmental Impact Assessment** (EIA) is required to determine whether the proposed new lodges will have a significant impact upon the social-, economic- and natural environment of the area destined for development.

As part of the evaluation, a **Biodiversity/Ecological Study** is required to ensure that the development is undertaken in a sustainable manner taking into account the potential impacts on the natural environment.

To ensure sustainability and reduce environmental impact at these holiday home sites the following **key recommendations** are offered for implementation:

- All proposed holiday home sites can be developed provided the recommendations in Section 8 and measures of mitigation are implemented.
- Appoint an ECO to oversee the development process and ensure compliance with the contents of the Environmental Authorisation and the EMP.
- Ensure that the development footprints honour the site limitations listed in this report.
- Special attention must be afforded to avoid termitaria, drainage lines and special trees of conservation concern/importance.
- Implement the “leave that log” principle to ensure habitat health and integrity.

3. INTRODUCTION

The Rietvley Farm (Rietvley 28KU), bordering the Ndlopfu Game Reserve was resold to a number of investors. The southern portions, Remainder of Portion 4 and Portion 8 were acquired by the Ndlopfu Shareholders. Ndlopfu is home to 25 privately owned holiday homes. Ndlopfu Share Block Pty. Ltd has expressed an intention to expand their business enterprise into the new “Rietvley” Section of the farm. This expansion proposes to develop an **additional six privately owned holiday homes**.

An **Environmental Impact Assessment** (EIA) is required to determine whether the proposed development will have a significant impact upon the social-, economic- and natural environment of the area destined for development. The EIA is being undertaken by **Mr. Peter Velcich** from NuLeaf Planning and Environmental.

Ralf Kalwa from Rhengu Environmental Services was requested by Peter Velcich to undertake the Ecological Assessment which would assess the **potential impacts** of the development on the **ecological integrity** of the proposed holiday home sites. This investigation includes various aspects of the **terrestrial components** (flora, fauna and soil) in the ecosystem.

This report describes the approach which was followed to obtain answers and submit recommendations to address the **following questions**:

- Identify and describe the main vegetation/habitat types of the study area.
- Identify the types of plant communities that occur in the study area with emphasis on threatened- and vulnerable ecosystems.
- Identify (if any) plant- and animal species of conservation concern.
- Identify and describe the main soil types prevalent in the study area and highlight the limitations these soils place on potential development opportunities.
- Give an indication of potentially expected impacts on the biodiversity that can be expected as a result of the proposed activity.
- Assess the possibility of mitigation where significant impacts may occur.
- Submit applicable recommendations to ensure the conservation of the biodiversity of the development nodes.

4. PROJECT APPROACH

4.1. PROJECT BACKGROUND

The **results in this report** were achieved through:

- Liaison with the **Environmental Assessment Practitioner (EAP)**.
- A review of all applicable and relevant **documents** and **maps** pertaining to the proposed activity.
- A review of all **available literature** pertaining to rare- and threatened biota known to occur in the study area or the surrounding area.
- **Review of Specialist Studies**: It is important to note that a number of **Specialist Studies** were undertaken on the entire Rietvley Farm a number of years ago by a team of ecologists and soil specialists. These reports are attached to this study as **appendices** and form the basis for this current evaluation.
- An on site **assessment** of the preferred holiday home sites.

4.2. KEY POINTS AND ISSUES RELEVANT TO THE PROJECT

The following **key points and issues** required attention:

4.2.1. Vegetation Issues:

- Undertake a visual assessment of the **vegetation types at each preferred and alternative holiday home site**.
- Ascertain whether any **rare plants/plants of special concern** are found in the path of the proposed development/activity.

4.2.2. Fauna Issues:

- Confirm the presence (where applicable) of any **Red Data** listed species and **associated habitat at the proposed holiday home sites**.
- **Broadly describe** the resident habitat types with special reference to those affected by the proposed development.

4.2.3. Soil Types:

- Describe/verify the **soil type** at each holiday home site with specific reference to development potential and limitations expected.
- Suggest **management options** for each site with specific reference to protecting the soil surface and or surrounding environment.

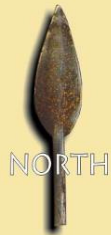
4.3. METHODOLOGY

- A site visit was undertaken to each holiday home site.
- At each site we covered a 100m x 100m area by foot around the centre point as indicated by the site peg.
- Using the **Specialist Studies** (fauna; flora and soils) as a reference we assessed each site against the findings listed in these reports.
- We assessed the sites specifically for **plant species of concern and the presence of sensitive habitats (if any)**, e.g. rocky outcrops, drainage lines, wetlands or pans.
- **Individual species of conservation importance** and or **individual importance in a local sense**, were identified where applicable and noted for special attention.

- Special attention was also given to species listed by the South African National Botanical Research Institute (**SANBI**) as **rare or threatened**.
- **Representative habitats** were noted and classified regarding habitat aspects and coverage.
- All **faunal species** and signs of animals were recorded in the relevant habitat/s along the route.
- Finally, we looked for **impacts and disturbances** (e.g. roads, dump sites; pollution etc.) which could play a role in the site condition or explain prevailing conditions or could have an influence on the ecology of the site.



Implement the “Leave that Log” Principle



2013 BAR STUDY AREA BOUNDARY:
Remainder Portion 4 and Portion 8, Rietvley 28KU

Rietvley Farmhouse

SOIL FORMS

- 1 Gienroosa
- 2 Valsrivier
- 3 Hutton
- 4 Gienroosa
- 5 Gienroosa
- 6 Cartref
- 7 Cartref
- 8 Oakleaf
- 9 Gienroosa
- 10 Gienroosa
- 11 Gienroosa
- 12 Oakleaf
- 13 Gienroosa
- 14 Gienroosa
- 15 Valsrivier
- 16 Oakleaf
- 17 Gienroosa
- 18 Gienroosa
- 19 Gienroosa
- 20 Gienroosa
- 21 Oakleaf
- 22 Gienroosa
- 23 Gienroosa
- 24 Cartref
- 25 Gienroosa
- 26 Gienroosa
- 27 Gienroosa
- 28 Valsrivier
- 29 Gienroosa
- 30 Gienroosa
- 31 Oakleaf
- 32 Gienroosa
- 33 Gienroosa
- 34 Gienroosa
- 35 Dundee
- 36 Klapmuts

GENERAL

- REM. PTN. 4 & PTN. 8
RIETVLEY 28 KU
- PROPOSED HOLIDAY HOME SITES & ALTERNATIVES
- ROADS
- FARM HOUSE
- STAFF QUARTERS
- AIR STRIP
- BOREHOLE
- DAMS
- DRAINAGE LINES

HABITAT DESCRIPTION

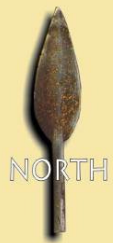
- MIXED THORN TREE / BROAD-LEAVED COMMUNITIES OF THE SHALLOW SOILS ON THE CRESTS AND MIDSLOPES
 - Knob Thorn (*Acacia nigrescens*) / Red Bush Willow (*Combretum apiculatum*) short/low thickets on lithocutanic loamy sandy to sandy clay loams via pebble bed (Gienroosa form)
- BROAD-LEAVED COMMUNITIES OF THE SHALLOW SOILS ON THE CRESTS AND MIDSLOPES
 - Red Bush Willow (*Combretum apiculatum*) / Mopane (*Colophospermum mopane*) short/low thickets on lithocutanic sandy to sandy loams via pebble bed (Gienroosa and Cartref forms)
- BROAD-LEAVED COMMUNITIES OF THE DEEP RED SOILS ON THE CRESTS AND MIDSLOPES
 - Purple-pod Terminalia (*Terminalia prunioides*) short thickets on red apedal sandy clay loams (Hutton form)
- THICKETS / TALL CLOSED WOODLANDS ON FOOTSLOPES
 - Mopane (*Colophospermum mopane*) low thickets / tall closed woodlands on pedocutanic sandy clays (Valsrivier and Klapmuts forms)
- RIVERINE AND FOOTSLOPE THICKETS / TALL CLOSED WOODLANDS ALONG RIVERBANKS
 - Tambooli (*Spirostachys africana*) or Jackalberry (*Diospyros mespiliformes*) short thickets on deep alluvial or neocutanic soils (Oakleaf forms (O) and Dundee forms (D))

SOIL TEXTURES

- SITE 1
Topsoil: Sandy Loam
Subsoil: Sandy Loam
- SITE 24, 32, 35
Topsoil: Sandy
Subsoil: Sandy
- SITE 2, 15, 36
Topsoil: Sand
Subsoil: Sandy Clay
- SITE 3, 8, 9, 10, 12, 18, 20, 22, 23, 26, 28
Topsoil: Sandy Loam
Subsoil: Sandy Clay Loam
- SITE 4, 5, 11, 19, 21, 27
Topsoil: Loamy Sand
Subsoil: Sandy Loam
- SITE 6, 7, 17
Topsoil: Sand
Subsoil: Loamy Sand
- SITE 13, 14, 29, 30, 31, 34
Topsoil: Sandy Clay Loam
Subsoil: Sandy Clay Loam
- SITE 16, 25, 33
Topsoil: Loamy Sand
Subsoil: Sandy Clay Loam



RIETVLEY - SOIL AND HABITAT MAP



2013 BAR STUDY AREA BOUNDARY:
Remainder Portion 4 and Portion 8, Rietvley 28KU

Rietvley Farmhouse

Site 6

Site 5

Site 4

Site 1

Site Alt. B

Site 3

Site 2

- GENERAL**
- REM. PTN. 4 & PTN. 8
RIETVLEY 28 KU
 - PROPOSED HOLIDAY
HOME SITES &
ALTERNATIVES
 - ROADS
 - FARM HOUSE
 - STAFF QUARTERS
 - AIR STRIP
 - BOREHOLE
 - DAMS
 - DRAINAGE LINES



- ECOLOGICAL ZONES**
- SENSITIVE ZONE
 - INTERMEDIATE ZONE
 - DEVELOPMENT ZONE

RIETVLEY - MANAGEMENT MAP

5. RESULTS

5.1. Site Photographs: Holiday Home Development Nodes: Rietvley: October 2013



Figure 1: Site 1 with Martial Eagle Nest.



Figure 2: Site 2. Avoid the termitarium and drainage line.



Figure 3: Site 3. Avoid the sodic soils and the tamboti trees.



Figure 4: Site 4. Develop south of the centre peg.



Figure 5: Site 5. Avoid the termitarium.



Figure 6: Site 6. Avoid the drainage line.

Site Photographs: Holiday Home Development Nodes: Rietvley: October 2013



Figure 7: Alternative A. Avoid the drainage line and the termitarium.



Figure 8: Alternative B.

Refer to the following Appendices for detail:

- **Appendix A**: Floristic Assessment of Proposed Housing Development: Mr. Mervyn Lötter, 2005.
- **Appendix B**: Rietvley: Faunal Assessment and Habitat Integrity: Dr. Andrew Deacon, 2005.
- **Appendix C**: Rietvley Game Reserve: Soils and Ecological Report: Mr. Francois de Wet, 2004.



Elephant impact often establishes habitat for Smaller Vertebrates. Conserve all Habitat Types.

5. 2. Preferred Holiday Home Sites Evaluation:

Site Number:	Soil Type	Habitat/Vegetation/Plants	Special Habitat/Other
1:	<ul style="list-style-type: none"> Midslope. Rocky substrate. Lithocutanic loamy sandy to sandy loams. Glenrosa and cartref soil forms dominate No soil limitations noted. Suitable for development. 	<ul style="list-style-type: none"> Dominant Trees/Shrubs: <i>Acacia nigrescens</i>; <i>Combretum imberbe</i>; <i>Gardenia volkensii</i>; <i>Grewia species</i>, especially -<i>hexamita -flavescens</i> and <i>flava</i>; <i>Acacia exuvialis</i>; <i>Rhigozum zambesiicum</i>; <i>Colophospermum mopane</i>; <i>Euclea divinorum</i> and <i>Ziziphus mucronata</i>. Holiday home Placement: Avoid the leadwood species. The ECO should mark all trees prior to architectural drawings being completed. 	<ul style="list-style-type: none"> Raptor Nest: A martial eagle has made a nest to the north of the site. Nesting sites are often re-used annually and it is recommended that the access route to the site avoids this position and that the alignment is routed away from this tree.
2:	<ul style="list-style-type: none"> Midslope-Footslope. Sandy clays. Drainage line near the site. Bordering on the sensitive clays associated with the drainage system in the south. Soil Limitation: Holiday home placement should avoid the western boundary of the site. The development footprint should optimise the section east of the centre peg. Eastern Boundary of the site is suitable for development. 	<ul style="list-style-type: none"> Dominant Trees/Shrubs: <i>Acacia nigrescens</i>; <i>Combretum imberbe</i>; <i>Grewia species</i>, especially - <i>hexamita -flavescens</i> and <i>flava</i>; <i>Acacia exuvialis</i>; <i>Colophospermum mopane</i>; <i>Euclea divinorum</i>; <i>Ziziphus mucronata</i>; <i>Bolusanthus speciosus</i>; <i>Gymnosporia senegalensis</i>; <i>Manilkara mochisia</i> and <i>Philenoptera violacea</i>. Many mopane trees impacted by elephant. Sensitive termitaria on site. Holiday Home Placement: Avoid the leadwood and apple leaf species. The ECO should mark all trees prior to architectural drawings being completed. 	<ul style="list-style-type: none"> Termitaria and Drainage Line: Avoid impacting upon the termitaria and the drainage line. ECO to indicate these habitat types on the site development plan.
3:	<ul style="list-style-type: none"> Midslope. On the edge of the Mopane and Tamboti Riverine Thickets. Soils are leaning towards those associated with the tamboti landtypes. Evidence of saturated soil conditions in the past. Waterlogging has occurred. Valsrivier-; Klapmuts and Oakleaf soil forms. 	<ul style="list-style-type: none"> Dominant Trees/Shrubs: This community is characterized by <i>Capparis tomentosa</i>; <i>Combretum imberbe</i>; <i>Diospyros mespiliformis</i>; <i>Euclea divinorum</i>; <i>Gardenia volkensii</i>; <i>Pappea capensis</i>; <i>Schotia brachypetala</i>; <i>Spirostachys africana</i>; <i>Colophospermum mopane</i>; <i>Bolusanthus speciosus</i>; <i>Grewia species</i>; <i>Gymnosporia senegalensis</i> and <i>Ziziphus mucronata</i>. Holiday Home Placement: Avoid the tamboti trees. The ECO should mark all trees prior to architectural drawings being completed. 	<ul style="list-style-type: none"> Sodic Soils: This site borders sodic-duplex type soil types. Avoid disturbing these soil types. These soils are highly erodible and will collapse if disturbed.

	<ul style="list-style-type: none"> • Soil Limitation: Holiday Home placement should avoid the eastern boundary of the site. • Western Boundary of the site is suitable for development. 		
4:	<ul style="list-style-type: none"> • Midslope-Footslope. • On the edge of the Red Bushwillow and Mopane Thickets. • Glenrosa and cartref soil forms dominate. • Soil Limitation: Holiday home placement should avoid the northern boundary of the site. • Suitable for development. 	<ul style="list-style-type: none"> • Dominant Trees/Shrubs: <i>Acacia exuvialis</i>; <i>Acacia nigrescens</i>, <i>Bolusanthus speciosus</i>, <i>Colophospermum mopane</i>, <i>Combretum apiculatum</i>, <i>Euclea species</i>; <i>Grewia bicolor</i>, <i>Lannea stuhlmannii</i>, <i>Peltophorum africanum</i> and <i>Ximenia americana</i>. 	<ul style="list-style-type: none"> • Drainage Line: Avoid impacting upon the drainage line north of the site.
5:	<ul style="list-style-type: none"> • Crest-Midslope. • Glenrosa and cartref soil forms dominate. • No soil limitations noted. • Suitable for development. 	<ul style="list-style-type: none"> • Dominant Trees/Shrubs: <i>Acacia exuvialis</i>; <i>Sclerocarya birrea</i>; <i>Acacia nigrescens</i>, <i>Bolusanthus speciosus</i>, <i>Colophospermum mopane</i>, <i>Combretum apiculatum</i>, <i>Euclea species</i>; <i>Grewia bicolor</i>, <i>Lannea stuhlmannii</i>, <i>Philenoptera violacea</i>; <i>Peltophorum africanum</i> and <i>Ximenia americana</i>. • Holiday Home Placement: Avoid the apple leaf, marula and brown ivory species. The ECO should mark all trees prior to architectural drawings being completed. 	<ul style="list-style-type: none"> • Termitarium: Avoid impacting upon the termitarium and the brown ivory (<i>Berchemia discolor</i>) growing on it. ECO to indicate this habitat on the site development plan.
6:	<ul style="list-style-type: none"> • Crest-Midslope. • Rocky substrate. • Lithocutanic loamy sandy to sandy loams. Glenrosa and cartref soil forms dominate. • Soil Limitation: Holiday home placement should avoid the southern boundary of the site. • Suitable for development. 	<ul style="list-style-type: none"> • Dominant Trees/Shrubs: <i>Acacia nigrescens</i>; <i>Combretum imberbe</i>; <i>Gardenia volkensii</i>; <i>Grewia species</i>, especially <i>-hexamita -flavescens</i> and <i>flava</i>; <i>Acacia exuvialis</i>; <i>Sclerocarya birrea</i>; <i>Commiphora africana</i>, <i>Commiphora mollis</i>; <i>Dichrostachys cinerea</i>; <i>Euclea divinorum</i> and <i>Ziziphus mucronata</i>. 	<ul style="list-style-type: none"> • Drainage Line: Avoid impacting upon the drainage line south of the site.

Alternative A:	<ul style="list-style-type: none"> • Midslope-Footslope. • Pedocutanic sandy clays with Valsrivier and Klapmuts soil forms. • Bordering the boundary between the foot- and midslope. • Soil Limitation: Holiday home placement should avoid the western boundary of the site. • Suitable for development. 	<ul style="list-style-type: none"> • Dominant Trees/Shrubs: <i>Acacia exuvialis</i>; <i>Acacia nigrescens</i>; <i>Bolusanthus speciosus</i>; <i>Cassia abbreviata</i>; <i>Colophospermum mopane</i>; <i>Lanea stuhlmannii</i>; <i>Gymnosporia senegalensis</i>; <i>Dichrostachys cinerea</i>; <i>Philenoptera violacea</i>; <i>Combretum hereoense</i>; <i>Sclerocarya birrea</i> and <i>Ziziphus mucronata</i>. 	<ul style="list-style-type: none"> • Drainage Line: Avoid impacting upon the drainage line north of the site. • Termitarium: Avoid impacting upon the termitarium. ECO to indicate this habitat on the site development plan.
Alternative B:	<ul style="list-style-type: none"> • Crest-Midslope. • Rocky substrate. • Lithocutanic loamy sandy to sandy loams. Glenrosa and cartref soil forms dominate • No soil limitations noted. • Suitable for development. 	<ul style="list-style-type: none"> • Dominant Trees/Shrubs: <i>Acacia nigrescens</i>; <i>Combretum apiculatum</i>; <i>Combretum hereroense</i>; <i>Grewia species</i>; <i>Colophospermum mopane</i> and <i>Ziziphus mucronata</i>. 	

6. ENVIRONMENTAL SCREENING OF THE HOLIDAY HOME SITES TO DETERMINE SIGNIFICANCE OF POTENTIAL IMPACTS

To identify the potential impacts and issues which may have an influence on the environment a ranking system was used to assist in decision making. These were ranked as per the different criteria outlined in the Environmental Impact Assessment Guideline Document (DEA) for assessing impacts in Environmental Impact Reports.

6.1. Intensity: Four categories are distinguished as follows:

- Positive (+)
- Negative (-)
- No Impact (0)
- Uncertain (U).

6.2. Significance: The positive- and negative categories are further divided to distinguish between:

- Low Impact = 1.
- Medium Impact = 2.
- Significant Impact = 3.

6.3. Rankings of Issues/Impacts are then summarized as follows:

- Critical Issues/Impacts with scores ≥ -4 to -6 .
- Important Issues/Impacts with scores < -4 to -1 .
- Operational/Management Issues/Impacts with scores ≥ 0 .

6.4. Duration: Is the impact:

- Short Term.
- Medium Term.
- Permanent.

6.5. Probability of impact:

- Improbable (I).
- Probable (?).
- Definite (D).

6.6. Extent: Is the effect:

- Local
- Regional
- National
- International.

6.7. Confidence: To what degree are we confident that the impact will occur:

- Low Confidence.
- Medium Confidence.
- High Confidence.

NA = Not Applicable

KEY OF SYMBOLS TO BE USED IN TABLE BELOW					
	Significant impact		Medium impact		Low impact
Positive impact	+3		+2		+1
Negative impact	-3		-2		-1
Impact uncertain	U				
No envisaged impact	0				
Duration of impact	Short term = S		Medium term = M		Permanent = P
Probability of impact	Improbable = X		Probable = ?		Definite = D
Extent of impact	Local = L	Regional = R	National = N		International = I
Confidence	Low = L	Medium = M	High = H		
TABLE 1: IDENTIFICATION OF PRELIMINARY ENVIRONMENTAL IMPACTS					
ENVIRONMENTAL ELEMENT	DEVELOPMENT		OPERATION	SCORE	
SITE 1:					
1. Soil Type.	0; M;D;L;M		0; M;D;L;M	0	
2. Special Plants.	-1; M; D; L; M		0; M; D; L; M	-1	
3. Habitat.	0; M;D;L;M		0; M;D;L;M	0	
4. Fauna.	-1; M;D;L;H		0; M;D;L;H	-1	
5. Drainage Line.	NA		NA	NA	
6. Other:	NA		NA	NA	
SITE 2:					
1. Soil Type.	-1; M;D;L;H		-1; M;D;L;M	-2	
2. Special Plants.	-1; M; D; L; M		0; M; D; L; M	-1	
3. Habitat.	-1; M; D; L; M		0; M; D; L; M	-1	
4. Fauna.	-1; M; D; L; M		0; M; D; L; M	-1	
5. Drainage Line.	-1; M; D; L; M		0; M; D; L; M	-1	
6. Other:	NA		NA	NA	
Site 3:					
1. Soil Type.	-1; M;D;L;H		-1; M;D;L;M	-2	
2. Special Plants.	-1; M; D; L; M		0; M; D; L; M	-1	
3. Habitat.	-1; M; D; L; M		0; M; D; L; M	-1	
4. Fauna.	-1; M; D; L; M		0; M; D; L; M	-1	
5. Drainage Line.	NA		NA	NA	
6. Other:	NA		NA	NA	

Site 4:			
1. Soil Type.	-1; M;D;L;H	-1; M;D;L;M	-2
2. Special Plants.	-1; M; D; L; M	0; M; D; L; M	-1
3. Habitat.	-1; M; D; L; M	0; M; D; L; M	-1
4. Fauna.	-1; M; D; L; M	0; M; D; L; M	-1
5. Drainage Line.	-1; M; D; L; M	0; M; D; L; M	-1
6. Other:	NA	NA	NA
Site 5:			
1. Soil Type.	0; M;D;L;M	0; M;D;L;M	0
2. Special Plants.	-1; M; D; L; M	0; M; D; L; M	-1
3. Habitat.	0; M;D;L;M	0; M;D;L;M	0
4. Fauna.	-1; M;D;L;H	0; M;D;L;H	-1
5. Drainage Line.	NA	NA	NA
6. Other:	NA	NA	NA
Site 6:			
1. Soil Type.	-1; M;D;L;H	-1; M;D;L;M	-2
2. Special Plants.	-1; M; D; L; M	0; M; D; L; M	-1
3. Habitat.	-1; M; D; L; M	0; M; D; L; M	-1
4. Fauna.	-1; M; D; L; M	0; M; D; L; M	-1
5. Drainage Line.	-1; M; D; L; M	0; M; D; L; M	-1
6. Other:	NA	NA	NA
Alternative A:			
1. Soil Type.	-1; M;D;L;H	-1; M;D;L;M	-2
2. Special Plants.	-1; M; D; L; M	0; M; D; L; M	-1
3. Habitat.	-1; M; D; L; M	0; M; D; L; M	-1
4. Fauna.	-1; M; D; L; M	0; M; D; L; M	-1
5. Drainage Line.	-1; M; D; L; M	0; M; D; L; M	-1
6. Other:	NA		NA
Alternative B:			
1. Soil Type.	0; M;D;L;M	0; M;D;L;M	0
2. Special Plants.	-1; M; D; L; M	0; M; D; L; M	-1
3. Habitat.	0; M;D;L;M	0; M;D;L;M	0
4. Fauna.	-1; M;D;L;H	0; M;D;L;H	-1

5. Drainage Line.	NA	NA	NA
6. Other:	NA	NA	NA



Judicious Waste Management Conserves Biodiversity

6.8. Significant Issues Identified:

6.8.1. Critical/Uncertain/Positive Impacts/Issues:

No critical, uncertain or positive impacts/issues were identified during this assessment.

6.8.2. Important Issues:

A number of important issues were identified. These aspects varied/differed per site:

- Soil Type (Sites 2; 3; 4; 6 and Alternative A).
- Special Plants (Sites 1; 2; 3; 5 and 6).
- Habitat. (Sites 1; 2; 3 and Alternative A)
- Fauna. (All Sites).
- Drainage Lines (Sites 2; 4; 6 and Alternative A).



Remove all Alien/Invader Plants

7. IMPACT DESCRIPTION, MANAGEMENT AND MITIGATION MEASURES:

Important Issues	Discussion/Mitigation/Management Approach
<p>1. Soil Type.</p>	<ul style="list-style-type: none"> • Background (Specialist Study: de Wet, 2004) See Appendix C: The Management Zones of Rietvley are broadly separated and illustrated in the Management Map into three categories, namely: <ul style="list-style-type: none"> 1. Sensitive Zone: Two vegetation communities are lumped into this unit: <ul style="list-style-type: none"> • The Riverine and Foothlope Thickets/Tall Closed Woodlands along Riverbanks – Tamboti (<i>Spirostachys africana</i>)/Jackalberry (<i>Diospyros mespiliformes</i>) short thickets on deep alluvial or neocutanic soils (Dundee and Oakleaf forms). Leadwood (<i>Combretum imberbe</i>) trees are also often associated with the Oakleaf form on foothslopes, and, • The Foothslope Thickets/Tall Closed Woodlands on Foothslopes/Pans – Mopane (<i>Colophospermum mopane</i>) low thickets/tall closed woodlands on pedocutanic sandy clays (Valsrivier and Klapmuts forms). • Mitigation: None of the proposed sites fall into this zone, however certain sections of Sites 2; 3; 4; 6 and Alternative A border on soil forms/types close to this sensitive zone. The centre peg of each of these sites falls outside the sensitive soil area, however the following limitations must be considered: <ul style="list-style-type: none"> • Site 2: The development footprint must be sited east of the centre peg. • Site 3: The development footprint must be sited west of the centre peg. • Site 4: The development footprint must be sited south of the centre peg. • Site 6: The development footprint must be sited north of the centre peg. • Alternative A: The development footprint must be sited east of the centre peg. 2. Intermediate Zone: Two vegetation communities are lumped into this unit: <ul style="list-style-type: none"> • Mixed Thorn Tree/Broad-leaved Communities found on crests and midslopes of the Shallow Soils on the crests and midslopes - Knob Thorn (<i>Acacia nigrescens</i>) – Red Bush Willow (<i>Combretum apiculatum</i>) communities on lithocutanic loamy sandy to sandy clay loams via pebble-bed (Glenrosa form), and • The Broad-leaved Communities of the Deep Red Soils on the crests and foothslopes - Purple-pod Terminalia (<i>Terminalia prunioides</i>) short thickets on red apedal clay loam soils of the midslopes and crests (Hutton form). • Mitigation: Site 1 borders this zone. Site 1 is found on a midslope with a stable rocky substrate (Glenrosa Soil Form). No soil limitations were identified for this development node. 3. Development Zone: This includes one vegetation community: <ul style="list-style-type: none"> • The Broad-leaved Communities of the Shallow Soils on the crests and midslopes – Red Bushwillow (<i>Combretum apiculatum</i>)/Mopane (<i>Colophospermum mopane</i>) short/low thickets on lithocutanic sandy to sandy

	<p>loams via pebble-bed (Glenrosa and Cartref forms).</p> <ul style="list-style-type: none"> • Mitigation: The majority of the proposed sites fall within this zonation and or large sections of each site are found within its boundaries. Sites 1; 5; and Alternative B can be constructed in all wind directions around the centre peg. • Sites 2, 3, 4, 6 and Alternative A must follow the recommendation listed above to ensure that they remain well within the confines of the development zone. • Mitigation General: Refer to the Rietvley Management Map. • The management zone least suited for development includes duplex soils of the footslopes/pans and on deeper neocutanic/alluvial soils of the footslopes and riverbanks. • Most of the midslopes and crest areas of the southern parts of Rietvley can therefore be safely developed, as these are ecologically the least sensitive within the Rietvley area. • One exception is however relevant. Cartref soils included within the Development Zone are sensitive if the grey E-horizon is exposed to the soil surface during the rainy season. E.g. Site 3 could fall into this soil form if the developer sites the development footprint east of the centre peg.
<p>2. Special Plants.</p>	<ul style="list-style-type: none"> • See Appendix A for detail on the floral composition of the Rietvley property. • Background (Specialist Study: Lötter, 2005): All the proposed sites were intensively searched to produce a comprehensive list of flora identified on the proposed stands, and for the property as a whole. The main objective of the searches was the recording of species of conservation importance and the identification of sensitive areas on or near each plot. • A total of 5 species of conservation importance were identified on Rietvley. These species were distributed throughout most of the reserve and not confined to any particular areas. • No Red Data listed plants were found on Rietvley. Furthermore, four vegetation units were mapped and described. These units were assessed according to the perceived impact of the development on their distribution and abundance. • The Veld Type of Rietvley is transitional between the Mopane Bushveld and the neighbouring Sweet Lowveld Bushveld. Both these vegetation units are well protected within the Kruger National Park and are not under threat. • Lötter is of the opinion that the overall conservation value of the species composition is low, and that a higher value lies more in the cumulative contribution of the vegetation towards functioning habitat units, which offer aesthetic value and habitat for other fauna. • There are very few Red Data listed or Protected geophytes that occur in the lowveld savannah. • Vegetation Types: Even though the vegetation is relatively homogenous throughout, it is still possible to distinguish the occurrence of four plant communities. This low beta diversity does not make any of these

communities unique as they share many of their species with adjacent units. The habitat/vegetation communities can be divided into the following 4 units:

- **Knob Thorn/Red Bushwillow Community**: This community is characterized by the following trees: *Acacia nigrescens*, *Combretum apiculatum*, *Combretum hereroense*, *Dalbergia melanoxylon*, *Euclea divinorum*, *Euclea undulata*, *Grewia bicolor*, *Philenoptera violacea*, *Terminalia prunioides* and *Ziziphus mucronata*.
- **Red Bushwillow/Mopane Community**: This community is characterized by the following trees: *Acacia exuvialis*, *Acacia nigrescens*, *Bolusanthus speciosus*, *Cassia abbreviata*, *Colophospermum mopane*, *Combretum apiculatum*, *Commiphora africana*, *Commiphora mollis*, *Dalbergia melanoxylon*, *Euclea undulata*, *Grewia bicolor*, *Lannea stuhlmannii*, *Terminalia sericea*, *Peltophorum africanum* and *Ximenia americana*.
- **Mopane Community**: This community is characterized by the following trees: *Bolusanthus speciosus*, *Colophospermum mopane*, *Combretum imberbe*, *Euclea divinorum*, *Gymnosporia senegalensis*, *Manilkara mochisia*, *Philenoptera violacea*, *Pyrostria hystrix* and *Ziziphus mucronata*.
- **Tamboti/Riverine Community**. This riverine community is characterized by the following trees: *Capparis tomentosa*, *Combretum imberbe*, *Diospyros mespiliformis*, *Euclea divinorum*, *Flueggea virosa*, *Gardenia volkensii*, *Nuxia oppositifolia*, *Pappea capensis*, *Phyllanthus reticulatus*, *Schotia brachypetala*, *Spirostachys africana* and *Ziziphus mucronata*.
- The cumulative impacts of the housing units on the natural vegetation are expected to be **low to medium**.
- **No particular plants of conservation importance were identified that require particular conservation action.** Therefore it is recommended that there is no need for any particular plants to be relocated or removed prior to any development that may occur on site.
- Efforts should be invested into landscaping the units to avoid the introduction of alien plant species. An indirect impact of the housing development will be the introduction and spreading of alien plant species into the natural environment. Care should therefore be taken to ensure the regular control of invasive species within disturbed areas. Particular mention needs to be made of the 3 prickly pear species recorded to the east of the old homestead on the summit of the hill. These species were *Opuntia humifusa*, *Opuntia imbricata* and *Opuntia stricta*. Effort should be invested into removing these plants.
- **Mitigation**: An evaluation of the proposed 8 holiday home sites agrees with the findings of Lötter (2005) however a number of site specific mitigation measures are required.
- **Holiday Home Placement**: It is recommended that the ECO is commissioned **prior** to final architectural drawings being submitted to ensure that the presence of the **3 Protected Tree Species** (Leadwood, Appleleaf and Marula) are indicated on the site development plan for each unit. We must emphasize that these species occur in low densities and one is talking of 3 to 4 plants per site.
- We are of the opinion that all holiday home units can be sited around these species as they contribute to the

	<p>aesthetics and ambience of each site.</p> <ul style="list-style-type: none"> • Should this approach not be possible/practical it is recommended that an attempt be made to relocate these trees. Finally, when all else fails these trees should be permitted by the Department of Agriculture, Forestry and Fisheries (DAFF) for removal with the proviso that they are used commercially by local community carpenters (marula and leadwood). This approach would thus translate into a small commercial enterprise for local job seekers. • It is also customary to replace all protected tree species (which are removed) with individual plants from an indigenous nursery on a one by one basis. • Tamboti Trees (Site 3) although not protected are considered special in terms of inherent characteristics of attracting birds and reptiles, notwithstanding the fact that it produces a special wood. This species should be protected at Site 3. • The unique ecosystem that has been established at Site 5 by the termitarium and the brown ivory requires special mention. This represents a unique habitat type which must be demarcated for protection during the development process.
<p>3. Habitat and Fauna.</p>	<ul style="list-style-type: none"> • See Appendix B for detail on the fauna and associated habitat at Rietvley. • Background (Specialist Study: Deacon, 2005): The area of proposed development was initially assessed taking into account all the main faunal assemblages (except invertebrates). • From the onset it was decided that the slow-moving and microhabitat-bound faunal species would be the main group that might be affected by the development. • The study thus concentrated on the reptile species and their associated habitat in the area of proposed development. No other faunal group was envisaged to be seriously affected by the proposed activities. • A survey was conducted in the area of the proposed development to assess the habitat potential for reptiles in the area, to identify special reptile habitats of conservation importance, and to establish the possible influence that the proposed development can have on these habitats and threatened reptile species. • In order to determine small-scale habitat patches (aspects of habitat e.g. rocks, logs, loose bark, holes, etc) and their spatial arrangement, the selected biotopes (crest, mid-slope, flood plain, riparian zone and valley bottom) were surveyed for these aspects. • Transects in different habitats were surveyed, incorporating systematic searches for reptiles. By making use of the faunal habitat grouping, a fairly accurate synopsis can be compiled regarding the habitat preferences of the expected animal species in the area. • It was found that 68 reptile species have distribution ranges that coincide with the proposed development area of Rietvley .The most diverse area regarding reptile diversity, is the crest biotope (26.4%). The floodplain biotope with its mosaic of associated habitats accommodates 23.5% of the reptiles expected in the area, while the mid-slope and riparian biotopes both represent 10.5% of the reptile species. Due to its flooding potential and thus somewhat

temporary habitats, the riverbed has the least potential to accommodate reptile species (8.8%).

- The most important aspects of habitat are found to be: **rocky outcrops with associated crevices** as shelter (13.4%); subsurface habitat created by the **undersides of rocks, boulders and stones** (12.5%); the different aspects (**bark, roots and branches**) of trees (12.1%); **disused termitaria** (11.2%); **dead and fallen tree trunks**, either hollow, rotten or solid (11.2%); decaying **surface litter** or leaves (8.9%).
- The African rock python (*Python sebae natalensis*) is the only Red Data reptile species expected to be found in the area (classified as “Vulnerable”). Although the probability that it may occur in the proposed project area is recognized, this is not its preferred habitat due to the absence of permanent water.
- **Mitigation (Deacon, 2005):** To mitigate for disturbances and adverse effects of the proposed development on the reptiles, the following preventative steps are proposed:
 - No large tree should be removed in any of the phases of development.
 - Avoid incorporating large boulders or rocky outcrops of the area into the building structure of the units.
 - Do not destroy termite mounds.
 - Do not utilize the loamy soil on the floodplains along the drainage line, keep roads away from these habitats.
 - Do not remove dead wood from the area, and this rule should be incorporated in the future management when residents want to collect firewood.
 - Refrain from damming the drainage line.
 - Do not fill floodplain pans with additional water (pumped).
 - No pets should be allowed on the developed property.
- Although the survey identified a diverse habitat for reptiles and also observed the richness of the reptile diversity in the proposed development area, **no threatened or sensitive habitats were identified.**
- Apart from the African rock python (low probability of occurrence in the area) no threatened reptile species will be at risk due to the proposed development.
- **It is also the author’s expert opinion that as no reptile species or any special habitat is seriously affected by the proposed development, no other local animal species will be threatened to the level that it might become extinct from the area.**
- **Mitigation:** Biodiversity conservation is dependent upon habitat conservation. Together with maintaining the integrity of ecological corridors ecologists are confident that species will survive if adequate components of these factors are allowed to continue functioning in all their facets and fluxes.
- **“Leave that Log” Principle:** The above mentioned is often achieved by implementing the “leave that log” principle. By implication we say that if we conserve and leave elements of habitat untouched, the various roleplayers will continue to function as normally as possible. Leaving a dead log in the veld, will allow insects, small vertebrates, reptiles, birds etc. to go about their business of survival and well being.

	<ul style="list-style-type: none"> • With reference to the proposed development sites we have indicated that all termitaria should be avoided during the construction process and remain untouched. • Access roads must follow the natural contours into and out of the property, keeping to the higher lying areas and crests. • The Access Route into Site 1 must be aligned away from the martial eagle nest. (Access should be from the east, behind the centre peg). • Finally, the removal of any vegetation not affected by the development should not be allowed. This approach will go a long way towards maintaining habitat integrity.
<p>5. Drainage Lines.</p>	<ul style="list-style-type: none"> • Sites 2; 4; 6 and Alternative A are close to small drainage lines. • Site 3 is close to a soil type which has experienced saturated conditions in the past. • Mitigation: Implement the proposed recommendations listed above. These are: • Site 2: The development footprint must be sited east of the centre peg. • Site 3: The development footprint must be sited west of the centre peg. • Site 4: The development footprint must be sited south of the centre peg. • Site 6: The development footprint must be sited north of the centre peg. • Alternative A: The development footprint must be sited east of the centre peg. • No Stream/Natural Drainage Line (where applicable) may be used for the cleaning of tools and equipment. This includes the washing of clothes and bathing.
<p>6. General.</p>	<ul style="list-style-type: none"> • A number of <i>ad hoc mitigation measures</i> are submitted for inclusion into the EMP:Construction as these have bearing on the conservation of the biodiversity at Rietvley: • Noise: Noise impacts will emerge during the construction phase of the project. The magnitude of this impact will only be fully understood when the final construction protocol is made known. In terms of the impact on biodiversity the noise from the equipment and vehicles may affect birds breeding in nearby trees/pans etc. • Mitigation: As long as the access route alignments remain on the existing road servitudes the impact upon bird life should be low. • Top Soil: Slopes are gentle to moderate and provided soils are re-instated as soon as possible after trenches/foundations are completed, the effects of erosion and wash-aways will be limited. Top soil protection will be key to ensuring that the scarred area rejuvenates and recovers quickly. • Mitigation: Top soil must not be compacted, nor should any object be stored or stockpiled upon it. • The Contractor must backfill according to the requirements of progressive reinstatement, i.e. the reinstatement of disturbed areas to the topsoil profile must continue on an ongoing basis, immediately after selected construction activities are completed, which will allow for passive rehabilitation.

- Excess **topsoil** must be spread evenly over the area in a manner that blends in with the natural topography.
- Ensure that all construction activities/trenching activities allow for the natural dispersion of run-off water gradually channelling water away from the sites into the natural vegetation.
- **Invasive Plants:** Alien plants observed during the study are listed as follows: *Solanum mauritianum*; *Lantana camara*; *Xanthium strumarium*; *Parthenium hysterophorus* and *Opuntia species*. The impact that invasive plants may have on a project of this nature can emerge during the development phase.
- **Mitigation:**
- During the development process new areas are opened up by the contractors which allow for the dispersal of seeds and fruit into “invasive” free areas. This aspect will have to be addressed during the compilation of the Environmental Management Programme (EMP).
- Contractors must be made aware of the potential spread of aliens (seeds in muddy tyres, use of fire wood from nearby plantations etc.) and these aspects must be highlighted in the EMP.
- Control of alien invasive species will be undertaken on the development footprint in line with the requirements of the Conservation of Agricultural Resources Act. The ECO will identify plants (where applicable) which require removal and management.
- Alien invasive plant material will be preferentially removed in entirety through mechanical means (e.g. chainsaw, hand-pulling of smaller specimens).
- Chemical control is only required as a last resort or as a support mechanism to control coppicing and sprouting.
- All invader/exotic plants must be identified and earmarked for removal. The ECO will assist with identifications (where applicable).
- A number of workers must be used to remove the vegetation i.e. 4/6 workers. ECO to monitor the removal programme.
- If during the establishment period, any noxious or excessive weed growth occurs, such vegetation will be removed by the contractor.
- **Waste Management:** The construction process (contractor’s sites; trenching and installation of services; foundations etc.) will bring along aspects of waste management and litter control. The impact on biodiversity must be managed to ensure habitat protection and species conservation. To ensure this the following is noteworthy:
- **Mitigation:** No refuelling of equipment and vehicles are allowed near or close to any drainage line.
- All waste to be disposed of off-site at the Ndlopfu Recycling and Separation Facility. The Ndlopfu Game Reserve is well known for its waste management- and recycling programme.
- Contractor not to dispose of any waste and/or construction debris through burning or by burying.
- Contractor to supply tamper proof waste bins throughout the site at locations where construction workers are working. Tamper proof refuse bins to be emptied on a daily basis.

- Refuse bins not to be used for any other purpose. Contractor has to designate specific areas for staff to enjoy their lunches and tea and he must provide for access to adequate refuse bins at these sites.
- All litter must be removed off site daily and deposited at the designated waste collection point near the Maintenance Yard (Ndlopfu Offices).
- Waste includes cigarette boxes, cigarette butts, paper, plastic bags, tin, glass, wires, cable ties, and organic waste e.g. peels and bones. **Under no circumstances will cigarette butts be discarded anywhere on the development site.** The developments are located in a sensitive, nature area and bush fires can spread for kilometres devastating wildlife during untimely fires.



Many Holiday Home Sites are subjected to Elephant Impact. Once the footprint has been demarcated it is recommended that large trees be protected with an Electric Wire to ensure that Shade Trees/Holiday Home are saved

8. RECOMMENDATIONS, ACTIONS AND CONCLUSIONS:

8.1. Development Sites: Suitability for Development, Habitat Affected and Mitigation Options:

Project Statement: All 8 proposed holiday home sites can be developed provided the following recommendations and measures of mitigation are implemented.

Recommendations: To reduce environmental impact the following recommendations are listed for implementation:

- **ECO:** The Environmental Control Officer (ECO) must mark and demarcate all protected tree species, termitaria and drainage lines **prior** to architectural drawings being completed. These sites will then be classified as **no-go areas**.
- **Site 1:** At Site 1 the road access route to the site must be aligned away from the martial eagle nest. (Access should be from the east, behind the centre peg).
- **Boundary Limitations:** The development footprint at certain sites is defined as follows:
 - Site 2: The development footprint must be sited **east** of the centre peg.
 - Site 3: The development footprint must be sited **west** of the centre peg.
 - Site 4: The development footprint must be sited **south** of the centre peg.
 - Site 6: The development footprint must be sited **north** of the centre peg.
 - Alternative A: The development footprint must be sited **east** of the centre peg.
- limited
- **General Limitations:** The management zone least suited for development includes duplex soils of the footslopes/pans and on deeper neocutanic/alluvial soils of the footslopes and riverbanks.
- Most of the midslopes and crest areas of the southern parts of Rietvley can therefore be safely developed, as these are ecologically the least sensitive within the Rietvley area.
- One exception is however relevant. Cartref soils included within the Development Zone are sensitive if the grey E-horizon is exposed to the soil surface during the rainy season. E.g. Site 3 could fall into this soil form if the developer sites the development footprint **east** of the centre peg.
- **Special Habitat:** No development may take place on a termitarium and or within the flood zone of any drainage line.
- **Invader-Alien Plants:** All invader species must be controlled and removed off site under the guidance of the ECO.
- **Holiday Home Placement:** It is recommended that the ECO is commissioned **prior** to final architectural drawings being submitted to ensure that the presence of the **3 Protected Tree Species** (Leadwood, Appleleaf and Marula) are indicated on the site development plan for each unit. We must emphasize that these species occur in low densities and one is talking of 3 to 4 plants per site.
- We are of the opinion that all holiday home units can be sited around these species as they contribute to the aesthetics and ambience of each site.
- Should this approach not be possible/practical it is recommended that an attempt be made to relocate these trees. Finally, when all else fails these trees should be permitted by the Department of Agriculture, Forestry and Fisheries (DAFF) for removal with the proviso that they are used commercially by local community carpenters (marula and leadwood). This approach would thus translate into a small commercial enterprise for local job seekers.

- It is also customary to replace all protected tree species (which are removed) with individual plants from an indigenous nursery on a one by one basis.
- Tamboti Trees (Site 3) although not protected are considered special in terms of inherent characteristics of attracting birds and reptiles, notwithstanding the fact that it produces a special wood. This species should be protected at Site 3.
- The unique ecosystem that has been established at Site 5 by the termitarium and the brown ivory requires special mention. This represents a unique habitat type which must be demarcated for protection during the development process.
- **“Leave that Log” Principle:** Implement the “leave that log” principle. By implication we say that if we conserve and leave elements of habitat untouched, the various roleplayers will continue to function as normally as possible. Leaving a dead log in the veld, will allow insects, small vertebrates, reptiles, birds etc. to go about their business of survival and well being.
- Access roads must follow the natural contours into and out of the property, keeping to the higher lying areas and crests.
- The removal of any vegetation **not affected by the development** should not be allowed. This approach will go a long way towards maintaining habitat integrity.
- **Top Soil:** Top soil must not be compacted, nor should any object be stored or stockpiled upon it.
- The Contractor must backfill according to the requirements of progressive reinstatement, i.e. the reinstatement of disturbed areas to the top soil profile must continue on an ongoing basis, immediately after selected construction activities are completed, which will allow for passive rehabilitation.
- Excess **top soil** must be spread evenly over the area in a manner that blends in with the natural topography.
- Ensure that all construction activities/trenching activities allow for the natural dispersion of run-off water gradually channelling water away from the sites into the natural vegetation.
- **Waste Management:** No refuelling of equipment and vehicles are allowed near or close to any drainage line.
- All waste to be disposed of off-site at the Ndlopfu Recycling and Separation Facility. The Ndlopfu Game Reserve is well known for its waste management- and recycling programme.
- Contractor not to dispose of any waste and/or construction debris through burning or by burying.
- Contractor to supply tamper proof waste bins throughout the site at locations where construction workers are working. Tamper proof refuse bins to be emptied on a daily basis.
- Refuse bins not to be used for any other purpose. Contractor has to designate specific areas for staff to enjoy their lunches and tea and he must provide for access to adequate refuse bins at these sites.
- All litter must be removed off site daily and deposited at the designated waste collection point near the Maintenance Yard (Ndlopfu Offices).
- Waste includes cigarette boxes, cigarette butts, paper, plastic bags, tin, glass, wires, cable ties, and organic waste e.g. peels and bones. **Under no circumstances will cigarette butts be discarded anywhere on the development site.** The developments are located in a sensitive, nature area and bush fires can spread for kilometres devastating wildlife during untimely fires.

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