

**DRAFT BASIC ASSESSMENT  
OF THE DAMAGED AREA  
ON THE FARM KRANS KLOOF, PADDOCK  
AS REQUIRED FOR THE  
NEMA SECTION 24 G APPLICATION**

Johan Bodenstein  
PrSciNat



MAY 2019

# Basic Assessment Report



**edtea**

**Department :**

Economic Development, Tourism and  
Environmental Affairs

**PROVINCE OF KWAZULU-NATAL**

(For official use only)

EIA File Reference Number:

DC21/S24G/0002/2015

NEAS Reference Number:

KZN/EIA/

Waste Management Licence Number:  
(if applicable)

Date Received:

## BASIC ASSESSMENT REPORT

**Submitted in terms of the Environmental Impact Assessment Regulations, 2010 promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)**

**This template may be used for the following applications:**

- **Environmental Authorization** subject to basic assessment for an activity that is listed in Listing Notices 1 or 3, 2010 (Government Notices No. R 544 or No. R 546 dated 18 June 2010); or
- **Waste Management Licence** for an activity that is listed in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) for which a basic assessment process as stipulated in the EIA Regulations must be conducted as part of the application (refer to the schedule of waste management activities in Category A of Government Notice No. 718 dated 03 July 2009).

### Kindly note that:

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Economic Development, Tourism & Environmental Affairs. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
9. The KZN Department of Economic Development, Tourism & Environmental Affairs may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Economic Development, Tourism & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

*"Leading the attainment of inclusive growth for job creation and economic sustenance"*

## DEPARTMENTAL REFERENCE NUMBER(S)

File reference number (EIA):	DC21/S24G/0002/2015
File reference number (Waste Management Licence):	

## SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

### 1. NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	<b>INDiflora cc Environmental Services</b>		
Physical address:	<b>25 Helston Road, Manor Gardens</b>		
Postal address:	<b>Postnet 9, Private Bag X04 Dalbridge</b>		
Postal code:	<b>4014</b>	<b>Cell:</b>	<b>Johan 082 577 0898</b>
Telephone:	<b>031 261 1265</b>	<b>Fax:</b>	<b>0867592840</b>
E-mail:	<a href="mailto:joan@indiflora.co.za">joan@indiflora.co.za</a>		

### 2. NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
<b>Johan Bodenstein</b>	<b>ND Horticulture, ND Nature Conservation, B Tech Nature Conservation</b>	<b>IAIAsaKZN SACNASP GSSA</b>	<b>17yrs</b>
<b>Ronel Niemann</b>	<b>BSc (Hons) Environment Rehabilitation</b>	<b>IAIAsa</b>	<b>5 Years</b>

### 3. NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/ s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
<b>Adam Teixeira-Leite Eco-pulse</b>	<b>BSc</b>	<b>Wetland Specialist</b>	<b>Wetland delineation and Functional</b>	<b>Paddock farm: Draft Freshwater Wetland and</b>

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<b>Environment Consulting Services</b>			<b>Assessment</b>	<b>Aquatic Habitat Assessment Report</b>
<b>GJ McDonald</b>		<b>Botanical Specialist</b>	<b>Specialist Botanical Report</b>	<b>SUPPORTING DOCUMENTATION FOR 24G APPLICATION IN RESPECT OF THE FARM "ROUNABOUT" SUB A OF SUB D PADDOCK AND KRANS KLOOF 8100, EZINQOLENI LOCAL MUNICIPALITY, KWAZULU-NATAL</b>
<b>Rowena Harrison</b>	<b>MSc Soil Science</b>	<b>Agricultural Specialist</b>	<b>Agricultural Assessment</b>	<b>AGRICULTURAL POTENTIAL ASSESSMENT PROPOSED ESTABLISHMENT OF MACADAMIA TREE ORCHARDS ON THE FARM ROUNABOUT SUB A OF SUB D PADDOCK AND KRANKLOOF 8100, EZINQOLENI LOCAL MUNICIPALITY, KWAZULU-NATAL</b>

## SECTION B: ACTIVITY INFORMATION

### 1. PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

**THE PROPOSED THREE MACADAMIA NUT ORCHARDS ON PONDOLAND-UGU  
MSIKABA SANDSTONE SOURVELD  
ON  
FARM: SUB A OF SUB D OF ROUNDABOUT 15633,  
SUB A OF KRANS KLOOF**

### 2. PROJECT DESCRIPTION

Provide a detailed description of the project:

The applicant commenced to cultivate 16,2 Ha of the land for agricultural production of macadamia nuts in an area, unbeknown to him, to be under Pondoland-Ugu Msikaba Sandstone Sourveld ecosystem. The Krans Kloof Farm proposal was to develop six Macadamia Plantations is in line with the zoning of the land and the IDP of the Ezingoleni Municipality. 6 Macadamia nut trees plantations will be planted 9m x 4m apart in parallel rows. Windbreaks will be planted using local wind resistant trees.

Three areas were cleared for Macadamia nut tree plantations:

Orchard 2A – 5,8 Ha

Orchard 4 – 10 Ha

Orchard 3 – 0,5 Ha

### 3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June 2010), Listing Notice 3 (GNR 546, 18 June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

<p><b>GN R985</b> 8 December 2014</p>	<p><b>Activity 12</b> 12. The clearance of an area of 300m<sup>2</sup> or more of indigenous vegetation</p>	<p>Farming activities exceeding 300m<sup>2</sup> took place on land covered by the critically endangered Pondoland-Ugu Msikaba Sandstone Sourveld ecosystem listed in terms of section 52 of the NEMBA KZN (a) iv. as identified as critically endangered in the National Spatial Assessment 2004;</p>
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### 4. FEASIBLE AND REASONABLE ALTERNATIVES

“*alternatives*”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;

- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Sections B 5 – 15 below should be completed for each alternative.

### 5. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. List alternative sites were applicable.

Alternative:	Latitude (S):			Longitude (E):		
	30°	47'	28.00"	30°	16'	33.46"
Alternative S1 <sup>1</sup> (preferred or only site alternative)						
Alternative S2 (if any)	0	€	"	0	€	"
Alternative S3 (if any)	0	€	"	0	€	"

#### In the case of linear activities:

Alternative:	Latitude (S):			Longitude (E):		
	30°	47'	28.00"	30°	16'	33.46"
Alternative S1 (preferred or only route alternative)						
<ul style="list-style-type: none"> <li>• Starting point of the activity</li> <li>• Middle point of the activity</li> <li>• End point of the activity</li> </ul>	0	€	"	0	€	"
Alternative S2 (if any)	0	€	"	0	€	"
<ul style="list-style-type: none"> <li>• Starting point of the activity</li> <li>• Middle point of the activity</li> <li>• End point of the activity</li> </ul>	0	€	"	0	€	"
Alternative S3 (if any)	0	€	"	0	€	"
<ul style="list-style-type: none"> <li>• Starting point of the activity</li> <li>• Middle point of the activity</li> <li>• End point of the activity</li> </ul>	0	€	"	0	€	"

<sup>1</sup> "Alternative S.." refer to site alternatives.

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For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 500m along the route for each alternative alignment.

### 6. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

**Alternative:**

Alternative A1<sup>2</sup> (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Size of the activity:**

16,2 Ha on 131.912 Ha
m <sup>2</sup>
m <sup>2</sup>

**Length of the activity:**

m
m
m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Size of the site/servitude:**

m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

### 7. SITE ACCESS

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

YES	
	m

**The access road in the case is an existing gravel road (±300m) off the existing provincial district gravel road D178.**

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

### 8. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this report.

The site or route plans must indicate the following:

- 8.1. the scale of the plan which must be at least a scale of 1:500;
- 8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site;
- 8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites;

<sup>2</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

- 8.4. the exact position of each element of the application as well as any other structures on the site;
- 8.5. the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 8.6. walls and fencing including details of the height and construction material;
- 8.7. servitudes indicating the purpose of the servitude;
- 8.8. sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers, streams, drainage lines or wetlands;
  - the 1:100 year flood line (where available or where it is required by DWA);
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);
- 8.9. for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 8.10. the positions from where photographs of the site were taken.

## 9. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

## 10. FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as Appendix C. The illustrations must be to scale and must represent a realistic image of the planned activity/ies.

## 11. ACTIVITY MOTIVATION

### 11.1. Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R2,5 mil
What is the expected yearly income that will be generated by or as a result of the activity?	R 125 000
Will the activity contribute to service infrastructure?	NO
Is the activity a public amenity?	NO
How many new employment opportunities will be created in the development phase of the activity?	2
What is the expected value of the employment opportunities during the development phase?	R 70 000
What percentage of this will accrue to previously disadvantaged individuals?	100%
How many permanent new employment opportunities will be created during the operational phase of the activity?	2



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What is the expected current value of the employment opportunities during the first 10 years?

**R700 000**

What percentage of this will accrue to previously disadvantaged individuals?

**100%**

### 11.2. Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

The farm is zoned agriculture and is located in an agricultural, rural environment. The South Coast area around Paddock is developing as an important macadamia nut producing area in South Africa. The land owner purchased the land with the intention to farm the land. Agriculture is the main economic driver of the local municipality with sugar cane and macadamia nuts being key elements. The planned Macadamia Nut farm operation aims to contribute to the nut production demand of the world. There is a growing demand for the fresh nuts world wide as people need to have access to the nutritional value of macadamia nuts. The production of nuts contributes to the employment of local unemployed people.

Indicate any benefits that the activity will have for society in general:

**The products of the farm, employment opportunity and local economy spend**

Indicate any benefits that the activity will have for the local communities where the activity will be located:

**Temporary employment during the planting and harvesting seasons**

## 12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are relevant to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:

Administering authority:

Date:

The Constitution (as amended)	Act 108 of 1996	
National Environmental Management Act (NEMA) & The National Environmental Management Amendment Act	Department of Agriculture and Environmental Affairs	Act 107 of 1998 & Act 8 of 2004
National Environmental Management: Biodiversity Act (NEMBA)	eZemvelo KZN Wildlife	Act 10 of 2004
National Environmental Management: Air Quality Act	Directorate: Air Quality Management (DEAT)	Act 39 of 2004
Environmental Conservation Act (ECA)	Department of Agriculture and Environmental Affairs	Act 73 of 1989
Natal Nature Conservation Ordinance	eZemvelo KZN Wildlife	Act 15 of 1974
National Water Act (NWA)	Department of Water Affairs and Forestry	Act 36 of 1998
Subdivision of Agricultural Land Act (70 of 70)	National Department of Agriculture	Act 70 of 1970
Conservation of Agricultural Resources Act (CARA)	Department of Water Affairs and Forestry	Act 43 of 1983
Agricultural Products Standards Act (APS)	National Department of Agriculture	Act 119 of 1990
National Forests Act	Department of Water Affairs and Forestry	Act 84 of 1998
National Heritage Resources Act	South African Heritage Resources Agency	Act 25 of 1999
KwaZulu Natal Heritage Act	AMAFA aKwaZulu Natali	Act 10 of 1997
Restitution of Land Rights Act	Regional Land Claims Commission	Act 22 of 1994
Removal of Restrictions Act	Department of Traditional and Local Government Affairs	Act 84 of 1967
Atmospheric Pollution Prevention Act	Department of Environmental Affairs and Tourism and Department of Trade and Industry	Act 45 of 1965
Labour Relations Act	Department of Labour	Act 66 of 1995
Basic Conditions of Employment Act	Department of Labour	Act 75 of 1997
Occupational Health and Safety Act	Department of Labour	Act 85 of 1993
Hazardous Substances Act	Department of Health, Welfare	Act 15 of 1973

	<b>and Pensions</b>	
<b>Town Planning Ordinance</b>	<b>Department of Traditional and Local Government Affairs</b>	<b>Ordinance 27 of 1949</b>

### 13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

#### 13.1. Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	
-----	--

If yes, what estimated quantity will be produced per month?

3 m <sup>3</sup>	
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How will the construction solid waste be disposed of? (describe)

**The solid waste from the orchard planting will be stored on site in stock piles then loaded into a truck and taken to a registered landfill in accordance with the requirements of the Environmental Management Plan for the Construction phase (CEMP)**

Where will the construction solid waste be disposed of? (provide details of landfill site)

**Ugu Municipal landfill**

Will the activity produce solid waste during its operational phase?

YES	
-----	--

If yes, what estimated quantity will be produced per month?

8 m <sup>3</sup>	
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How will the solid waste be disposed of? (provide details of landfill site)

**The solid waste generated by the macadamia nut farm activity is primarily nut shells which will be bagged and sold to nurserymen/landscapers to use in landscaping as mulch. An ordinary amount of domestic solid waste will be sorted for recycling and organic matter will be decomposed and used as compost on the farm.**

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

**The solid waste (nut shells) can be decomposed and re-used as compost on the farm or be sold as mulch.**

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine the further requirements of the application.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

	NO
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**If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

Is the activity that is being applied for a solid waste handling or treatment facility?

	NO
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**If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

#### 13.2. Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

	NO
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If yes, what estimated quantity will be produced per month?

m <sup>3</sup>	
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Will the activity produce any effluent that will be treated and/or disposed of on site?

	NO
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**If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

Will the activity produce effluent that will be treated and/or disposed of at

	NO
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another facility?

If yes, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

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### 13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere?  NO

If yes, is it controlled by any legislation of any sphere of government?  NO

**If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

If no, describe the emissions in terms of type and concentration:

<b>Macadamia nuts do emit emissions</b>
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### 13.4. Generation of noise

Will the activity generate noise?  NO

If yes, is it controlled by any legislation of any sphere of government?  NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

<b>Macadamia nuts do not generate noise</b>
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## 14. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

municipal	water board	Groundwater <b>X</b>	river, stream, <b>X</b> dam or lake	other	the activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

1100 kilo litres
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Does the activity require a water use permit from the Department of Water Affairs?  YES

If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

## 15. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

**Indigenous forest wind screening will be planted**

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

## SECTION C: SITE/ AREA/ PROPERTY DESCRIPTION

### Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.   
(e.g. A):

- Subsections 1 - 6 below must be completed for each alternative.

### 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

#### Alternative S1:

Flat	1:50 1:20	-	1:20 1:15	-	1:15 – 1:10	1:10 1:7,5	-	1:7,5 – 1:5	Steeper than 1:5
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#### Alternative S2 (if any):

Flat	1:50 1:20	-	1:20 1:15	-	1:15 – 1:10	1:10 1:7,5	-	1:7,5 – 1:5	Steeper than 1:5
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#### Alternative S3 (if any):

Flat	1:50 1:20	-	1:20 1:15	-	1:15 – 1:10	1:10 1:7,5	-	1:7,5 – 1:5	Steeper than 1:5
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### 2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (Please cross the appropriate box).

#### Alternative S1 (preferred site):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley X	Plain	Undulating plain/low hills X	Dune	Sea-front
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#### Alternative S2 (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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#### Alternative S3 (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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### 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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Has a specialist been consulted for the completion of this section? NO

If YES, please complete the following:

Name of the specialist:

Qualification(s) of the specialist:

Postal address:

Postal code:

Telephone:  Cell:

E-mail:  Fax:

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites? YES NO

If YES, specify and explain:

Are there any special or sensitive habitats or other natural features present on any of the alternative sites? YES NO

If YES, specify and explain:

Are any further specialist studies recommended by the specialist? YES NO

If YES, specify:

If YES, is such a report(s) attached in Appendix D? YES NO

Signature of specialist: \_\_\_\_\_ Date:

Is the site(s) located on any of the following (cross the appropriate boxes)?

	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):
Shallow water table (less than 1.5m deep)	<b>YES</b>	YES NO	YES NO
Dolomite, sinkhole or doline areas	<b>NO</b>	YES NO	YES NO
Seasonally wet soils (often close to water bodies)	<b>YES</b>	YES NO	YES NO
Unstable rocky slopes or steep slopes with loose soil	<b>YES</b>	YES NO	YES NO
Dispersive soils (soils that dissolve in water)	<b>NO</b>	YES NO	YES NO
Soils with high clay content (clay fraction more than 40%)	<b>NO</b>	YES NO	YES NO
Any other unstable soil or geological feature	<b>NO</b>	YES NO	YES NO
An area sensitive to erosion	<b>NO</b>	YES NO	YES NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

#### 4. GROUND COVER

Has a specialist been consulted for the completion of this section?	<b>YES</b>	
If YES, please complete the following:		
Name of the specialist:	<b>Gavin McDonald</b>	
Qualification(s) of the specialist:		
Postal address:		
Postal code:	<b>4058</b>	
Telephone:	<b>031 907 7623</b>	Cell: <b>082 200 9549</b>
E-mail:	<b>gavin@mut.ac.za</b>	Fax:
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?	<b>YES</b>	
If YES, specify and explain:		
Are there any special or sensitive habitats or other natural features present on any of the alternative sites?	<b>YES</b>	
If YES, specify and explain:	<b>Pondoland-Ugu Msikaba Sandstone Sourveld</b>	
Are any further specialist studies recommended by the specialist?	<b>YES</b>	
If YES, specify:	<b>Detail vegetation assessment</b>	
If YES, is such a report(s) attached in <u>Appendix D</u> ?	<b>YES</b>	

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup> <b>X</b>	Natural veld with scattered aliens <sup>E</sup> <b>X</b>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	Cultivated land <b>X</b>	Paved surface	Building or other structure <b>X</b>	Bare soil <b>X</b>

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

#### 5. LAND USE CHARACTER OF SURROUNDING AREA

Cross the land uses and/or prominent features that currently occur within a 500m radius of the site and give a description of how this influences the application or may be impacted upon by the application:

Land use character			Description
Natural area	YES		
Low density residential		NO	
Medium density residential		NO	
High density residential		NO	
Informal residential		NO	
Retail commercial & warehousing		NO	

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Light industrial		NO	
Medium industrial		NO	
Heavy industrial		NO	
Power station		NO	
Office/consulting room		NO	
Military or police base/station/compound		NO	
Spoil heap or slimes dam		NO	
Quarry, sand or borrow pit		NO	
Dam or reservoir		NO	
Hospital/medical centre		NO	
School/ creche		NO	
Tertiary education facility		NO	
Church		NO	
Old age home		NO	
Sewage treatment plant		NO	
Train station or shunting yard		NO	
Railway line		NO	
Major road (4 lanes or more)		NO	
Airport		NO	
Harbour		NO	
Sport facilities		NO	
Golf course		NO	
Polo fields		NO	
Filling station		NO	
Landfill or waste treatment site		NO	
Plantation	YES		
Agriculture	YES		
River, stream or wetland	YES		
Nature conservation area	YES		
Mountain, hill or ridge	YES		
Museum		NO	
Historical building		NO	
Protected Area	YES		
Graveyard		NO	
Archaeological site		NO	
Other land uses (describe)		NO	

### 6. CULTURAL/ HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or within 20m of the site?

<b>NO</b>
-----------

If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

Briefly explain the recommendations of the specialist:

--

Will any building or structure older than 60 years be affected in any way?

<b>NO</b>
-----------

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

	NO
--	----

If YES, please submit the necessary application to AMAFA and attach proof thereof to this report.

## SECTION D: PUBLIC PARTICIPATION

### 1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the local and district municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
  - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
  - (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;



- (ii) disability; or
- (iii) any other disadvantage.

## 2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
  - (i) that an application for environmental authorization has been submitted to the KZN Department of Economic Development, Tourism & Environmental Affairs in terms of the EIA Regulations, 2010;(ii)
  - (iii) a brief project description that includes the nature and location of the activity to which the application relates;
  - (iv) where further information on the application can be obtained; and
  - (iv) the manner in which and the person to whom representations in respect of the application may be made.

## 3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

See APPENDIX E

## 4. DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of subregulation 54(2) in the manner agreed by the KZN Department of Economic Development, Tourism & Environmental Affairs as appropriate for this application. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate.

Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

## 5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations (regulation 57 in the EIA Regulations, 2010) and be attached as Appendix E to this report.

## 6. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of this application and provided with an opportunity to comment.

Has any comment been received from the district municipality?  YES  NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

**Verbal and in person response was given that they do not have any comment**

Has any comment been received from the local municipality?  YES  NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

**Comments is attached in Appendix E**

Has any comment been received from a traditional authority?  YES  NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

## 7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?  YES  NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

**EKZN Wildlife provided comment on the desirability of plantations  
CREW provided comment on the sensitivity of the vegetation**

## SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

### 1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

<b>BIOPHYSICAL IMPACTS</b>
Loss of threatened habitat
Fragmentation of natural habitat
Reduction in species diversity
Soil exposure to the elements
Risk of soil erosion
Changed soil conditions
<b>SOCIO-ECONOMIC IMPACTS</b>
Increased employment
Higher yield
Stimulus for local economy
Commencement of a long term business venture
Vacant agricultural land put into production

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached as Appendix E to this report):

**See APPENDIX E**

### 2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

#### 2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

##### a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the planning and design phase:

##### Alternative S1 (preferred alternative) Macadamia nut farm

###### **Direct impacts:**

- *An inoperative farm will be economically operative*
- *Planning did not consider the environmental constraints*

###### **Indirect impacts:**

- *Sensitive habitat will be lost*

###### **Cumulative impacts:**

- *The valuable biodiversity will be lost*

##### Alternative S2 (if any) Cattle farm

###### **Direct impacts:**

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<ul style="list-style-type: none"> <li>• <i>An inoperative farm becomes economically active</i></li> </ul> <p><b>Indirect impacts:</b></p> <ul style="list-style-type: none"> <li>• <i>Sensitive habitat will be compromised</i></li> </ul> <p><b>Cumulative impacts:</b></p> <ul style="list-style-type: none"> <li>• <i>Valuable biodiversity will be lost</i></li> </ul>
---

**No-go alternative (compulsory)**

<p><b>Direct impacts:</b></p> <ul style="list-style-type: none"> <li>• <i>The farm will remain inactive</i></li> <li>• <i>Sensitive habitat will not be affected.</i></li> </ul> <p><b>Indirect impacts:</b></p> <ul style="list-style-type: none"> <li>• <i>The sensitive habitat will remain unaffected</i></li> </ul> <p><b>Cumulative impacts:</b></p> <ul style="list-style-type: none"> <li>• <i>The valuable biodiversity will not be lost.</i></li> </ul>
---

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1	Alternative S2
<b>Obtain Environmental authorisation first</b>	<b>Obtain environmental authorisation first</b>

### b. Process, technology, layout or other alternatives

List the impacts associated with any process, technology, layout or other alternatives that are likely to occur during the planning and design phase (please list impacts associated with each alternative separately):

**Alternative A1 (preferred alternative)**

<p><b>Direct impacts:</b></p>
<p><b>Indirect impacts:</b></p>
<p><b>Cumulative impacts:</b></p>

**Alternative A2 (if any)**

<p><b>Direct impacts:</b></p>
<p><b>Indirect impacts:</b></p>
<p><b>Cumulative impacts:</b></p>

**No-go alternative (compulsory)**

<p><b>Direct impacts:</b></p>
<p><b>Indirect impacts:</b></p>
<p><b>Cumulative impacts:</b></p>

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:	Alternative A2:

2.2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

2.2.1 THE PREFERRED ALTERNATIVE KRANS KLOOF FARM: ENVIRONMENTAL IMPACTS DURING Design Phase

Table 1: Environmental impacts during Design Phase: The Preferred Alternative - Macadamia Nut Orchards

Environmental Aspect	Summary of Implications and Mitigation		Assessment of Environmental Impacts				
	Potential Impacts	Mitigation	Significance before Mitigation	Geographic Spatial Scale	Duration	Mitigation & Certainty	Significance after Mitigation
<b>BIOPHYSICAL IMPACTS</b>							
Loss of threatened habitat	The desire to protect the remaining untransformed areas of this habitat becomes important	Declare the remainder of the farm untransformed natural habitat, not earmarked for macadamia nut plantations, as Private Conservation.	High (-)	Site	Permanent	Partial & definite	Medium (-)
Fragmentation of natural habitat	Reduces the ability of that habitat type to resist change	Maintain the remaining untransformed east-west corridors after setting land aside for future macadamia nut plantations and plant windbreaks using indigenous trees.	Low (-)	Site	Permanent	Partial and Definite	Low (-)
Reduction in species diversity	Reduces the habitats ability to adapt to climate change	Rescue sensitive, herbaceous, and bulbous species from cleared orchard footprints and transplant into remaining natural areas.	Low (-)	Site	Long-term	Full & Unsure	Low (+)
Soil exposure to the elements	The potential of the soil declines	<ul style="list-style-type: none"> <li>Plant the orchards on purposely made terraces to slow the sown-slope flow of water down.</li> <li>Plant a crop of sacrificial vegetative cover by seeding with a mixture of wild grass seed.</li> </ul>	Low (-)	Site	Short-term	Full & Definite	Low (+)
Risk of soil erosion	Valuable topsoil is lost	<ul style="list-style-type: none"> <li>Maintain current vegetative cover for as long as possible to minimize the expose to erosive forces.</li> <li>Apply temporary erosion control methodologies eg soil curtains, grass bales stacked along the contour etc.</li> </ul>	Low (-)	Site	Short-term	Full & Definite	Low (+)
Changed soil conditions	Decreased potential due to loss of source of organic matter, root material breaking the soil open to allow percolation etc	Maintain the natural ground cover for as long as possible. Plant alternative, indigenous, compatible groundcover to protect the soil to maintain the ecological goods and services.	Low (-)	Site	Short-term	Full & Definite	Low (+)
<b>SOCIO-ECONOMIC IMPACTS</b>							

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Environmental Aspect	Summary of Implications and Mitigation		Assessment of Environmental Impacts				
	Potential Impacts	Mitigation	Significance before Mitigation	Geographic Spatial Scale	Duration	Mitigation & Certainty	Significance after Mitigation
Increased employment	Reduced local poverty	Choose labour intensive methodologies where possible to employ maximum number of personnel.	Low (+)	Local	Long-term	Full & Probable	Low (+)
Higher yield	Increases the viability of the farm	Seek to plant alternative crops in an integrated way with Macadamia nuts to increase the potential yield off the land.	Low (+)	Site	Long-term	Full & Possible	No impact
Stimulus for local economy	Local businesses benefit from the money spent locally	Purchase set-up material from local suppliers.	Low (+)	Local	Short-term	Full & Possible	No impact
Commencement of a long term business venture	Creates new secondary and tertiary opportunities in the local economy	A long-term operation will require frequent inputs and if from local suppliers could stimulate a secondary or even a tertiary market/supply chain.	Medium (+)	Site	Long term	Full & Definite	Medium (+)
Vacant agricultural land put into production	Strengthens agricultural production in the area	Share successes and failures with the local fraternity so that all can learn from lessons learnt.	Medium (-)	Local	Long-term	Full & Definite	Medium (+)

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**2.2.2 FIRST ALTERNATIVE - POTENTIAL ENVIRONMENTAL IMPACTS DURING Design Phase: GRAZING CAMPS**

Table 2: Potential environmental impacts during **Design Phase**

Environmental Aspect	Summary of Implications and Mitigation		Assessment of Environmental Impacts				
	Potential Impacts	Mitigation	Significance before Mitigation	Geographic Spatial Scale	Duration	Mitigation & Certainty	Significance after Mitigation
<b>BIOPHYSICAL IMPACTS</b>							
Loss of threatened habitat	The desire to protect the remaining untransformed areas of this habitat becomes important	There will be no land to be set aside for conservation as the land is just marginally viable as a grazing farm if all of the land is used for grazing.	High (-)	Site	Permanent	Partial & definite	Very High (-)
Fragmentation of natural habitat	Reduces the ability of that habitat type to resist change	Maintain the untransformed vegetation by limiting the stock rate	Low (-)	Site	Permanent	Partial and Definite	Medium (-)
Reduction in species diversity	Reduces the habitats ability to adapt to climate change	Rescue sensitive, herbaceous, and bulbous species from orchard footprints and transplant into a holding area.	Low (-)	Site	Long-term	Full &Unsure	Medium (-)
Soil exposure to the elements	The potential of the soil declines	Ensure the animal stocking rate does not reach a point where the veld is trampled.	Low (-)	Site	Short-term	Full & Definite	Low (+)
Risk of soil erosion	Valuable topsoil is lost	<ul style="list-style-type: none"> <li>Maintain vegetative cover for as long as possible to minimize the expose to erosive forces.</li> <li>Apply temporary erosion control methodologies eg soil curtains, grass bales stacked along the contour etc</li> </ul>	Low (-)	Site	Short-term	Full & Definite	Low (+)
Changed soil conditions	Decreased potential due to loss of source of organic matter, root material breaking the soil open to allow percolation etc	Maintain the natural ground cover for as long as possible. Plant alternative, indigenous, compatible groundcover to protect the soil to maintain the ecological goods and services.	Low (-)	Site	Short-term	Full & Definite	Low (+)
<b>SOCIO-ECONOMIC IMPACTS</b>							
Increased employment	Reduced local poverty	Choose labour intensive methodologies where possible to employ maximum number of personnel	Low (+)	Local	Long-term	Full & Probable	Low (+)
Higher yield	Increases the viability of the farm	Plant some camps as planted pasture to increase the carrying capacity	Low (+)	Site	Long-term	Full & Possible	Medium (+)
Stimulus for local economy	Local businesses benefit from the money spent locally	Purchase set-up material from local suppliers.	Low (+)	Local	Short-term	Full & Possible	Low (+)

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Environmental Aspect	Summary of Implications and Mitigation		Assessment of Environmental Impacts				
	Potential Impacts	Mitigation	Significance before Mitigation	Geographic Spatial Scale	Duration	Mitigation & Certainty	Significance after Mitigation
Commencement of a long term business venture	Creates new secondary and tertiary opportunities in the local economy	A long-term operation will require frequent inputs and if from local suppliers could stimulate a secondary or even a tertiary market/supply chain	Low (+)	Site	Long term	Full & Definite	Low (+)
Vacant agricultural land put into production	Strengthens agricultural production in the area	Share successes and failures with the local fraternity so that all can learn from lessons learnt.	Medium (-)	Local	Long-term	Full & Definite	Low (+)



2.3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

2.3.1 PREFERRED ALTERNATIVE: POTENTIAL ENVIRONMENTAL IMPACTS DURING OPERATION:

Table 3: Environmental impacts during **OPERATION**: The Preferred Alternative – Macadamia Nut Orchards

Environmental Aspect	Summary of Implications and Mitigation		Assessment of Environmental Impacts				
	Potential Impacts	Mitigation	Significance before Mitigation	Geographic Spatial Scale	Duration	Mitigation & Certainty	Significance after Mitigation
<b>BIOPHYSICAL IMPACTS</b>							
Loss of threatened habitat	The desire to protect the remaining untransformed areas of this habitat becomes important	Maintain the remainder of the untransformed natural habitat as Private Conservation.	Medium (-)	Site	Permanent	Partial & definite	Medium (-)
Fragmentation of natural habitat	Reduces the ability of that habitat type to resist change	Maintain the remaining untransformed east-west corridors and plant windbreaks using indigenous trees.	Low (-)	Site	Permanent	Partial and Definite	Low (-)
Reduction in species diversity	Reduces the habitats ability to adapt to climate change	<ul style="list-style-type: none"> <li>Rescue sensitive, herbaceous, and bulbous species from orchard footprints and transplant into remaining natural areas.</li> <li>Propagate and grow sensitive, rare and threatened species amongst the Macadamia trees.</li> </ul>	Low (+)	Site	Long-term	Full & Unsure	Medium (+)
Soil exposure to the elements	The potential of the soil declines	Maintain vegetative soil cover in tact.	Low (+)	Site	Short-term	Full & Definite	Low (+)
Risk of soil erosion	Valuable topsoil is lost	<ul style="list-style-type: none"> <li>Repair any disturbance of vegetative cover as quickly as possible to minimize the exposed soil.</li> <li>Apply temporary erosion control methodologies eg soil curtains, grass bales stacked along the contour etc</li> </ul>	Low (-)	Site	Short-term	Full & Definite	Low (+)
Changed soil conditions	Decreased potential due to loss of source of organic matter, root material breaking the soil open to allow percolation etc	Maintain the natural ground cover or the alternative, indigenous, compatible groundcover to protect the soil to maintain the ecological goods and services.	Low (+)	Site	Short-term	Full & Definite	Low (+)
<b>SOCIO-ECONOMIC IMPACTS</b>							
Increased	Reduced local poverty	Employ labour intensive methodologies where	Low (+)	Local	Long-term	Full &	Low (+)

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Environmental Aspect	Summary of Implications and Mitigation		Assessment of Environmental Impacts				
	Potential Impacts	Mitigation	Significance before Mitigation	Geographic Spatial Scale	Duration	Mitigation & Certainty	Significance after Mitigation
employment		possible to employ maximum number of personnel				Probable	
Higher yield	Increases the viability of the farm	Plant alternative crops in an integrated, multi-level way with Macadamia nuts to increase the potential yield off the land.	Low (+)	Site	Long-term	Full & Possible	Medium (+)
Stimulus for local economy	Local businesses benefit from the money spent locally	Purchase operational material from local suppliers.	Low (+)	Local	Short-term	Full & Possible	Medium (+)
Commencement of a long term business venture	Creates new secondary and tertiary opportunities in the local economy	A long-term operation will require frequent inputs and if from local suppliers will stimulate a secondary or even a tertiary market/supply chain	Medium (+)	Site	Long term	Full & Definite	Medium (+)
Vacant agricultural land put into production	Strengthens agricultural production in the area	Share successes and failures with the local fraternity so that all can learn from lessons learnt.	Medium (-)	Local	Long-term	Full & Definite	Medium (+)

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### 2.3.2 FIRST ALTERNATIVE- POTENTIAL ENVIRONMENTAL IMPACTS DURING OPERATION:

Table 4: Potential environmental impacts during **OPERATION**.

Environmental Aspect	Summary of Implications and Mitigation		Assessment of Environmental Impacts				
	Potential Impacts	Mitigation	Significance before Mitigation	Geographic Spatial Scale	Duration	Mitigation & Certainty	Significance after Mitigation
<b>BIOPHYSICAL IMPACTS</b>							
Loss of threatened habitat	The desire to protect the remaining untransformed areas of this habitat becomes important	Maintain the land as if a Private Conservation area.	High (-)	Site	Permanent	Partial & definite	High (-)
Fragmentation of natural habitat	Reduces the ability of that habitat type to resist change	Maintain the veld as a unit although in camps	Low (-)	Site	Permanent	Partial and Definite	High (+)
Reduction in species diversity	Reduces the habitats ability to adapt to climate change	Maintain sensitive, herbaceous, and bulbous species in a natural area.	Low (-)	Site	Long-term	Full &Unsure	Low (+)
Soil exposure to the elements	The potential of the soil declines	Maintain the natural grass cover to keep the soil cover intact for as long as possible.	Low (-)	Site	Short-term	Full & Definite	Low (+)
Risk of soil erosion	Valuable topsoil is lost	<ul style="list-style-type: none"> <li>• Maintain vegetative cover to minimize the expose to erosive forces.</li> <li>• Apply temporary erosion control methodologies eg soil curtains, grass bales stacked along the contour etc</li> </ul>	Low (-)	Site	Short-term	Full & Definite	Low (+)
Changed soil conditions	Decreased potential due to loss of source of organic matter, root material breaking the soil open to allow percolation etc	<ul style="list-style-type: none"> <li>• Maintain the natural ground cover for as long as possible.</li> <li>• Plant alternative, indigenous, compatible groundcover to protect the soil to maintain the ecological goods and services.</li> </ul>	Low (-)	Site	Short-term	Full & Definite	Low (+)
<b>SOCIO-ECONOMIC IMPACTS</b>							
Increased employment	Reduced local poverty	Choose labour intensive methodologies where possible to employ maximum number of	Low (+)	Local	Long-term	Full & Probable	Low (+)

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Environmental Aspect	Summary of Implications and Mitigation		Assessment of Environmental Impacts				
	Potential Impacts	Mitigation	Significance before Mitigation	Geographic Spatial Scale	Duration	Mitigation & Certainty	Significance after Mitigation
		personnel.					
Higher yield	Increases the viability of the farm	Seek to plant pastures to increase the potential yield off the land.	Low (+)	Site	Long-term	Full & Possible	Medium (+)
Stimulus for local economy	Local businesses benefit from the money spent locally	Purchase set-up material from local suppliers.	Low (+)	Local	Short-term	Full & Possible	Low (-)
Commencement of a long term business venture	Creates new secondary and tertiary opportunities in the local economy	A long-term operation will require frequent inputs and if from local suppliers could stimulate a secondary or even a tertiary market/supply chain.	Medium (+)	Site	Long term	Full & Definite	Medium (+)

**2.4. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING OR CLOSURE PHASE**

**THERE WILL BE NO DECOMMISSIONING OR CLOSURE PHASE**

**a. Site alternatives**

List the potential impacts associated with site alternatives that are likely to occur during the decommissioning or closure phase:

**Alternative S1 (preferred alternative)**

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

**Alternative S2**

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

**No-go alternative (compulsory)**

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

Indicate mitigation measures to manage the potential impacts listed above:

<b>Alternative S1</b>	<b>Alternative S2</b>

**b. Process, technology, layout or other alternatives**

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List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the decommissioning or closure phase (please list impacts associated with each alternative separately):

### Alternative A1 (preferred alternative)

<p><i>Direct impacts:</i></p> <p><i>Indirect impacts:</i></p> <p><i>Cumulative impacts:</i></p>
---

### Alternative A2

<p><i>Direct impacts:</i></p> <p><i>Indirect impacts:</i></p> <p><i>Cumulative impacts:</i></p>
---

### No-go alternative (compulsory)

<p><i>Direct impacts:</i></p> <p><i>Indirect impacts:</i></p> <p><i>Cumulative impacts:</i></p>
---

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1	Alternative A2

## 2.5. PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

### A) Planning and Design Phase

**Alternative S1 (preferred site)**  
Macadamia nut farm

**Alternative S2**  
Cattle Farm

<ul style="list-style-type: none"> <li>• Monitor the EIA application process</li> <li>• Monitor the wetland system.</li> <li>• Monitor the available water.</li> <li>• Monitor the natural vegetative cover</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor the EIA application process</li> <li>• Monitor the wetland system.</li> <li>• Monitor the available water.</li> <li>• Monitor the natural vegetative cover</li> </ul>
--	--

### B) Construction Phase

**Alternative A1 (preferred alternative)**  
Macadamia nut farm

**Alternative A2**  
Cattle Farm

<ul style="list-style-type: none"> <li>• Monitor Possible erosion</li> <li>• Monitor storm water flow</li> <li>• Monitor waste management</li> <li>• Monitor water quality</li> <li>• Monitor sensitive vegetation rescue and replanting</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor Possible erosion</li> <li>• Monitor storm water flow</li> <li>• Monitor waste management</li> <li>• Monitor water quality</li> </ul>
---	---

### C) Operational Phase

<b>Alternative S1 (preferred site)</b> Macadamia nut farm	<b>Alternative S2</b> Cattle Farm
<ul style="list-style-type: none"> <li>• Monitor Possible erosion</li> <li>• Monitor storm water flow</li> <li>• Monitor waste management</li> <li>• Monitor water quality</li> <li>• Monitor sensitive rescued vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor Possible erosion</li> <li>• Monitor storm water flow</li> <li>• Monitor waste management</li> <li>• Monitor water quality</li> </ul>

## 3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

### **Alternative S1 (preferred site) Macadamia nut farm**

<u>Impact type</u>	<u>Duration</u>	<u>Status</u>	<u>Likelihood</u>	<u>Significance</u>
Loss of threatened habitat	Permanent	Occurred	Partial & definite	Medium (-)
Fragmentation of natural habitat	Permanent	Occurred	Partial and Definite	Low (-)
Reduction in	Long-term	Occurred	Full &Unsure	Low (-)

## Basic Assessment Report

species diversity				
Soil exposure to the elements	Short-term	Occurred	Full & Definite	Low (+)
Risk of soil erosion	Short-term	Occurred	Full & Definite	Low (+)
Changed soil conditions	Short-term	Occurred	Full & Definite	Low (+)
Increased employment	Long-term	Occurred	Full & Probable	Low (+)
Higher yield	Long-term	In future	Full & Possible	No impact
Stimulus for local economy	Short-term	In future	Full & Possible	No impact
Commencement of a longterm business venture	Long term	Occurred	Full & Definite	Medium (+)
Vacant agricultural land put into production	Long-term	Occurred	Full & Definite	Medium (+)

### Alternative S2 Cattle farm

<u>Impact type</u>	<u>Duration</u>	<u>Status</u>	<u>Likelihood</u>	<u>Significance</u>
Loss of threatened habitat	Permanent	Occurred	Partial & definite	Very High (-)
Fragmentation of natural habitat	Permanent	Occurred	Partial and Definite	Medium (-)
Reduction in species diversity	Long-term	Occurred	Full & Unsure	Medium (-)
Soil exposure to the elements	Short-term	Occurred	Full & Definite	Low (+)
Risk of soil erosion	Short-term	Occurred	Full & Definite	Low (+)
Changed soil conditions	Short-term	Occurred	Full & Definite	Low (+)
Increased employment	Long-term	Occurred	Full & Probable	Low (+)
Higher yield	Long-term	Occurred	Full & Possible	Medium (+)
Stimulus for local economy	Short-term	Occurred	Full & Possible	Low (+)
Commencement of a longterm business venture	Long term	Occurred	Full & Definite	Low (+)
Vacant agricultural land put into production	Long-term	Occurred	Full & Definite	Low (+)



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<b>No-go alternative (compulsory)</b>				
<b>Impact type</b>	<b>Duration</b>	<b>Status</b>	<b>Likelihood</b>	<b>Significance</b>
Loss of threatened habitat	Permanent	Not happening	Partial & definite	Very High (+)
Fragmentation of natural habitat	Permanent	Not happening	Partial and Definite	Very High (+)
Reduction in species diversity	Long-term	Not happening	Full & Unsure	Very High (+)
Soil exposure to the elements	Short-term	Not happening	Full & Definite	High (+)
Risk of soil erosion	Short-term	Not happening	Full & Definite	Low (+)
Changed soil conditions	Short-term	Not happening	Full & Definite	Low (+)
Increased employment	Long-term	Not happening	Full & Probable	Low (-)
Higher yield	Long-term	Not happening	Full & Possible	Very High (-)
Stimulus for local economy	Short-term	Not happening	Full & Possible	Very High (-)
Commencement of a longterm business venture	Long term	Not happening	Full & Definite	Very High (-)
Vacant agricultural land put into production	Long-term	Not happening	Full & Definite	Medium (-)

## SECTION F. RECOMMENDATION OF EAP

Is the information contained in this report and the documentation attached hereto in the view of the EAP sufficient to make a decision in respect of this report?

If "NO", please contact the KZN Department of Economic Development, Tourism & Environmental Affairs regarding the further requirements for your report.

YES	

If "YES", please attach the draft EMP as Appendix F to this report and list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

- The Department of Economic Development Tourism and Environment Affairs may authorise the development of macadamia plantations with a limited footprint, restricted to the already transformed areas, because the fine issued by the Department had been paid by the applicant.
- Conditions prescribed in the specialist studies, and EKZNW reports.
- The applicant must appoint a specialist to rescue all sensitive plants still present in the orchard area and replant it in the conservation area.
- The applicant to ensure the remainder of the farm be fenced off as a conservation area.
- The applicant must refrain from any activity within the buffer area to the wetland and the

## Basic Assessment Report

wetland itself.

- The applicant must only plant indigenous trees in the wind screen around the orchard.
- The applicant must employ local unemployed people.

## **SECTION G: APPENDIXES**

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

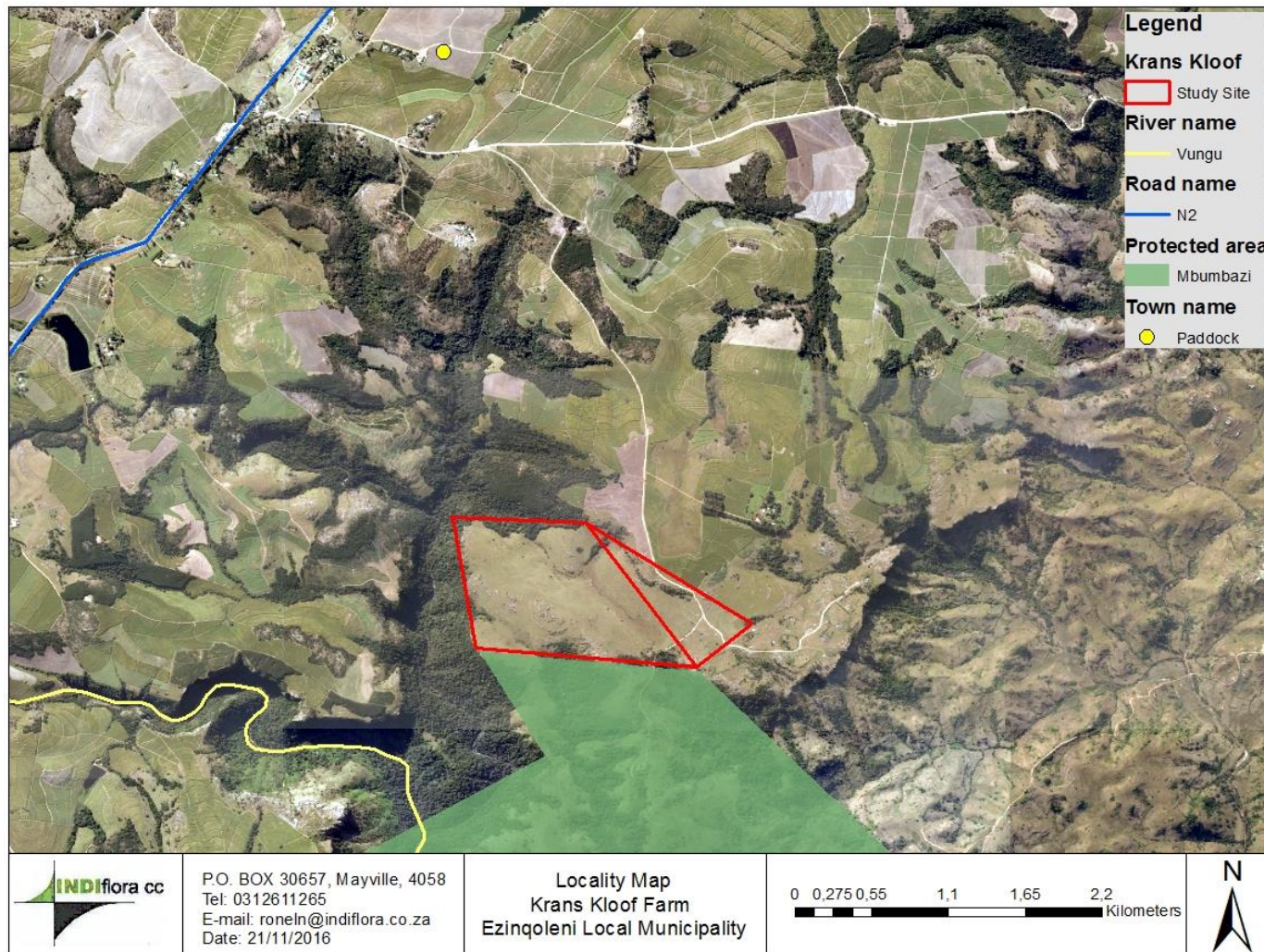
Appendix E: Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other information

## **Appendix A: Site plan(s)**

# Basic Assessment Report

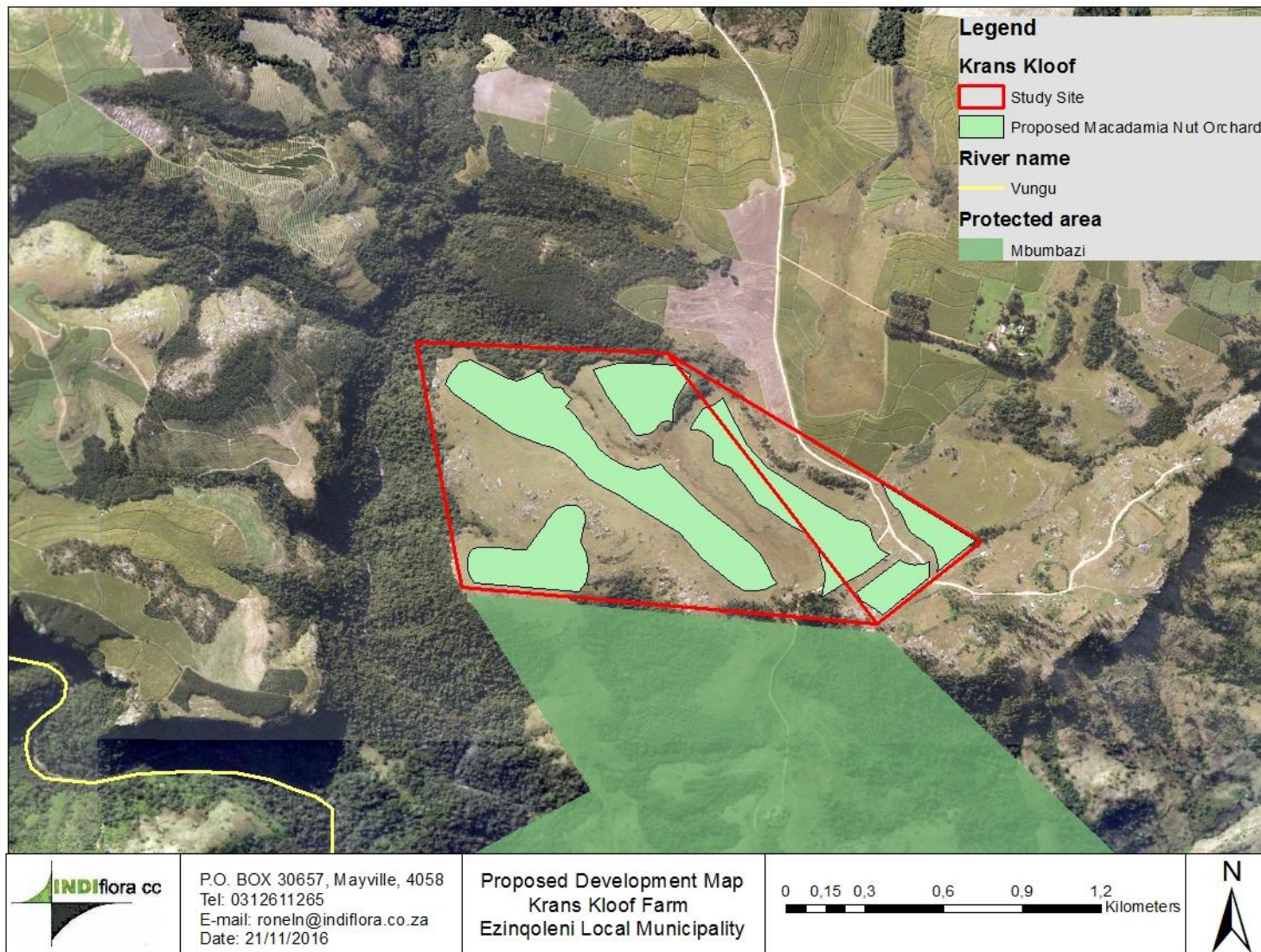


## Site location map

*"Leading the attainment of inclusive growth for job creation and economic sustenance"*



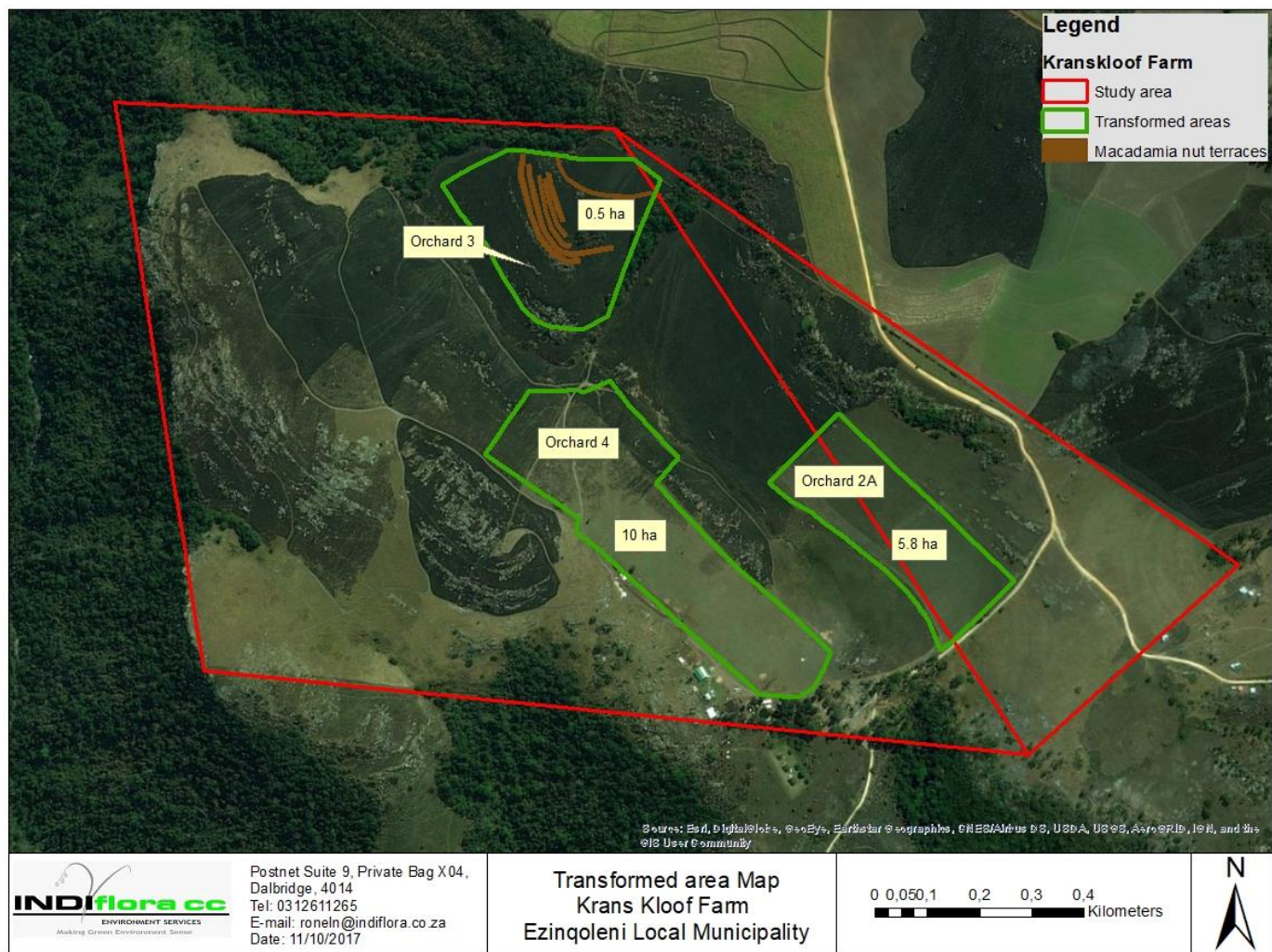
# Basic Assessment Report



*"Leading the attainment of inclusive growth for job creation and economic sustenance"*



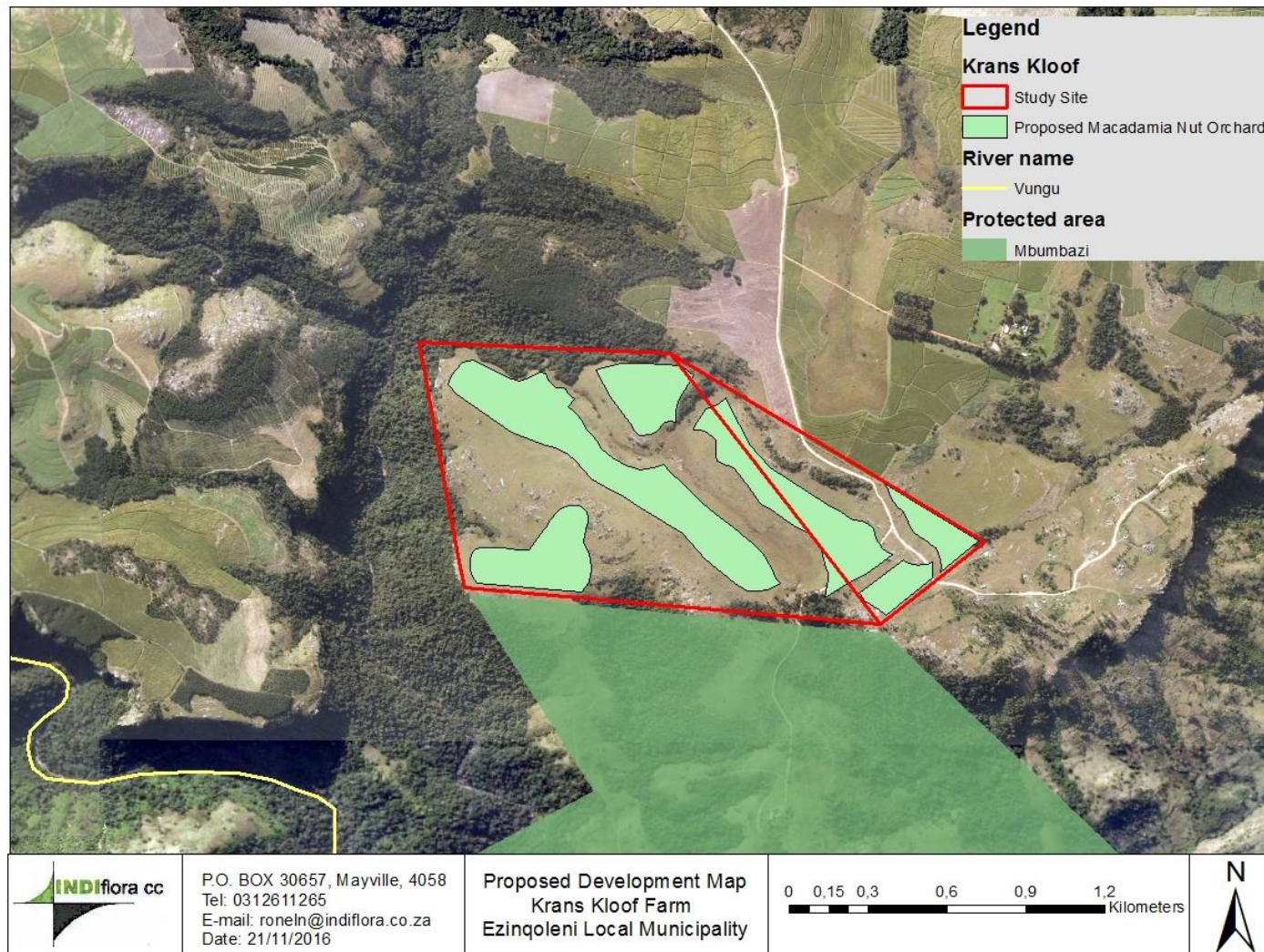
# Basic Assessment Report



**Site Plan showing where the transformation took place**

*"Leading the attainment of inclusive growth for job creation and economic sustenance"*



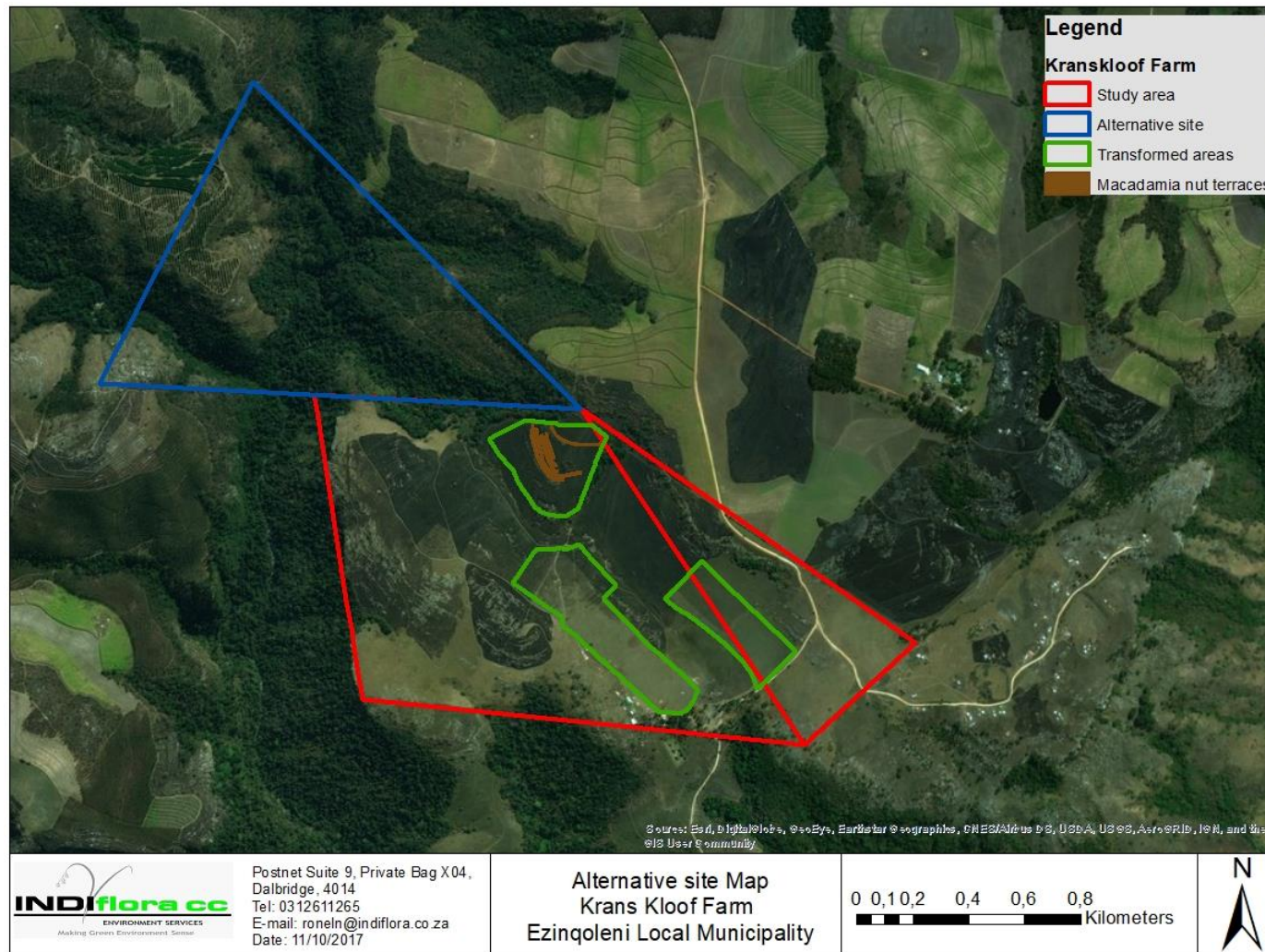


## Planned Macadamia orchards

*"Leading the attainment of inclusive growth for job creation and economic sustenance"*



# Basic Assessment Report



## Alternative site

*"Leading the attainment of inclusive growth for job creation and economic sustenance"*

## **Appendix B: Photographs**



Photo 1: The planted pasture now dominated by moribund *Aristida junciformis*



Photo 2: The planted pasture in the foreground and that natural grass cover in the middle of the photo with the long-established gum trees in the background





Photo 3: The planted pasture recently mowed and baled. Note the rows indicative of mechanical planting



Photo 4: The diversity of species of the natural grass veld



Photo 5: The natural grassland north of the water course



Photo 6: A composite panoramic view from the home stead of the transformed area north of the water course



Photo 7: A view of the paddocks and the watercourse from the transformed northern fields





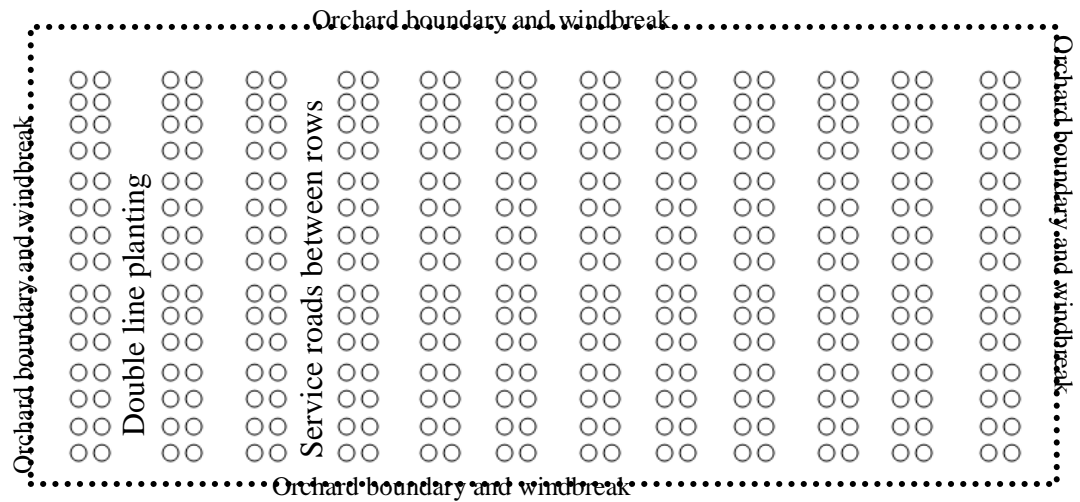
Photo 8: A view over the recently ploughed field of the vegetable fields south of the water course and west of the paddocks



Photo 9: A view of the partially cut terraces where the first orchard of macadamia nut trees were to be planted

## **Appendix C: Facility illustration(s)**

# Basic Assessment Report



Conceptual Macadamia Nut Orchard layout



[https://www.google.co.za/search?q=Images+of+Macadamia+Nut+Orchards&rlz=1C1GGGE\\_ZA611ZA613&espv=2&biw=1301&bih=559&tbn=isch&tbo=u&source=univ&sa=X&ved=0CBsQsARqFQoTCPP\\_psLP0McCFUcFAodsTkAWQ](https://www.google.co.za/search?q=Images+of+Macadamia+Nut+Orchards&rlz=1C1GGGE_ZA611ZA613&espv=2&biw=1301&bih=559&tbn=isch&tbo=u&source=univ&sa=X&ved=0CBsQsARqFQoTCPP_psLP0McCFUcFAodsTkAWQ)

A newly planted and older Macadamia Nut Orchards



[https://www.google.co.za/search?q=Images+of+Macadamia+Nut+Orchards&rlz=1C1GGGE\\_ZA611ZA613&espv=2&biw=1301&bih=559&tbn=isch&tbo=u&source=univ&sa=X&ved=0CBsQsARqFQoTCPP\\_psLP0McCFUcFAodsTkAWQ](https://www.google.co.za/search?q=Images+of+Macadamia+Nut+Orchards&rlz=1C1GGGE_ZA611ZA613&espv=2&biw=1301&bih=559&tbn=isch&tbo=u&source=univ&sa=X&ved=0CBsQsARqFQoTCPP_psLP0McCFUcFAodsTkAWQ)

A panoramic view of a new and established Macadamia Nut Orchards





[https://www.google.co.za/search?q=Images+of+Macadamia+Nut+Orchards&rlz=1C1GGGE\\_ZA611ZA613&espv=2&biw=1301&bih=559&tbm=isch&tbo=u&source=univ&sa=X&ved=0CBsQsARqFQoTCPP\\_psLP0McCFUcFAodsTkAWQ](https://www.google.co.za/search?q=Images+of+Macadamia+Nut+Orchards&rlz=1C1GGGE_ZA611ZA613&espv=2&biw=1301&bih=559&tbm=isch&tbo=u&source=univ&sa=X&ved=0CBsQsARqFQoTCPP_psLP0McCFUcFAodsTkAWQ)

An integrated use of an established Macadamia Nut Orchard



[https://www.google.co.za/search?q=Images+of+Macadamia+Nut+Orchards&rlz=1C1GGGE\\_ZA611ZA613&espv=2&biw=1301&bih=559&tbm=isch&tbo=u&source=univ&sa=X&ved=0CBsQsARqFQoTCPP\\_psLP0McCFUcFAodsTkAWQ](https://www.google.co.za/search?q=Images+of+Macadamia+Nut+Orchards&rlz=1C1GGGE_ZA611ZA613&espv=2&biw=1301&bih=559&tbm=isch&tbo=u&source=univ&sa=X&ved=0CBsQsARqFQoTCPP_psLP0McCFUcFAodsTkAWQ)

Managed groundcover in an established Macadamia Nut Orchard

## **Appendix D: Specialist reports**

## **Vegetation Assessment**

## **Wetland delineation assessment report**

## **Agricultural assessment report**

## **Appendix E: Comments and responses report**

## **Appendix F: Draft Environmental Management Programme (EMPr)**

**ENVIRONMENTAL MANAGEMENT  
PROGRAM  
FOR  
Krans Kloof Farm  
At  
Sub A of Sub D of Roundabout 15633,  
Sub A of Krans Kloof 8100**

**PREPARED BY  
Johan Bodenstein  
PrSciNat**



**September 2015**





## DETAILS OF EAP AND DECLARATION OF INTEREST

	(For official use only)
EIA File Reference Number:	
NEAS Reference Number:	
Waste Management Licence Number: (if applicable)	
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010

### PROJECT TITLE

FARM: SUB A OF SUD D OF ROUNDABOUT 15633, SUB A OF KRANS KLOOF

Environmental Assessment Practitioner (EAP): <sup>3</sup>	<b>Indiflora cc Environmental Services</b>		
Contact person:	<b>Johan Bodenstein</b>		
Postal address:	<b>PO Box 30657, Mayville</b>		
Postal code:	<b>40258</b>	Cell:	<b>0825770898</b>
Telephone:	<b>0312611265</b>	Fax:	<b>0867592840</b>
E-mail:	<b>johan@indiflora.co.za</b>		
Professional affiliation(s) (if any)	<b>PrSciNat (400143/04), IAIAsa, GSSA</b>		

Project Consultant:	<b>Indiflora cc Environmental Services</b>		
Contact person:	<b>Johan Bodenstein</b>		
Postal address:	<b>PO Box 30657, Mayville</b>		
Postal code:	<b>40258</b>	Cell:	<b>082 577 0898</b>
Telephone:	<b>031 2611 265</b>	Fax:	<b>0867592840</b>
E-mail:	<b>johan@indiflora.co.za</b>		

4.2 The Environmental Assessment Practitioner

I, **Johannes Albert Bodenstein**, declare that –

General declaration:

- I act as the independent environmental practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not  
all the particulars furnished by me in this form are true and correct; will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

**Disclosure of Vested Interest** (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010;
- I have a vested interest in the proposed activity proceeding, such vested interest being:

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Signature of the environmental assessment practitioner:

**Indiflora cc Environmental Services**

Name of company:

**23 August 2018**

Date:

**i. ABBREVIATIONS:**

<b>C</b>	-	<b>Contractor</b>
<b>CA</b>	-	<b>Competent Authority</b>
<b>CEMP</b>	-	<b>Construction Environment Management Program</b>
<b>DWAS</b>	-	<b>Department of Water Affairs and Sanitation</b>
<b>E</b>	-	<b>Engineer</b>
<b>ECO</b>	-	<b>Environment Control Officer</b>
<b>EEPCPD</b>	-	<b>eThekwini Environment Planning and Climate Protection</b>
		<b>Department.</b>
<b>EWC</b>	-	<b>Earthworks Contractor</b>
<b>HO</b>	-	<b>Home Owner (Greg McAllister)</b>
<b>LC</b>	-	<b>Landscape Contractor</b>
<b>NEMA</b>	-	<b>National Environment Management Act</b>
<b>OEMP</b>	-	<b>Operational Environment Management Program</b>
<b>PA</b>	--	<b>Principal Agent</b>

## 1. INTRODUCTION

### 1.1. THE PURPOSE OF THIS CONSTRUCTION EMP

The purpose of the Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP) is to prevent any negative environmental impacts or to ensure those that do happen are kept to the minimum during the construction phase and the operational phase of this development by providing this practical and achievable plan of management actions. The mitigation measures specified within this plan will assist in limiting these negative impacts during the construction process. The need for compliance and the need for monitoring compliance by inspection are explained. The various role players and their responsibilities and reporting procedures are also contained within this CEMP.

### 1.2. THE ORIGIN AND CONTEXT OF THIS EMP

The developer is proposing to construct six Macadamia Plantations and a dam. The construction activities and the operational activities are governed by this EMP.

### 1.3. ROLE PLAYERS AND RESPONSIBILITIES

THE DEVELOPER: Neil Buist

Tel: PO Box 21985  
Bluff  
4036  
Fax:  
Mobile: 082 893 2351  
Email: [buist1@mweb.co.za](mailto:buist1@mweb.co.za)  
Website:

**RESPONSIBILITIES:** To ensure the development comply with the requirements of the Environmental Management Act and the items listed in this EMP.

ENVIRONMENTAL CONTROL OFFICER:

Note: This appointment still has to be confirmed:

**Johan Bodenstein** of Indiflora cc Environmental Services is the Environmental Consultant.

Contact details: Indiflora cc, PO Box 30657, Mayville, 4058  
Office: 0312661106 Fax: 0867592840 Cell: 0825770898 Email:  
[johan@indiflora.co.za](mailto:johan@indiflora.co.za)

**RESPONSIBILITY:** It is his responsibility to oversee all environmental aspects including compliance and rehabilitation.

#### 1.4. THE STRUCTURE AND CONTENT OF THIS EMPr

The following sections of this CEMP deal with a particular environmental management component associated with the construction project, as follows:

- A. Management of site establishment, construction and the workforce
- B. Post-construction activities
- C. Special measures related to site
- D. Environmental compliance monitoring
- E. Operational management
- F. Contact numbers

#### 1.5. SIGNIFICANT OR SENSITIVE FEATURES OF THE SITE

Significant or sensitive features are:

1. The wetland flowing through the property.

#### 1.6 IMPACTS IDENTIFIED DURING THE BASIC ASSESSMENT PROCESS:

##### 1.6.1 IMPACTS DURING THE DESIGN PHASE:

**Erosion:** Proper stormwater control prevents erosion.

**Storm water:** Stormwater attenuated properly will prevent erosion.

**Storm Water Management Plan:** A proper SWMP prevents damage to the dune.

**Environment Management Plan:** An EMP prevents an assortment of environmental problems.

##### 1.6.2 Impacts identified during the Construction Phase

**Erosion:** Replace the vegetative cover in the orchard as quickly as possible.

**Storm water:** By installing a compacted earth swale on the edge of the orchard to trap storm water.

**Environment Management Plan:** Implement the EMPr to prevent an assortment of environmental problems and to mitigate others.

**Solid Waste Management:** Construction waste accumulated on site will be sorted to be recycled. Any solid waste that cannot be recycled will be taken to the nearest landfill site

##### 1.6.3 Impacts identified during the Operational Phase:

Erosion:

- Ensure the soil does not become exposed which could lead to erosion.

Storm water:

- Ensure the stormwater does not flow uncontrolled off the site which could lead to erosion.

Storm Water Management Plan:

- The owner is to monitor the stormwater system after each rain event to ensure the SWMP prevents damage.

Environment Management Plan:

- The owner should appoint an environmental practitioner to review the EMP annually to ensure it is still able to prevent environmental problems and mitigate others.

Solid Waste Management:

- The owner should review the solid waste situation monthly and make appropriate decisions to ensure the impact on the environment is minimised.

## 2. SECTION A:

### MANAGEMENT OF SITE ESTABLISHMENT, CONSTRUCTION ACTIVITIES AND THE WORKFORCE

#### 2.1. Legislation and Permits

The Site owner, Developer, Service Providers, Contractors and Principal Agent should comply with the relevant local and national legislation including:

1. Environment Conservation Act No 73 of 1989.
2. National Environment Management Act No 107 of 1989
3. National Water Act No 36 of 1998
4. Water Services Act No 108 of 1997
5. Forestry Act No 84 of 1998
6. Occupational Health and Safety Act No 85 of 1993
7. National Building Regulations and Building Standards Act No 103 of 1977
8. South African Heritage Resources Act No 25 of 1999
9. Relevant regulations as promulgated under the Standards Act No 30 of 1982
10. Local regulations and by-laws.

#### 2.2. Bush clearing

2.2.1. Alien plant removal		When	By whom
a)	The alien plants are to be <b>cut down</b> and all the cut material reduced to mulch and left on site.	Ongoing	landowner
b)	The <b>root stumps are to be treated</b> with a registered herbicide.	Ongoing	landowner
c)	Herbaceous weeds should be pulled by hand	Ongoing	landowner
2.2.2. Rescue of plants in development footprint		When	By whom
a)	Remove all <b>bulbous plants</b> and replant.	Before construction	Botanical specialist
b)	Remove all <b>herbaceous plants</b> that have a reasonable chance of relocation and replant.	Before construction	Botanical specialist

#### 2.3. Access to site

2.3.1. Pedestrian access		When	By whom
a)	Planned <b>access for staff</b> is to be approved by the Principal Agent and ECO ahead of activities.	Prior to site establishment	C, PA, ECO

2.3.2 Vehicular access			
a)	Any vehicular access to be through the main farm gate.	Prior to site establishment	C, PA

## 2.4. Establishing Storage Areas

2.4.1. General Substances and Materials		When	By whom
a)	<ul style="list-style-type: none"> <li>Choice of location for storage areas should consider the prevailing winds, general on – site topography, and surrounding sensitive habitat.</li> <li>No storage permitted within the forest or grassland.</li> </ul>	At site set-up	C, PA, ECO
b)	Storage areas should be designated, demarcated and fenced.	At site set-up	C
c)	Fire prevention facilities should be present at all storage facilities particularly from March-October.	At site set-up	C
2.4.2. Hazardous substances and materials		When	By whom
a)	Definition of hazardous substances / materials is: Chemicals that are potentially: poisonous, flammable, carcinogenic or toxic.		
b)	<p>Typical Hazardous substances / materials to be used on this site include:</p> <ul style="list-style-type: none"> <li>- diesel, petroleum, oil, bituminous products</li> <li>- cement</li> <li>- solvent based paints</li> <li>- lubricants</li> </ul>	During construction	C
c)	<ul style="list-style-type: none"> <li>Material Safety Data Sheets (MSDS's) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDS's should additionally include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes.</li> </ul>	At site set-up and ongoing	C
d)	Consider the proximity of neighbouring houses is when deciding on storage areas for hazardous substances.	At site set-up	C
e)	Notify neighbours adjacent to the construction site of the existence of the hazardous storage area.	At site set-up and ongoing	C
f)	Make staff aware dealing with these materials / substances that it has potential	During construction	C

	impacts and follow the appropriate safety measures.		
g)	<b>Submit a method statement and plans</b> for the storage of hazardous materials and C emergency procedures to the ECO.	At site-set-up	

## 2.5. Materials Management – Sourcing

2.5.1. Source of Materials		When	By whom
a)	<b>Prepare a source statement</b> indicating the sources of all materials (including topsoil, sands, natural gravels, crushed stone, asphalt, clay liners, etc.) and submit these to the Engineer prior to the commencement of any work.	At site set-up	C
b)	<b>Obtain signed documents</b> from suppliers of natural materials confirming that they have been obtained in a sustainable manner in compliance with the relevant legislation.	At site set-up	C
c)	<b>Provide proof of authorization</b> to utilize borrowed (mined), from the landowner / mineral rights owner and the Department of Minerals and Energy.	At site set-up	C

## 2.6 Education of site staff on general and environmental conduct

2.6.1. Environmental Education and Awareness		When	By whom
a)	<p>Ensure that all <b>site personnel</b> have a basic level of environmental awareness training. The Contractor must submit a proposal for this training to the ECO for approval. Topics covered should include :</p> <ul style="list-style-type: none"> <li>- What is meant by environment</li> <li>- Why the environment needs to be protected and conserved</li> <li>- How construction activities can impact on the environment especially the grassland area and the forest area.</li> <li>- What can be done to mitigate against such impacts</li> <li>- Awareness of emergency and spill response provisions.</li> <li>- Social responsibility during construction e.g. being considerate to local residents</li> </ul> <p>It is the contractor's responsibility to</p>	At start of construction	C



	provide the site foreman with no less than one hour's environmental training and ensure that the foreman has sufficient understanding to pass this information onto the construction staff.		
b)	<b>Use translators</b> where necessary.	During construction	C
c)	<b>The Principle Agent/ Environmental Control Officer to explain</b> more difficult / technical issues and to answer questions.	During construction	C
d)	<b>Use pictures and real – life examples</b> is encouraged as these tend to be more easily remembered.	During construction	C
e)	<b>Make use</b> of environmental awareness posters.	During construction	C
f)	<b>Make construction workers aware</b> that they are not to make excessive noise (e.g. shouting / hooting) when the site is near to commercial / residential areas.	During construction	C
g)	<b>Explain the ‘clean site’ policy</b> to construction workers.	During construction	C
h)	<b>Environmentally induct</b> all contractors, sub-contractors and their staff.	At commencement of construction and ongoing as new staff commence work	C/ECO

## 2.7. Dust / Air Pollution

2.7.1. Controlling dust		When	By whom
a.	<b>Vehicles travelling</b> must adhere to speed limits when travelling along the access road to avoid creating excessive dust.	During construction	C
b.	<b>Mitigate for dust</b> generated during site clearance and the construction phase through dust control measures which should include damping with water, maintenance of vegetation, on the boundaries of the site or spraying Reverseal SS100 obtainable from Revertex in Mobeni.	During construction	C
c.	<b>Cover stock piles</b> of topsoil with shade cloth or plant it with abortive crops such as Tef or Rye grass to reduce dust.	During construction	C
d.	<b>Make alternative arrangements</b> (other than fires) for cooking and / or heating requirements. LP gas cookers may be	During construction	C

	used provided that all safety regulations are followed.		
a)	<b>Access and other cleared surfaces must be dampened</b> whenever possible and especially in dry and windy conditions to avoid excessive dust.	During construction	C
b)	<b>Screening required where dust is unavoidable</b> in residential or commercial areas, utilizing wooden supports and shade cloth, to be installed at the discretion of the Environmental Officer.	During construction	C
c)	<b>Vehicles and machinery to be maintained</b> in good working order and to meet manufacturer's specifications for safety, fuel consumption, prevention of hydraulic systems, etc.	During construction	C
d)	<b>Repair equipment</b> when excessive emissions be observed.	During construction	C
e)	<b>No fires</b> are allowed on site.	During construction	C
f)	<b>Stockpiles cause dust</b> and so must be managed in accordance with the guidelines in Materials and Management in Section 3.5.	During construction C	

## 2.8. Soil Erosion

2.8.1. Topsoil Stripping and Stockpiling		When	By whom
a)	<ul style="list-style-type: none"> <li>• <b>Conserve topsoil</b> during the set up phase and the construction phase of the project, i.e. topsoil is to be conserved while providing access to the site and setting up of camp.</li> <li>• During site clearing <b>topsoil must be stockpiled</b> (nominally 150mm of soil) in a designated area.</li> </ul>	During construction	C
b)	<b>Topsoiling and revegetation</b> shall commence immediately after the completion of an activity according to the rehabilitation plan.	During construction	C
2.8.2. Soil erosion prevention		When	By whom
a)	<ul style="list-style-type: none"> <li>• <b>Create a 2-1 configuration sand bag berm</b> across the slope above the contiguous piling to prevent erosion onto the platform below.</li> </ul>	During construction	C
b)	<ul style="list-style-type: none"> <li>• <b>Create a 2-1 configuration sand</b></li> </ul>	During	C

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	<b>bag berm</b> across the slope on the edge of the fill platform to prevent erosion of the face of the fill bank below.	construction	
c)	<ul style="list-style-type: none"> <li>• <b>Create a 3-2-1 configuration sand bag berm</b> across the slope at the foot of the fill bank to prevent erosion into the NUCS below.</li> </ul>	During construction	C
d)	<ul style="list-style-type: none"> <li>• Install <b>triple soil curtains</b> parallel and across the slope through the NUCS to act as a fail safe</li> </ul>	During construction	C
e)	<ul style="list-style-type: none"> <li>• <b>The full length of the works shall not be stripped</b> of vegetation prior to commencing other activities.</li> <li>• The time that stripped areas are left exposed shall be minimized wherever possible.</li> </ul>	During construction	C
f)	<ul style="list-style-type: none"> <li>• <b>Battering of all banks</b> shall have cut and fill embankments no steeper than previous natural slopes, unless otherwise permitted by the engineer. Cut and fill embankments steeper than previous ground levels shall be revegetated immediately on completion of trimming or shall be protected against erosion using bio-engineered stabilization measures, including the use of deep – rooted vegetation such as grasses from the area to stabilize steeper embankments.</li> </ul>	During construction	C
g)	Slope the platform level into the cut to prevent forward flow of stormwater	During construction	C
h)	<b>No tipping of spoil</b> and excavated materials on site shall be permitted – all spoilt soil material and builders' rubble shall be disposed of as directed by the CEMP or used for backfill on request to the ECO.	During construction	C
i)	<b>Undertake wind screening and storm water control</b> to prevent soil loss from the site by securing it with a row of sandbags, or strips of instant lawn, or Geojute rolls or mats or the placement of brushwood across slope.	During construction	C
f)	<b>Install strips of instant lawn</b> on fill or exposed banks the moment they are shaped to their final levels which must not be delayed.	During construction	C
j)	<b>Re -vegetate areas cleared of alien</b>	During	C

	<b>vegetation</b> in the NUCS by planting appropriate indigenous, shade tolerant, locally endemic species that will creep and bind the soil.	construction	
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## 2.9. Storm water

Construction activities frequently result in diversions of natural water flow resulting in concentration of flow and an increase in the erosive potential of the water. Measures in this section are aimed at reducing the erosive potential of stormwater.			
<b>2.9.1. General Principles</b>		<b>When and</b>	<b>By whom</b>
a )	<b>Water will flow down-slope</b> over the site during rain events.	During construction	C
b )	<b>Earth, stone and rubble is to be properly disposed of</b> so as to not obstruct natural water pathways over the site, i.e. these materials must not be placed in storm water channels, drainage lines or rivers but used as energy dissipaters.	During construction	C
<b>2.9.2 Managing storm water</b>		<b>When</b>	<b>By whom</b>
a)	<b>Provide attenuation structures</b> to retain the run-off by installing the attenuation structures first.	During construction	C
b)	<b>Prevent storm water damage</b> from the increase in storm water run-off resulting from construction activities by estimating and assessing the drainage system accordingly. A drainage plan must be submitted to the Engineer for approval.	During construction	C
c)	<b>Construct swales or temporary cut off drains and berms</b> between the sand bag berms to deflect the excess storm water into vegetated areas.	During construction	C
d )	<b>Lay sandbags, Geojute, or strips of instant lawn or Biddim soil curtains across the slope</b> to slow the flow of the water down, trap the silt but allow the water to move through.	During construction	C
e )	There should be a <b>periodic checking of the site's drainage system</b> to ensure that the water flow is unobstructed and directed towards the estate drainage system.	During construction	C
f)	<b>Storm water outfalls should be designed</b> to reduce flow velocity and to drain into the existing storm water drain so	During construction	C

	that ponding don't occur.		
<b>2.9.3 Unchanneled Flow</b>		<b>When</b>	<b>By whom</b>
a)	<ul style="list-style-type: none"> <li>During construction, <b>surface flow must be controlled and slowed down</b> to avoid soil erosion.</li> </ul>	During construction	C
b)	<ul style="list-style-type: none"> <li>Where large areas of soil are left exposed, erosion <b>berms of rolled shade cloth</b> filled with coarse river sand should be constructed to break the flow of run-off water.</li> <li>The spacing between rows will be dependent on slope and on 1:3 slopes the <b>rows should be 2 m apart.</b></li> </ul>	During construction	C
c)	<b>Geojute must be installed</b> on exposed and finished banks to slow surface wash and capture eroded soil. Geojute strips should be laid across the slope in a double layer with the folded end buried at the upslope side. The next layer should overlap the lower layer.	During construction	C
d)	Where surface run – off is concentrated (e.g. along exposed roadways/ tracks), <b>flow should be slowed</b> by contouring with cut-of trenches and berms.	During construction	C
e)	<b>Vegetate the site properly</b> to slow down sheet-flow as soon as construction activities cease.	During construction	C

## 2.10 Water Quality

*Water quality is affected by the incorrect handling of substances and materials. Soil erosion and sediment is also detrimental to water quality.*

*Mis-management of polluted run-off from vehicle and plant washing and wind dispersal of dry materials into rivers and watercourses are detrimental to water quality.*

<b>2.11.1 Managing water quality</b>		<b>When</b>	<b>By whom</b>
a)	<b>Storage areas</b> that contain hazardous substances <b>should be bunded</b> with an approved impermeable liner.	During construction	C
b)	<b>Clean up spills in bunded areas</b> , remove and dispose of safely from the bunded area as soon after detection as possible to minimize pollution risk and reduced bunding capacity.	During construction	C
c)	No area is to be set aside <b>for vehicle washing and maintenance</b> . Where vehicles	During construction	C

	breakdown and are in need of field repair adequate provision must be made to contain hazardous material by laying down plastic sheeting to protect the soil. Materials caught in this bunded area must be disposed of to a suitable waste site or as directed by the engineer.		
d)	<b>Make provision for all polluted run-off</b> during set up to be treated to the Engineer's approval before being discharged into the storm water system. (This will be required for the duration of the project).	During construction	C
e)	<b>Mix / decant all chemicals and hazardous substances</b> on a tray or on an impermeable surface. Waste from these should then be disposed of to a suitable waste site.	During construction	C
f)	<ul style="list-style-type: none"> <li>• <b>Do not contaminate the soil or ground water</b> on site with any chemicals or hazardous substances eg cement wash from wheelbarrows,</li> <li>• Rhinolite excess washed out and PVA paint waste water.</li> <li>• Decant all waste water from washing into a bunded facility which must be cleared regularly for proper disposal.</li> </ul>	During construction	C
g)	<b>No vehicle washing</b> permitted.	During construction	C
h)	<b>Plant that needs to be wash of cement</b> should be done over a specifically prepared sump lined with Biddim which could be desludged and the dry and hardened cement disposed of through the general solid waste stream	During construction	C
i)	<b>Do not bathe or wash clothes or tools</b> in the watercourse, adjacent to or within the designated site. Municipal water (or another source approved by the Principal Agent) should instead be used for all activities such as washing of equipment, or disposal of any type of waste, dust suppression, concrete mixing, compaction, etc.	During construction	C

## 2.11. Materials Management

2.11.1. Stockpile Management		When	By whom
a)	Stockpiles not to <b>obstruct natural water pathways.</b>	During construction	C
b)	<b>Stockpiles are not to exceed 2m</b> in height	During	C

	unless otherwise permitted by the engineer.	construction	
c)	<b>Cover exposed stockpiles</b> against wind or heavy rain, by vegetation, or sheeting, depending on the duration of the project.	During construction	C
d)	Stockpiles should be <b>protected</b> by the construction of berms or low brick walls around their bases.	During construction	C
e)	<b>Keep stockpiles clear</b> of weeds and alien vegetation growth by regular weeding.	During construction	C
<b>2.12.2. Handling of Hazardous Materials</b>		<b>When</b>	<b>By whom</b>
a)	<b>Mix concrete/cement on a designated impermeable surface.</b>	During construction	C
b)	<b>No washing of concrete transporting vehicles</b> on the site unless in a bunded area provided frequently cleared of cementitious waste.	During construction	C
c)	<b>No washing of asphalt or any other bituminous transporting vehicles</b> on site.	During construction	C
d)	<b>No mixing of lime and other powders</b> during excessively windy conditions.	During construction	C
e)	<b>Store all vehicle maintenance and repair substances in sealed containers</b> until they can be disposed of / removed from the site.	During construction	C
f)	<b>Transport Hazardous substances / materials</b> in sealed containers or bags.	During construction	C
g)	<b>No spraying of herbicides / pesticides under windy conditions</b> and must comply with OHSA specs and other chemical handling laws.	During construction	C
h)	<b>Outline a method statement</b> for the dealing with accidents/spillages of hazardous materials. This statement must be handed to the Engineer as well as to DWAS should an incident occur which includes the following: <ul style="list-style-type: none"> <li>• Stop the source of the spill;</li> <li>• Contain the spill;</li> <li>• All significant spills must be reported to the Department of Water and Sanitation and all other relevant authorities.</li> <li>• Remove the spilled product for treatment or authorized disposal;</li> <li>• If necessary, remedial action must be taken in consultation with this Department and the Department of Environment Affairs;</li> <li>• Incident must be documented.</li> </ul>	During construction	C
<b>2.12.2 Fuel storage</b>		<b>When</b>	<b>By whom</b>
a)	The tanks or containers must be placed <b>on an impermeable surface</b> such as a concrete slab,	During construction	C



	and must be <b>bunded</b> by an impermeable wall, such as an internally plastered and sealed brick wall, of sufficient height to contain any spillages or tank failures up 110% capacity of what is stored.		
b)	The tanks must have the appropriate <b>hazard and no smoking signs</b> erected on or near them.	During construction	C
c)	There must be a <b>leak proof drip tray</b> used below the filler cap of any machinery, containers or vehicles that is filled from the tanks. Any fuel on the drip tray must be placed in an appropriate container closed for disposal to a waste disposal site.	During construction	C
d)	There must be <b>adequate fire extinguishers</b> located close by in an accessible position to the tanks.	During construction	C
e)	There must be a spill kit (labeled spill kit with some <b>absorbent material</b> (such as Drizit or Peatsorb) kept close to the tanks which should be used to mop up any spillage of fuel. This used absorbent material may be placed in the container for contaminated soil, and must also be disposed of to a licensed waste <b>During construction - C</b> disposal site.	During construction	C
f)	There must be a <b>container</b> (such as a steel drum) to collect any soil contaminated by spillages. This container should be labeled "contaminated soil", and this container must be emptied as required at a licensed waste disposal site.	During construction	C
g)	Contaminated rain water accumulated in the bund should be scooped out and placed in sealed containers and disposed of at a hazardous landfill site. Copies of waybills are to be kept on the environmental file for auditing purposes.	During construction	C

### 2.13. Waste management

2.13.1. On – site Waste Management		When	By whom
a)	<b>Place refuse and construction waste in designated skips / bins</b> , at the end of each working day which must be regularly emptied when full. The skips should remain within demarcated areas and should be designed to prevent refuse from being blown out by wind.	<b>At all times</b>	C
b)	<b>Place waste receptacles at the work front</b> at close intervals, in addition to the waste facilities	During construction	C

	within the construction camp,		
c)	Littering on the site is forbidden. <b>Clear the site of all litter</b> at the end of each working day.	During construction	C
d)	<b>Encourage recycling</b> by providing separate receptacles for different types of waste eg wood, metal, plastic and make sure that staff is aware of their uses.	During construction	C
e)	The excavation and use of <b>rubbish pits on site is forbidden.</b>	During construction	C
f)	<b>Burning of waste</b> is forbidden.	During construction	C
g)	<b>Allocate a fenced area</b> for waste sorting and temporary storage. It should be covered to prevent the wind from blowing the waste around.	At site set-up	C
h)	<b>Provide individual skips</b> for different types of waste (e.g. “household” type refuse, building rubble, etc.).	During construction	C
<b>2.13.2. Waste disposal - Non – hazardous waste</b>		<b>When and</b>	<b>By whom</b>
a)	<b>Remove waste from the site</b> and transport it to an approved landfill site.	During construction	C
b)	<b>Place copies of waybills</b> for inspection on the environmental file proving disposal.	During construction	C
c)	<b>Storage of construction clean rubble is permitted</b> at pre-agreed and demarcated spoil dumps on site, approved by the Engineer, until ready for disposal or use as backfill.	During construction	C
<b>2.13.3 Hazardous Wastes</b>		<b>When</b>	<b>By whom</b>
a)	Approved <b>waste contractor must dispose of Hazardous waste. Provide waybills for inspection.</b>	At site set-up	C
b)	<ul style="list-style-type: none"> <li>• <b>Chemical toilet waste is to be disposed of regularly</b> and in a responsible manner by a registered waste contractor.</li> <li>• Care must be taken to <b>avoid contamination of soils and water</b>, pollution and nuisance to adjoining areas by using an impermeable layer eg plastic sheeting.</li> <li>• Communicate this requirement to the service provider.</li> </ul>	During construction	C

## 2.14. Staff Conduct

<b>2.14.1. Environmental Education and Awareness</b>		<b>When</b>	<b>By whom</b>
a)	<b>Environmentally induct</b> all contractor and	At the start	C

	sub-contractor staff into the contents of the CEMP.	of construction	
b)	<b>Monitor the performance of construction workers</b> to ensure that the points relayed during their induction have been properly understood and are being followed. If necessary, the ECO and / or a translator should be called to the site to further explain certain aspects of environmental or social behaviour that are unclear.	During construction	C
<b>2.14.2. Worker Conduct on Site</b>		<b>When</b>	<b>By whom</b>
a)	<b>Workers to respect other people</b> working and living in the area surrounding the development.	During construction	C
b)	<b>Keep working hours</b> from 07h00 to 17h00 from Monday to Friday and from 07h00 to 13h00 on a Saturday. No work on public holidays.	During construction	C
c)	<b>Inform the neighbours</b> if any particular noisy activities are going to take place in advance.	During construction	C

## 2.15 Conservation of Natural Environment

<b>2.15.1. Fauna and Flora</b>		<b>When</b>	<b>By whom</b>
a)	<ul style="list-style-type: none"> <li>Take care to <b>avoid the introduction of alien plant species</b> to the site and surrounding areas. (Particular attention must be paid to imported material).</li> <li><b>Remove aliens by weeding.</b> This significantly reduces the amount of time and money that must be spent on alien plant management during rehabilitation.</li> <li><b>Control alien vegetation</b> encroachment onto site as a result of construction activities during construction.</li> </ul>	At site set-up and ongoing	C
b)	<b>Minimize disturbance</b> of birds, animals and reptiles and their habitats wherever possible.	During construction	C
c)	<b>No hunting or snaring</b> of birds and animals will lead to the person being charged criminally.	At site set-up and ongoing	C
d)	<b>No gathering</b> of firewood, fruit, muthi plants, crops, or any other natural material on site or in areas adjacent to the site is prohibited.	At site set-up and ongoing	C
<b>2.15.2 The NUCS</b>		<b>When</b>	<b>By whom</b>
a)	The NUCS and undeveloped areas on the side must be <b>fenced off and screened with 80% dark green shade cloth.</b>	Before construction	C
b)	<b>Pedestrian access</b> is required for the	During	C

	conservation management team to control aliens, install erosion controls and replant the area.	construction	
c)	<b>All plant material cut in the NUCS</b> should be broken down to small bits which should be laid in rows on the ground across the slope to help slow down stormwater.	During construction	C
<b>2.15.3 Laying the sewer through the NUCS</b>		<b>When</b>	<b>By whom</b>
a)	<b>The strip through the NUCS</b> may not be opened up wider than 2m which caters for the trench and the excavated soil with space to move.	During construction	C
b)	<b>Only herbaceous plants</b> in-line with the pipeline may be removed. The pipe must pass <b>underneath tree roots</b> . <b>Consult a botanical specialist</b> before any tree branches or roots are cut.	During construction	C
c)	<b>Digging the trench for the sewer pipe</b> should be dug by hand and start at the bottom working up-slope opening up only a section of 1 and a half length (9m) at a time.	During construction	C
d)	The pipe should be laid so that the top of the pipe is at least <b>15cm below ground</b> surface level.	During construction	C
e)	After each 6m length of pipe is laid <b>the trench should be backfilled</b> and properly compacted to a density equal to natural ground.	During construction	C
f)	Immediately after a section of pipe is laid <b>temporary stormwater and erosion control</b> measures must be implemented eg soils curtains at 2m intervals 1m wider than the opened strip.	During construction	C
g)	<ul style="list-style-type: none"> <li>• <b>Revegetation</b> should commence the moment the civil contractor has completed the first two sections of pipe (ie 12m).</li> <li>• The <b>soil must be ameliorated</b> with organic compost worked into the soil to a depth of 15cm and recompacted.</li> <li>• <b>Geojute</b> must be laid over the soil and pegged in place.</li> <li>• Established and well rooted shade tolerant, appropriate, locally endemic, <b>herbaceous plants</b> as per the Rehabilitation Plan should be planted to ensure rapid soil cover by planting them at a density rate of 15 plants per m<sup>2</sup>.</li> <li>• <b>The rehabilitated strip should be watered daily</b> until the plants are established and have covered the soil.</li> </ul>	During construction	C

**2.16. Social Impacts – Visual and Noise**

<b>2.16.1. Public Participation</b>		<b>When</b>	<b>By whom</b>
a)	<b>Make contact with those people</b> that are Interested or Affected by the development (I & AP's) during the set up phase of the project and inform them of the construction work commencing.	During construction	C
b)	The I & AP's can be identified as those who either : <ul style="list-style-type: none"> <li>○ Live close by the project.</li> <li>○ Work close by the site.</li> <li>○ Will have their services / infrastructure affected by the project.</li> <li>○ Have a general interest in the project.</li> <li>○ The Councillor for the ward in which the construction is taking place.</li> </ul>	During construction	C
<b>2.16.2. Disruption of Infrastructure and Services</b>		<b>When</b>	<b>By whom</b>
a)	<b>Restrict contractor's activities and movement</b> to designated construction areas ie within the development footprint.	During construction	C
b)	<b>Direct members of the public</b> or other stakeholders, to the Principal Agent or Contractor, or provide a number on which they may contact the Principal Agent or Contractor.	During construction	C
c)	<b>Be polite and courteous</b> with the public or other stakeholders at all times. Failure to adhere to this requirement may result in the removal of staff from the site by the Principal Agent.	During construction	C
d)	<b>Do not disrupt access</b> for local residents without the Principal Agent's permission.	During construction	C
e)	<b>Inform neighbours</b> in writing of disruptive activities at least 24 hours beforehand. This can take place by way of leaflets placed in the postboxes giving Principal Agent's and contractors details or other methods approved by the Engineer.	During construction	C
<b>2.16.3. Noise Impacts</b>		<b>When</b>	<b>By whom</b>
a)	<b>Fit construction vehicles</b> with standard silencers prior to the beginning of construction.	During construction	C
b)	<b>Use equipment</b> that is fitted with noise reduction facilities (e.g. side flaps, silencers etc.) as per operating instructions and maintained properly during site operations.	During construction	C
c)	<b>Keep machinery and vehicles</b> in good working order for the duration of the project to	During construction	C

	minimize noise nuisance to neighbours.		
d)	<p><b>Give notice</b> of particularly noisy activities to residents adjacent to the construction site. Examples of these include :</p> <ul style="list-style-type: none"> <li>- Noise generated by jackhammers, angle-grinders, chainsaws, hammers</li> <li>- Blasting</li> <li>- Drilling</li> <li>- Dewatering pumps</li> </ul>	During construction	C
e)	<b>Restrict noisy activities</b> to day time hours and Saturdays till 13h00	During construction	C
<b>2.16.4. Visual Impacts</b>		<b>When</b>	<b>By whom</b>
a)	<b>Locate storage facilities</b> , elevated tanks and other temporary structures so that they have as little visual impact on local residents as possible.	During construction	C
b)	<b>Screen highly reflective materials</b> on site.	During construction	C
c)	<b>Point lighting</b> on the construction site downwards and away from oncoming traffic and nearby houses.	During construction	C
d)	<b>Keep the site clean</b> to minimize the visual impact.	During construction	C
<b>2.16.5. Communication with outside people</b> Regular communication between the contractor and outside people is important for the duration of the contract			
a)	The Principal Agent and Contractor are responsible for <b>ongoing communication</b> with the people that are interested/affected by the project.	During construction	C
b)	<b>Have a complaints register</b> at the site office. This should be in carbon copy format, with numbered pages. Any missing pages must be accounted for.	During construction	C
c)	People need to be <b>made aware</b> of the existence of the complaints book and methods of communication available to them.	During construction	C
d)	<p><b>Queries and complaints</b> are to be handled by:</p> <ul style="list-style-type: none"> <li>- Documenting details of such communications</li> <li>- Submitting these for inclusion in the site meeting minutes.</li> <li>- Bring issues to the Engineer's attention immediately</li> <li>- Taking remedial action as per Engineer or ECO's instruction</li> </ul>	During construction	C
<b>2.16.6 Socio-economy</b>		<b>When</b>	<b>By whom</b>



a)	<b>Employment:</b> Create temporary unskilled and skilled jobs to stimulate the local economy	During construction	C
b)	Employ local labour rather than foreign workers	During construction	C

### 2.17. Cultural Environment

Possible items of historical or archaeological value include old stone foundations, tools, clayware, jewellery, remains, fossils, e.t.c.

a)	<b>Inform all staff</b> prior to commencement of construction, what possible archaeological or historical objects of value may look like, and to notify the PA should such an item be uncovered	During construction	C
b)	Should something of this nature be uncovered, <b>stop work</b> immediately and <b>contact the AMAFA</b> Research and Professional Services Division.	During construction	C

### 2.18. Security and Safety

2.18.1. Fencing		When and by whom	
a)	<b>Demarcate potentially hazardous areas</b> such as trenches and clearly mark them.	During construction	C
2.18.2. Lighting		When and by whom	
a)	<b>Set lighting out on site</b> to provide maximum security and to enable easier policing of the site, without creating a visual nuisance to local residents or businesses. Make sure all lights shine downwards.	During construction	C
2.18.3. Risks Associated with Material on Site		When and by whom	
a)	<b>Stabilise and secure material stockpiles or stacks</b> , such as drain pipes with stakes to avoid collapse and possible injury to workers / local residents	During construction	C
b)	<b>Store flammable materials</b> as far as possible away from adjacent residents / businesses.	During construction	C
c)	<b>Firefighting equipment</b> should be present on site at all times as per OHSA.	During construction	C
d)	<b>Obstruction to driver's line of sight</b> due to stockpiles and stacked materials must be avoided, especially at intersections and sharp corners.	During construction	C
e)	<b>Do not store materials</b> in unstable or high risk areas, such as on steep slopes.	During construction	C
f)	<b>Notify all I &amp; AP's</b> in advance of any known potential risks associated with the construction site and activities on it.	During construction	C



## 5. SECTION D: ENVIRONMENTAL COMPLIANCE MONITORING

5.1. Compliance Reports		When and by whom	
a)	An ECO will be appointed to monitor and report on the compliance with the EMPr	At the outset	D
b)	The ECO will conducted two-weekly site inspections and provide feedback to the site supervisor with regard to compliant and non-compliant issues. The ECO will make recommendations of activities to be carried out by the contractor or sub-contractor to ensure they are compliant with the EMPr.	Two-weekly	ECO
c)	The ECO will attend project meetings during which the EC O will report on compliance issues	Monthly -	ECO
d)	There will be a <b>monthly compliance report</b> prepared by the ECO which will report on the environmental compliance during that month. Any aspects of non – compliance, complaints, issues or problems will be highlighted in these reports which will be forwarded to the Client, the Contractor, eThekweni Environment Planning and Climate Protection Department and the Department of Economic Development, Tourism and Environment Affairs.	Monthly	ECO
5.2. Penalty clause for non - compliance		When and by whom	
a)	<p><b>Penalties may be imposed</b> by the developer on contractors for non – compliance. These penalties would include:</p> <ul style="list-style-type: none"> <li>• The rectification of all transgressions or damage at the contractor’s expense.</li> <li>• The cessation of work until a matter has been investigated, reported on and rectified.</li> <li>• The reporting of a transgression to the relevant authorities, which may lead to their prosecution in terms of the relevant legislation.</li> <li>• The D has a schedule of fines for non-compliance during the operational phase and they are to be issued after prior warning of non-compliance was issued or issued immediately if the situation warrants it.</li> </ul>	During construction	Developer, C

**6. SECTION E: OPERATIONAL MANAGEMENT**

This portion of the EMPr has to be implemented for the duration of the existence of the Home Owner;

<b>6.1 OEMPr</b>		<b>When and by whom</b>	
a)	The <b>Operational EMP</b> is carried over from the applicant to any owner in succession to be upheld in perpetuity.	Ongoing –	Applicant
b)	The OEMPr is a living document and <b>must be kept current</b> by having an environmental consultant review it from time to time.	Ongoing -	Landowner
<b>6.2 Vegetation management</b>		<b>When and by whom</b>	
a)	The landowner will <b>monitor the NUCS</b> for the infestation of alien invader plants and commence immediately to bring it under control.	Ongoing	Landowner
<b>6.3 Stormwater Management</b>		<b>When and by whom</b>	
a)	Landowner is to ensure the <b>storm water management system</b> is maintained and able to cope with the storm water generated.	Ongoing	Landowner
b)	Landowner is to ensure any <b>signs of erosion</b> is immediately brought under control and revegetated after the source of the erosion has been dealt with.	Ongoing	Landowner
c)	<b>Maintain the vegetative cover</b> to ensure there is no exposed soil anywhere in the development.	Ongoing	Landowner
d)	Where vegetation cannot be used to cover the soil <b>other forms of mulch</b> should be used to protect the soil from the elements.	Ongoing	Landowner
e)	BC is to ensure that <b>alien vegetation</b> does not become established in the rehabilitated areas.	Ongoing	Landowner
<b>6.4 Erosion control during operation</b>		<b>When and by whom</b>	
a)	<b>Maintain the vegetative cover</b> to make erosion unlikely	Ongoing	Landowner
b)	Act immediately should any sign of erosion becomes evident and install active measures to curb further erosion from occurring.	Ongoing	Landowner
c)	<b>Identify the cause of the erosion</b> and apply stormwater divergence measures to diffuse the stormwater flow.	Ongoing	Landowner
<b>6.5 Solid waste management during operation</b>		<b>When and by whom</b>	
a)	Install a <b>compost making machine and worm farm</b> to consume the organic waste generated from which the compost generated can be used for the maintenance of the grounds	During operation	Landowner
<b>6.6 Conservation area</b>		<b>When and by whom</b>	
a)	Landowner is to <b>maintain the NUCS area</b> with the least amount of human interference.	During operation	Landowner

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b)	<b>Restore</b> it by using appropriate local indigenous landscaping.	During operation	Landowner
c)	Ensure the <b>highest possible diversity of species</b> in the landscape – with a minimum of 75 species.	During operation	Landowner

## **Appendix G: Other information**