EXPANSION OF AGRICULTURE ON FALCON RIDGE, PORTION 274 OF STRATHSOMERS ESTATE NO. 42 IN THE SUNDAYS RIVER VALLEY MUNICIPALITY

RECONNAISSANCE SOIL SURVEY REPORT

May 2012

DRAFT REPORT

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1 INTRODUCTION

During April 2012 the authors of this report were requested by Sandy Wren, Public Process Consultants, PO Box 27688, Greenacres 6057, Port Elizabeth, to do a reconnaissance soil survey of the farm Falcon Ridge, Portion 274 of Strathsomers Estate No. 42 in the Sundays River Valley Municipality on behalf of the owner Mr. Hannes Joubert.

The following information was included in the Background Information Document, dated April 2012, that was received from Public Process Consultants:

The applicant (*Habata Boerdery*) is proposing the expansion of the existing agricultural activities on Falcon Ridge, Portion 274 Strathsomers Estate No. 42 (671 ha in extent), an established farm in the Sundays River Valley Municipality. The parcel of land proposed for development is approximately 31 hectares in extent and is currently zoned for *Agriculture*. This parcel of land forms part of a farm that is currently under cultivation and is producing a variety of vegetables for the local and international markets. In addition to the cultivation of crops, the applicant intends to construct a water storage dam with a storage capacity of approximately 15 000 cubic metres. The development of the parcel of land will allow for the expansion of the current farming operations on Falcon Ridge.

Environmental authorisation in terms of Section 22 of the Environment Conservation Act, Act 73 of 1989, for the agricultural development of the farm was granted in March 2004 (EC 06/2d/183-03). Clearing of the parcel of land which is currently under assessment was included in this authorisation. However, the timeframes stipulated in the authorisation have subsequently lapsed. Therefore, in order to be able to develop the proposed parcel of land, application for environmental authorisation must again be obtained.

In terms of the NEMA EIA Regulations, 2010: GN R543, 544 and 546, promulgated under Chapter 5 of the National Environmental Management Act (Act 107 of 1998) ("NEMA"), and published in Government Gazette 33306 on 18 June 2010; a Basic Assessment is required for this project. The applicant has appointed Public Process Consultants as the independent Environmental Assessment Practitioner to undertake the Basic Assessment including public participation for this application.

The site is located in the Sundays River Valley Municipal area and can be accessed from the gravel road which extends between Kirkwood and Enon/Bersheba. The nearest town is Moses Mabida Settlement / Bontrug, which lies approximately 2 kilometres north west of the entrance to the site. The Addo Elephant National Park is located approximately 4 kilometres north of the site. The locality map (**Figure 1**) attached provides an overview of the location of the property under assessment.

The applicant (*Habata Boerdery*) operates an existing agricultural farming operation on Portion 274 Strathsomers Estate No. 42 (671 ha in extent) and intends to expand the existing operation by including an additional 31 hectares of land for the cultivation of crops (vegetables at first and citrus later) as well as the construction of a storage dam with a storage capacity of approximately 15 000 cubic metres. Because the proposed parcel of land falls within an established farm it can readily be tied into the access and irrigation infrastructure of the existing farming operation.

The proposed development will entail the following activities on the site:

- Clearing of vegetation from the parcel of land proposed for agriculture (approximately 30 ha)
- Levelling and landscaping to provide runoff control and to facilitate the planting of crops / orchards
- Construction of a balancing dam (15 000 cubic metres storage capacity, approximately 1 ha in extent)
- Upgrading and re-alignment of the unpaved internal roads to provide access to the proposed parcel of land
- Installation of a drip irrigation system

Once the necessary infrastructure has been established, the lands will be used for the rotational cultivation of crops such as melons, cabbages, butternuts etc. and at a later stage may be used for citrus orchards. The applicant proposes to use existing nearby infrastructure as offices and service buildings, thus negating the need for any associated services infrastructure such as water, electricity and, sanitation, other than the water required for the irrigation of the crops. No storage of materials or equipment is proposed to take place on the area under assessment.

At present Public Process Consultants are busy with an environmental impact study for deforestation of approximately 31 ha of the farm. The cleared land will be used for the production of *inter alia* seedless watermelons under drip irrigation.

In support of the application Public Process Consultants require a report in terms of the suitability of the soils in that part of the farm that will be used for future agricultural production purposes. If the soils are not suitable for agricultural production the Department of Environmental Affairs will not necessarily approve the request for deforestation.

Public Process Consultants do not require a detailed analysis of the total production area. The only requirement is the determination whether the soils are generally suitable for the production of the intended crops. If necessary the owner will in future be responsible for more detailed soil studies.

2 TERMS OF REFERENCE

The initial terms of reference for the reconnaissance soil survey requested by Public Process Consultants, on behalf of the applicant for the application for clearing of the natural vegetation for agricultural purposes included the following:

- Test pits spread over the affected section of the farm (approximately 31 hectares) considered for crop production.
- Soil analyses of soil samples from the test pits (following discussion with applicant this is not required at this stage of the soil survey).
- A report and soil map with conclusions based on the analysis of *inter alia*:
    - The suitability of the soils on the affected area for the proposed crops.
    - Specific limitations that the soils may have on agriculture and crop production.
    - Specific precautionary measures required for the production of crops on the soils.

Following discussions with the Applicant (owner) and Public Process Consultants the following terms of reference were finalized:

- A reconnaissance soil survey of the affected area (approximately 31 ha) to determine the inherent properties, mainly physical and morphological, of the soils based on observations made in 11 randomly spaced soil pits.
- Compilation of a soils map on a suitable scale (e.g. 1 : 10 000) to describe the natural distribution of the soils.
- Description of the soils in the different soil types in terms of their physical and morphological properties.
- To identify the more important soil physical and/or morphological limitations of the soil types. No chemical soil analyses will be required at this stage.
- Evaluation of the relative suitability of the different soil types in terms of irrigated watermelons and cabbage as well as citrus.

3 FIELD SOIL SURVEY AND THE RECONNAISACE SOIL MAP

Due to the nature of the proposed development a detail soil survey at this stage was considered as an “over-kill”. It was therefore decided that a reconnaissance survey would be sufficient to identify

the agricultural suitability of the soils for cultivation of at first of vegetables (e.g. watermelons) later citrus.

In consultation with the owner, Mr. Hannes Joubert, a total of 11 soil pits were randomly mechanically excavated to a depth of approximately 1 200 mm or down to any restricting subsoil limitation (see **Annexure 3: Figure 1** and **Figure 2)**. The latitude and longitude of the excavated soils profile pits were determined by GPS during the field soil survey.

During the field soil survey the individual soil profiles were investigated and the important soil properties (e.g. texture, colour, mottling, structure, coarse fragments, hardpans, horizon depths, etc.) were described following standard procedures as prescribed by the Institute for Soil, Climate and Water, Pretoria. Based on recognizable, as well as inferred properties, the soils were classified according to the South African soil classification system (Soil Classification Working Group, 1991) into soil forms and soil families.

This system is based on the recognition of diagnostic soil horizons and materials. Soil forms are defined in terms of the type and vertical sequence of diagnostic horizons or materials. For communication, soil forms are given locality names, e.g. Brandvlei, and abbreviated to a two-letter symbol, e.g. Br. Soil forms are subdivided into soil families using properties that are not used in the definition of diagnostic horizons or materials. Reference to a soil family is by combining the soil form abbreviation and a four-digit symbol, e.g. Br 1000 is family number 1000 of the Augrabies soil form. In **Table 1** all the soil forms and families described during the reconnaissance survey are listed. Soil forms and families listed alphabetically according to soil form abbreviation symbol.

Table 1 Soil forms and families listed alphabetically according to soil form abbreviation symbol

Abbre-viation	**Soil form and vertical sequence of diagnostic horizons and/or materials**
Ad	**ADDO FORM**
	Orthic A
	Neocarbonate B
	Soft carbonate horizon
Transitional soil form: No soil families listed	
Br	**BRANDVLEI FORM**
	Orthic A
	Soft carbonate horizon

Soil families
1000 No signs of wetness in carbonate horizon

Hu **HUTTON FORM**

Orthic A
Red apedal B
Unspecified material

Soil families
3000 Eutrophic B1 horizon
3200 Luvic B1 horizon

Et **ETOSHA FORM**

Orthic A
Neocutanic B
Soft carbonate horizon

Transitional soil form: No soil families listed

Gm **GAMOEP FORM**

Orthic A
Neocutanic B
Hardpan carbonate horizon

Transitional soil form: No soil families listed

Py **PLOOYSBURG FORM**

Orthic A
Red apedal B
Hardpan carbonate horizon

Soil families
2000 Luvic B1 horizon

Va **VALSRIVIER FORM**

Orthic A
Pedocutanic B
Unconsolidated material without signs of wetness

Soil families
1000 A horizon not bleached
1100 Non-red B horizon
1110 Subangular/fine angular B horizon
1112 Calcareous B or upper C horizon
1120 Medium/coarse angular B horizon
1122 Calcareous B or upper C horizon
1200 Red B horizon
1210 Subangular/fine angular B horizon
1212 Calcareous B or upper C horizon
2000 A horizon bleached
2200 Red B horizon
2210 Subangular/fine angular B horizon
2212 Calcareous B or upper C horizon
3220 Medium/coarse angular B horizon
2222 Calcareous B or upper C horizon

In addition to the standard description the individual profiles were coded in detail according to a system used for detail soil survey in the fruit and wine industry in the Western Cape (Lambrechts *et al*. 1978; **Note**: In **Annexure 2** the symbols used during this survey are explained). The coded soil information was used to subdivide the soil families on an *ad hoc* basis into **soil types** using mainly subsoil properties and soil depth. Soil types are identified by means of a symbol that consists of the abbreviation for the soil form followed by an Arabic number (e.g. Br 1). The number suffix has no intrinsic meaning. It only serves as an identifier for different soil types that consist of soils belonging to the same soil form, but differ in one or more important soil properties. In **Table 2** the soil types that were defined are briefly described in terms of soil form, diagnostic horizons, family criteria, additional features and effective depth before and after amelioration of physical limitations.

Table 2: Brief description of soil types on Falcon Ridge, Portion 274 of Strathmore Estate No. 42

Explanation of superscripts

1) Effective depth before mechanical amelioration of physical limitations
2) Effective depth after mechanical amelioration of physical limitations

Brandvlei form soils: *Soils with an Orthic A directly on a soft carbonate B horizon*

Soil type symbol:	**Ag 1**
Soil family	Br 1000
Family criteria:	
Signs of wetness in the soft carbonate B horizon	No signs of wetness
Additional features:	
Clay content topsoil	10-15 %
Coarse fragments in A and soft carbonate B horizons	Non-gravelly
Depth to soft carbonate B horizon	≈ 30 cm
Effective depth: (cm)	≈30[1)]; 75+[2)]

Hutton form soils: *Soils with an Orthic A- on a Red apedal B horizon on unspecified material*

Soil type symbol:	**Hu 1**
Soil family:	Hu 3200
Family criteria:	
Degree of leaching of upper B (B 1) horizon	Poorly leached (eutrophic)
Clay increase from A to B 1 horizon	Luvic
Additional features:	
Clay content topsoil	15-20 %
Coarse fragments in topsoil	Common to abundant gravel and stones
Depth and type of unspecified material	Not reached
Effective depth: (cm)	≈40[1)]; 75[2)]

Plooysburg form soils: *Soils with an Orthic A- on a Red apedal B horizon on a hardpan carbonate horizon*

Soil type symbol:	**Py 1**	**Py 2**
Soil family:	Py 2000	Py 2000
Family criteria: Clay increase from A to B 1 horizon	Luvic	Luvic
Additional features:		
Clay content topsoil	15-20 %	10-15 %

Coarse fragments in topsoil	Rare stones	Non-gravelly
Depth of hardpan carbonate horizon	≈60 cm	30-45 cm
Effective depth: (cm)	≈20[1)]; 75[2)] depending on hardness of hardpan carbonate horizon	≈10[1)]; 75[2)] depending on hardness of hardpan carbonate horizon

Valsrivier form soils: *Soils with an Orthic A- on a Pedocutanic B horizon on Unconsolidated material without signs of wetness*

Soil type symbol:	**Va 1**	**Va 2**	**Va 3**
Soil family:	Va 111/22	Va 1212	Va 221/22
Family criteria:			
Bleaching of A horizon	Non-bleached	Non-bleached	Bleached
Colour of B horizon	Non-red	Red	Re
Structure of B horizon	Fine to medium subangular blocky	Subangular to fine angular blocky	Fine to medium subangular blocky
Presence of free lime in B or upper C horizon	Calcareous	Calcareous	Calcareous
Additional features:			
Clay content topsoil	10-15 %	10-15 %	≈10 %
Coarse fragments in topsoil	Non-gravelly	Non-gravelly	Non-gravelly
Depth and type of unspecified material	≈50 cm; red blocky clay tending to slightly hard carbonate horizon	50-70 cm; blocky clay tending slightly hard carbonate horizon	≈60 cm; blocky clay tending slightly hard carbonate horizon
Effective depth: (cm)	≈10[1)]; 75[2)]	10-20 [1)]; 50-70[2)]	≈20[1)]; ≈60[2)] depending on denseness of subsoil material

In **Annexure 1: Table 2** the soil types are listed alphanumerical according to the soil type symbol together with all the profiles and codes in the different soil types. In **Annexure 3: Figure 1** and **Figure 2** the positions of the 11 soil profiles are plotted together with the soil type symbol.

Certain properties (e.g. diagnostic horizons or materials) of the soil types are specified in **Table 2**. Additional properties can be abstracted from the:

i) properties of diagnostic horizons and materials (Soil Classification Working Group, 1991),

ii) differentiating family criteria (Soil Classification Working Group, 1991), and

iii) additional information specified in the soil code (Lambrechts *et al*. 1978; refer to **Annexure 2**.

A reconnaissance soil map of the farm was compiled using the soil map symbols specified in **Annexure 1: Table 2** (see **Annexure 2: Figure 3** and **Figure 4**). An image with contour lines supplied by Public Process Consulting of the survey area was used as background map. In addition to the soil map symbols and boundaries, the positions of the soil pits are also indicated on the map together with a line scale.

In addition to the soil type properties the characteristics of individual soil pits in a soil map unit were used for interpretation of the suitability of the soils as indicated on the maps and the attached tables.

4 SUITABILITY OF SOIL TYPES FOR CROP PRODUCTION

The most common limitations of the soils on Falcon Ridge, Portion of Strathsomers Estate No. 42, are the relatively high topsoil clay content, dense subsoil clay layers, hardpan layers as well as free lime at various depths through the profile.

During the field soil survey the individual soil pits were evaluated by the soil surveyor in terms of its general suitability as well as the suitability for the commercial production of perennial crops, e.g. citrus, that is adapted to the climatic conditions in the Addo/Kirkwood region,. These ratings for citrus should be comparable to that of annual crops; e.g. irrigated watermelons and cabbage. The suitability rating ranges from 1 to 10, with 1 the lowest and 10 equal to the highest or best suitability. For both annual and perennial crops the suitability rating refers to vigour and potential production potential without considering product quality. Although fairly subjective, suitability ratings by an experienced soil scientist with many years of field experience are a handy tool to group soil types into production potential classes and for land use recommendations. The ratings can be interpreted according to the guidelines in **Table 3**.

Table 3 Interpretation of suitability ratings

Rating	General suitability	
≤2	Very low	Not recommended (NR)
>2 - ≤3	Low	
>3 - ≤4	Low-medium	Marginally recommended (MR)
>4 - ≤5	Medium	Conditionally recommended (CR)
>5 - ≤6	Medium-high	Recommended (RE)
>6 - ≤8	High	Highly recommended (HR)
>8	Very high	

For annual crops the variation in the suitability rating of different soil profiles and soil types were fairly small. The main reason for this small variation is the relatively shallow effective soil depth (*viz*. 30 - 40 cm) required by these crops for optimum production under irrigated conditions. Most of the soils were rated as medium to medium-highly suitable for watermelons.

The suitability ratings for irrigated citrus largely depend on limiting soil properties/features such as dense subsoil clay layers, free lime in the subsoil, and high clay content in upper subsoil. These limitations will be discussed in the following chapter.

The general suitability ratings on a profile basis are listed in **Annexure 1: Table 2** and the average rating for each soil type and map units in **Table 4**. The average suitability rating for soil types and map units was calculated from the individual profile ratings. In **Table 4** the recommendations for watermelons (annual crops) and citrus are listed.

Table 4 Average suitability rating of map units and soil types for the production of irrigated citrus and watermelons (see **Table 3** for abbreviations)

Map unit			Soil type		Recommendation of map units after amelioration	
Symbol	**Area (ha)**	**Suitability rating**	**Symbol**	**Suitabilty rating**	**Citrus**	**Watermelons**
Brandvlei form: *Soils with an Orthic A- on a Soft carbonate horizon*						
Br	2.40	5.5	Br 1	5.5	RE	RE
Hutton form: *Soils with an Orthic A- on a Red apedal B on Unspecified material*						
Hu	1.16	6.5	Hu 1	6.5	HR	HR
Plooysburg form: *Soils with an Orthic A- on a Red apedal B on a Hardpan carbonate horizon*						
Py	8.95	4.9	Py 1	5.8	RE	HR
			Py 2	4.5	CR	RE
Valsrivier form: *Soils with an Orthic A- on a Pedocutanic B horizon on Unconsolidated material without signs of wetness*						
Va	13.09	5.0	Va 1	4.8	CR	RE
			Va 2	5.3	RE	RE
			Va 3	4.5	CR	RE

Total (ha)	**25.59**

Based on the average suitability rating (see **Table 4**) all the map units and soil types can be recommended for irrigated vegetable production that may include watermelon and cabbage. Except map units Py 2, Va 1 and Va 2 with a conditional recommendation for citrus (due to the underlying clay horizon or soft carbonate horizon) all the other map unit can be recommended for citrus. The limitations in soil types Py 2, Va 1 and Va 2 (underlying clay horizon or soft carbonate horizon), however, are low enough that these soil types can successfully be developed for citrus with correct amelioration measures and selection of high pH adapted rootstocks. All the soil types and map units can be recommended for vegetable crops (watermelon and cabbage).

In **Annexure 3: Figure 5** the recommendation for the production of citrus under irrigation on the farm Falcon Ridge, Portion 274 of Strathmore Estate No. 42, is colour coded per map unit

5 SOIL LIMITATIONS

All the profiles investigated during the field survey have one or more soil physical and/or morphological properties that will negatively effect root development, plant growth and production potential. In **Table 5** the most important limitations are listed per soil type.

Table 5 Soil limitations of map units

Notes:

i) The following classes and abbreviations are used to qualify the physical soil limitations of the map units:

Limitation class	Abbreviation
None	Non
Low	Low
Moderate	Mod
Severe	Sev
Variable	Var

ii) The depth to subsoil limitations is specified in centimetres (cm) following the limitation class

Map unit	High clay content in topsoil	High alkalinity due to free lime			Dense or hard subsoil layers	
		Topsoil	Upper subsoil	Lower subsoil	Clay layer	Hardpan carbonate horizon
Brandvlei form: *Soils with an Orthic A- on a Soft carbonate horizon*						
Br	Low	Mod	Sev	Sev	Non	Low ≈30
Hutton form: *Soils with an Orthic A- on a Red apedal B on Unspecified material*						
Hu	Low-Mod	Non	Non	Non	Low	Non
Plooysburg form: *Soils with an Orthic A- on a Red apedal B on a Hardpan carbonate horizon*						
Py	Low-Mod	Non	Non	Sev	Low	Sev 30-60
Valsrivier form: *Soils with an Orthic A- on a Pedocutanic B horizon on Unconsolidated material without signs of wetness*						
Va	Low	Non	Non	Mod-Sev	Mod-Sev 10-20	Low-Mod 50-75

The individual limitations will be discussed in the following paragraphs.

5.1 High clay content in topsoil

All the profiles investigated have a clay content in the topsoil that range from a low of around 10 % to as high as 20 %. Crops with a weak root system and germination of annual crops might be negatively affected at the higher clay levels.

Depending on chemical nature in terms of magnesium and sodium saturation, some of these soils, especially the Valsrivier soils, might tend to set hard on drying and could develop a surface crust. These negative aspects could be ameliorated by judicious application of gypsum and mulching.

5.2 High alkalinity

Free lime in the subsoil associated with soft and hardpan carbonate horizons or deep subsoil horizons that tend to soft carbonate material (e.g. in the Valsrivier soils) may pose a problem for crops sensitive to alkaline pH conditions. Nutritional problems such as low phosphorous availability and trace element deficiencies (especially iron, zinc, manganese and copper) may occur if the calcareous material is moved to the surface during deep tillage (deep ploughing and even ripping).

High pH sensitive crops might experience these nutritional problems especially in map unit Br 1 with a shallow soft carbonate subsoil and to a lesser extent in Py 2 and even in the Valsrivier soils.

5.3 Dense subsoil clay pans

Subsoil clay layers are a moderate to severe depth limitation in the Valsrivier map unit with a shallow pedocutanic B horizon at a depth of 10 - 20 cm. Because the structure of the pedocutanic B is mostly sub-angular to fine angular the limitation is less severe than in soil types Va 1 and Va 2 in which the structure tends to medium to coarse angular blocky.

The limitation on root development due to an increase in clay from the top- to the subsoil in map units with a luvic B horizon (e.g. Hu and Py) was rated as low.

In the Valsrivier map unit the clear transition between the top- and upper subsoil with significantly higher clay content, stronger structure and higher consistence, may result is free water accumulation in the overlying, slightly lighter textured horizon or material during the rainy season or as a result of over-irrigation. Under conditions of water saturation, reduction and loss of iron can lead to the development of pale coloured (bleached) topsoil in the dry state. Under the present conditions the Valsrivier profiles that were described during the field soil survey, however, all were describe as having non-bleached topsoils. This might be an indication that permeability of the pedocutanic B horizons is fairly high and that judicious irrigation should not lead to over saturation of the topsoil.

In addition to the physical limitation of the clay pan on root development, the clay itself could be physically unstable (disperse in non-saline water) when the concentration of exchangeable magnesium and sodium are high relative to calcium. This type of clay is less suitable for mechanical loosening and will re-compact over time as a result of the dispersive nature of the clay particles.

5.4 Cemented hardpans

Calcium carbonate cemented hardpans (and silica cemented dorbank in profile 9 dorbank) occur as a diagnostic horizon in the Plooysburg soil form below the red apedal B horizon. In the Valsrivier soils the deeper subsoil horizons grade to a weakly cemented calcareous hardpan (hk 1).

Due to its dense and hard nature the hardpan limits root development and could restrict internal permeability. Although the extremely hard variants will be difficult to loosen, ripping with a deep tine implement is commonly used to break the hardpan to improve the suitability of these soils. The loosened material will be very gravelly and stony but is usually considered as a good rooting medium and once loosened the broken pan will remain open

and porous.

5.5 Wetness

During the reconnaissance soil survey no soils were encountered with any signs of wetness based on the soil morphology.

5.6 Other limitations

Other soil properties that might be considered as a limitation for crop production could be hard-setting and crusting in the topsoil. Due to the non-bleached nature of all the topsoils investigated, these limitations are limited to small, restricted areas).

6 AMELIORATION MEASURES

The applicant (*Habata Boerdery*) intends to use the additional 31 ha of cleared lands on Falcon Ridge for the cultivation of crops; initially vegetables and citrus at a later stage.

For annual crops no specific physical soil amelioration measures are required accept ridging in the case of soils with shallow subsoil clay layers and levelling and landscaping the site to provide runoff control and to facilitate the planting of crops, *inter alia* watermelons and cabbage.

The applicant intends to plant perennial crops, e.g. citrus, at a later stage. The following amelioration measures could be used to improve the soils for deep rooted crops; e.g. citrus:

- **Ridging**
- **Deep soil tillage:** Shift ploughing and/or
  Ripping

In **Table 6** the recommended physical soil amelioration measures for deep rooted crops are listed per soil type.

Table 6 Recommended physical soil amelioration measures for deep rooted crops

Notes:

i) The following classes are used to qualify the necessity for a particular amelioration measure:

Necessity	Symbol
Not necessary	(No symbol)
Recommended	Recom
Essential	Essen

ii) The following depth classes are used with the recommendations for shift ploughing or ripping:xxx

Depth class	Symbol
Shallow	SH
Moderately deep	MD
Deep	DE
Very deep	VD

Map unit	Amelioration measures

	Ridging	Deep soil tillage	
		Shift plough (depth)	Ripping (depth)
Brandvlei form: *Soils with an Orthic A- on a Soft carbonate horizon*			
Br			Essen DE
Hutton form: *Soils with an Orthic A- on a Red apedal B on Unspecified material*			
Hu		Recom DE	
Plooysburg form: *Soils with an Orthic A- on a Red apedal B on a Hardpan carbonate horizon*			
Py		Recom MD	Essen DE
Valsrivier form: *Soils with an Orthic A- on a Pedocutanic B horizon on Unconsolidated material without signs of wetness*			
Va	Recom		Essen DE

6 RECOMMENDATION

According to the reconnaissance survey, all the map units and soil types (100 % of the farm) are suitable for annual watermelon and cabbage production under irrigation.

Except soil types Py 2, Va 1 and Va 2 with a conditional recommendation for citrus (due to the underlying clay horizon or soft carbonate horizon) all the other soil types can be recommended for citrus. The limitations in soil types Py 2, Va 1 and Va 2 (underlying clay horizon or soft carbonate horizon), however, are low enough that these soil types can successfully be developed for citrus with correct amelioration measures and selection of high pH adapted rootstocks. All then map units could therefore be used for citrus.

Provided that there is sufficient irrigation water available, the total 31 ha could be deforested for the production of watermelons and cabbage, and with the correct soil amelioration measures for the production of citrus.

7 REFERENCES

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Annexure 1
Table 1

Coordinates of soil profiles - Falcon Ridge, Portion 274 of Strathmore Estate No. 42

Pit number	Coordinates					
	South			East		
	°	'	"	°	'	"
1	-33	25	19.4	25	30	35.4
2	-33	25	24.3	25	30	36.2
3	-33	25	31.6	25	30	38.9
4	-33	25	36.1	25	30	37.0
5	-33	25	38.8	25	30	29.1
6	-33	25	38.7	25	30	22.6
7	-33	25	33.9	25	30	31.5
8	-33	25	33.3	25	30	27.1
9	-33	25	44.9	25	30	32.5
10	-33	25	31.5	25	30	35.5
11	-33	25	24.5	25	30.0	33.0

Annexure 1
Table 2

Map units and soil types with complete list of profiles and soil codes - Falcon Ridge, Portion 274 of Strathmore Estate No. 42

Map unit	Soil type	Pit #	Depth codes	Form & Family	Subsoil limitations/properties					Topsoil properties			Transi-tional form	Suita-bility rating
					Upper	Middle	Lower 1	Lower 2	Coarse fragments	Coarse fragments	Sand grade	Clay class		
Brandvlei form: *Soils with an Orthic A- on a Soft carbonate horizon*														
Br	Br 1	3	3	Br 1000	sk/hk1						fi	3	Ad	5.5
Hutton form: *Soils with an Orthic A- on a Red apedal B on Unspecified material*														
Hu	Hu 1	1	4 4	Hu 3200	re/vr				1f+2g+4k	1f+2g+3k	fi	4	Va red	6.5
Plooysburg form: *Soils with an Orthic A- on a Red apedal B on a Hardpan carbonate horizon*														
Py	Py 1	2	2 6 2	Py 2000	re	hk1			2k		fi	4	Locally Hu	5.5-6.0
	Py 2	8	1 4/5	Py 2000	re	hk2/3					fi	3	Gm	4.5
	Py 2	11	1 3	Py 2000	re	hk2/3					fi	3		4.5
Valsrivier form: *Soils with an Orthic A- on a Pedocutanic B horizon on Unconsolidated material without signs of wetness*														
Va	Va 1	9	1 5	Va 111/22	vp	vp/vr/hk1					fi	3		4.5-5.0
	Va 2	4	2 6 7 8	Va 1212	vp/vr	vr	vr/ca	hk1/db			fi	3		5.0-5.5
	Va 2	5	2 6	Va 1212	vr/ne	vr/hk1/ca					fi	3	Et	5.5
	Va 2	6	2 6	Va 1212	vr/ne	vr/hk/ca					fi	3	Et	5.5
	Va 2	7	1 3 5	Va 1212	vr/vp	vr	vr/hk1				fi	3		4.5-5.0
	Va 3	10	2 6	Va 221/22	vr/vp	vp/vr/hk1					fi	2/3		4.5

Annexure 2

Structure of soil code and explanation of symbols

1 Structure of soil code

The code consists of two series of letter-number symbols, separated by a horizontal line, arranged in the following order:

Position to horizontal line	For description refer to section
Above the line	
Depth of horizons and/or materials	2.1
Soil form	2.2
Soil family	2.3
Subsoil limitations or properties	2.4
Below the line	
Coarse fragments in the topsoil horizon and outcrops	3.1
Texture of topsoil horizon and underlying E or apedal B1	3.2
Soil water conditions	3.3

In a Microsoft Word or Excel table the letter-number symbols can be written in a single line with the “above the line” letter-number symbols followed by the “below the line” letter-number symbols.

In uncultivated soils the term topsoil horizon refers to the natural A horizon, while for cultivated soils it refers to the upper 150 - 300 mm of the soil profile affected by tillage.

2 Classes and symbols for properties above the line

2.1 Horizon and/or effective depths

The depths of all the diagnostic as well as non-diagnostic horizons and/or materials encountered in a profile are coded with a number symbol in front of the soil form symbol. Depth classes and symbols used are:

Depth class (mm)			Symbol	Depth class (mm)			Symbol
0	.-	150	1	750	-	950	7
150	-	250	2	950	-	1 150	8
250	-	350	3	1 150	-	1 350	9
350	-	450	4	1 350	-	1 550	0
450	-	550	5	>1 550			no symbol
550	-	750	6				

2.2 Soil Form

Soil forms and abbreviations used in the soil code are explained by the Soil Classification Working Group (1991). For example Va is the abbreviation for a Valsrivier form soil.

2.3 Soil family

Soil families are identified by a locality name or coded by means of a four-digit symbol (Soil Classification Working Group, 1991). For example 1112 is the four-digit symbol for the Luckhoff soil family of the Valsrivier soil form. In the code the four-digit symbol is used directly after the soil form abbreviation symbol; e.g. Va 1112.

2.4 Subsoil limitations and properties

The more important materials that may affect root penetration and water infiltration to a greater or lesser extent are one or more of the following:

- **Hardpans; irreversibly cemented**

  This is soil material cemented by one or more compounds to such an extent that it does not soften in water.

  db - Dorbank: cemented by silica. Calcium carbonate and iron oxide are permissible as secondary cementing agents. It meets the requirements of a diagnostic dorbank horizon.

  hk - Calcrete: cemented by calcium and/or magnesium carbonate. It meets the requirements of a hardpan carbonate horizon.

  The degree of cementation is distinguished in terms of the intensity and continuity of cementation:

  1 - **Hard**: Numerous vertical fracture planes, or vesicular; moderate degree of cementation; more than 25% of the layer is accessible and penetrable to roots; sufficient fracture planes for free drainage through the pan under normal conditions.

  2 - **Very hard**: Platy and/or massive with occasional vertical fracture planes; moderate to high degree of cementation; predominantly impenetrable to roots; locally (<25% over a horizontal section) soft enough for root penetration; sporadic accumulation of free water on the pan.

  3 - **Extremely hard**: Massive and/or continuously platy with no fracture planes in which root development can occur; under normal conditions impermeable to water; regular accumulation of free water on the pan.

  Example: A hardpan cemented primarily by iron with vertical cracks approximately 10 mm to 15 mm apart is coded by the symbol **hp2**.

- **Moderate to strongly structured, unconsolidated material without signs of wetness**

  vp - Blocky clay: a non-gleyed soil material with a non-uniform non-red colour and a moderate or stronger structure when moist. It largely meets the requirements of a pedocutanic B horizon

  vr - Blocky clay: a non-gleyed soil material with a uniform red colour and a moderate or stronger structure when moist. It largely meets the requirements of a red structured B horizon

- **Weaker than moderately structured, unconsolidated material without signs of wetness**

  ne - Non-calcareous unconsolidated material with signs of soil formation, e.g. aggregation, clay illuviation and/or disappearance of original stratification. It largely meets the requirements of a neocutanic B horizon. Its colour must not qualify for diagnostic red or yellow-brown apedal, although red and yellow-brown variants occur.

  re - Red, non-calcareous soil material with a structure weaker than moderate blocky or prismatic. It largely meets the requirements of a red apedal B horizon.

  sk - Calcareous material which largely meets the requirements of a soft carbonate horizon.

- **Predominantly gravelly, stony, or bouldery diagnostic and non-diagnostic horizons or materials**

  Coarse fragments (> 2 mm) can occur in varying quantities either in a part of or throughout a horizon or layer. Such coarse material can seriously affect root development, water infiltration and water holding capacity and must be indicated in the soil code in terms of **size** and **quantity** (volume percentage).

The predominant size classes and symbols for coarse fragments used in the code are as follows:

Class name	Size	Symbol
Fine gravel	2 - 25 mm	f
Coarse gravel	25 – 75 mm	g
Stones	75 - 250 mm	k

The volume percent of coarse fragment classes is qualified by the following numerals:

Volume %	Symbol	Volume %	Symbol
0-10	1	30-40	4
10-20	2	40-50	5
20-30	3	50-60	6

If more than one size class and/or type of coarse material occur in a horizon, it must be indicated in the code (e.g. **3f + 2g**). If the coarse fragments are poorly sorted and range in size from fine gravel to stones, a forward slash is used to separate the size class limit symbols (e.g. **4f/g**).

- **Additional properties in diagnostic and non-diagnostic horizons or materials**

In some diagnostic as well as non-diagnostic horizons or materials, properties occur that are important for soil use, but that cannot be inferred from the definition of such horizons or materials. The following additional properties are recognized in the Western Cape Province.

ca - An indication of the presence of free lime in horizon.

3 Classes and symbols for properties below the line

3.1 Coarse fragments in topsoil horizon and outcrops

The presence of coarse fragments (>2 mm) in the topsoil horizon or rock outcrops has an important effect on several physical (e.g. water holding capacity) and chemical (e.g. exchangeable cation content) properties, as well as on tillage and landuse.

The size and quantity of coarse fragments in the topsoil horizon (or plough layer) are indicated with the same symbols as those used to describe such materials as **Subsoil limitations or properties**.

3.2 Texture of topsoil and directly underlying E or apedal B1 horizon

The texture is coded in terms of the:

- sand grade for soils with less than 20% clay and
- clay content (percentage).

Classes and abbreviations for sand grade and clay content are the following:

1	Sand grade	2	Symbol
3	Coarse	4	Co
5	Medium	6	Me
7	Fine	8	Fi

Clay content	Symbol
0 - 5	1
5 – 10	2
10 – 15	3
15 – 20	4
20 – 35	5

Examples:

- A topsoil developed from with 13 % clay and fine sand grade is coded by the symbol **fi 3**.
- In cases where the clay content is on or near the boundary between two classes, e.g. 11 %, it should be coded as **fi 2/3** respectively.

3.3 Soil water conditions

A wetness classification was developed based on the number of days and depth of saturation with water. Profile morphology is used to determine the depth of water saturation and the maximum height of signs of hydromorphy is used as depth limit. Climate, locality, aspect, vegetation and water conditions during the survey as well as profile morphology are used to evaluate the duration of water saturation. The expected number of days of saturation during the rainy season in "wet" years is used to determine duration. It is essential for free water to occur in the profile continuously for at least seven (7) days. However, the total number of days with free water need not be continuous.

Diagram for the determination of wetness classes

Depth range of upper boundary of free water surface (mm)	Wetness symbol			
0 - 300	6	7	8	9
300- 700	3	6	7	8
700 – 1 200	2	3	4	5
> 1 500	1			

0 30 90 180 365

Cumulative number of days with free water

Note: The numeral 1 is not used in the code. According to **Annexure 1: Table 2** none of the profiles described showed any signs of wetness within a depth of 1 5000 mm.

4 Examples of fully coded profile descriptions

Although the sequential position of the symbols for certain components used in the soil code is fixed, the sequence of non-diagnostic subsoil limitations and their respective depth symbols can be coded in more than one way. The detail that soil surveyors want to include in the code may also differ. For this reason a few examples will discussed as guidelines for individuals that is not familiar with the code.

Example:

Dystrophic, luvic Hutton form soil with an A/B transition at 300 mm, extremely hard ferricrete (hard plinthite) at 850 mm and stoneline at 500 mm. The topsoil contains 15 % coarse gravel and 35 % stones, 15 – 20 % clay, and has a coarse sand grade. The clay content of the B is constant with depth. The code for this soil may be written in one of the following ways

Field code 1 3 7 5 Hu1200 re hp2 sl
2g+4k co4

Field code 2 3 5 7 Hu1200 sl hp2
2g+4k co4

Word/Excel format 1 3 7 5 Hu1200 re hp2 sl
followed in same line by a double forward slash and then
2g+4k co4

Word/Excel format 2 3 7 5 Hu1200 hp2 sl
followed in same line by a double forward slash and then
2g+4k co4

Note: In both examples Field code 1 and Word/Excel format 1 is the preferred way of coding.

It is recommended that when the code is captured in a Word or Excel format table, the separate items of the code should each constitute a separate column. The following can be used as an example of a Word format table:

Profile number	Depth codes	Soil form and family	Subsoil limitations/properties				Topsoil			Wetness class	Changed properties or condition
			Upper subsoil	Middle subsoil	Lower subsoil	Coarse fragments	Coarse fragments	Sand grade	Clay class		
1	2 4 6 2	Tu 2110	ne/ye	gs+4g	vp	3f+2g	2f	co	3	3	md 7
2	3 6 8 3	Es 1100	pr	sw		6f	4f	fi	2/3	6	dr

The subsoil limitations/properties are sequentially linked to the depth codes from right to left. For example:

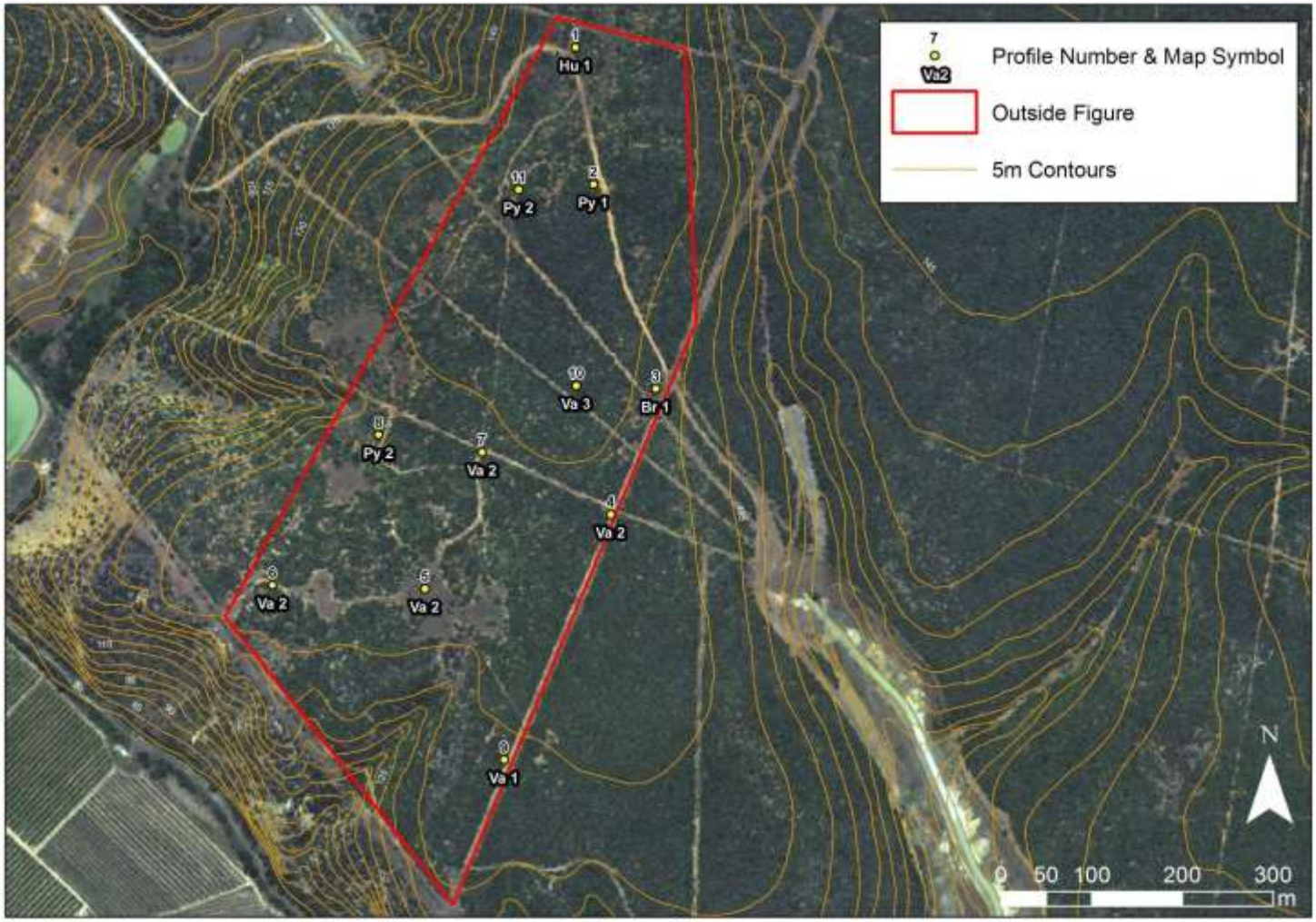
Profile 1

Depth codes	2	4	6	2
	↓	↓	↓	↓
Subsoil limitations/properties	ne/ye	gs+4g	vp	3f + 2g
Upper and lower depth of subsoil limitation/property	20 - 40 cm	40 - 60 cm	60 cm and deeper	20 – 40 cm

Profile 2

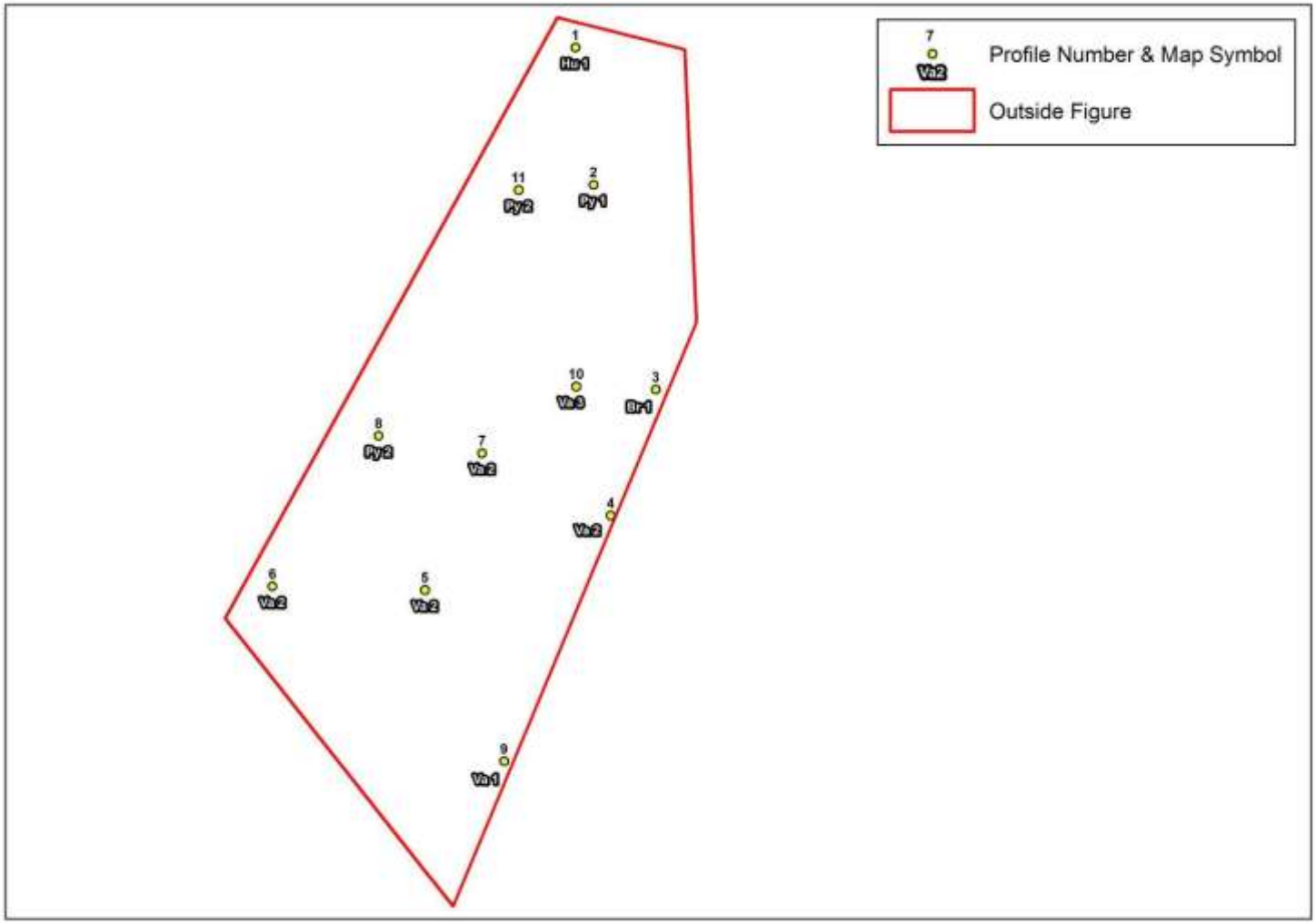
Depth codes	3	6	8	3
	↓	↓	↓	↓
Subsoil limitations/properties		pr	sw	6f
Upper and lower depth of subsoil limitation/property	30 - 60 cm	60 - 85 cm	85 cm and deeper	30 – 60 cm

The first 3 in the depth code refer to the boundary between the orthic A and the E horizon.



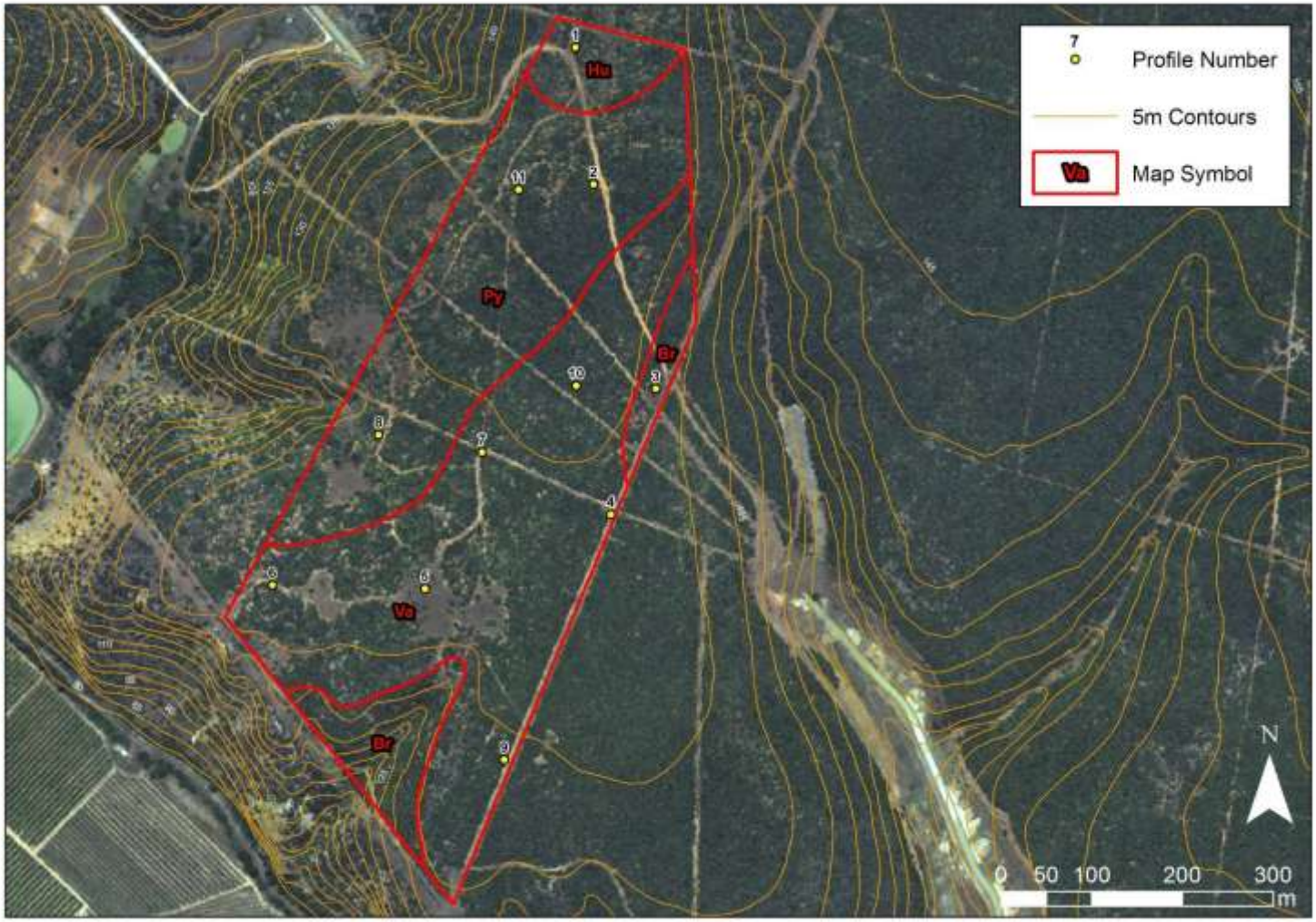
Annexure 3

Figure 1 **Contour map of the farm Falcon Ridge, Portion 274 of Strathmore Estate No. 42, with positions of the soil pits and soil type symbols**



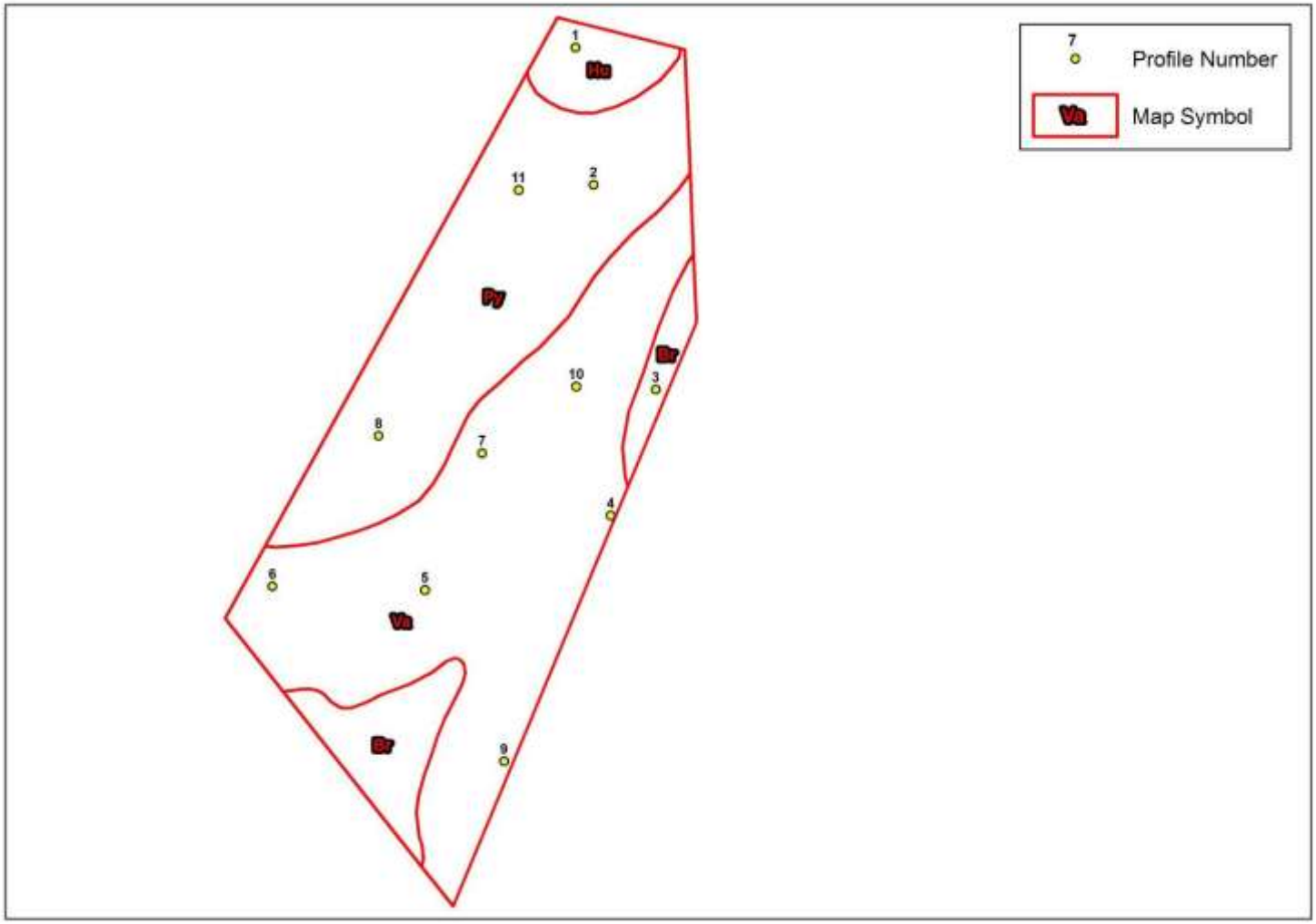
Annexure 3

Figure 2 **Boundary map of the farm Falcon Ridge, Portion 274 of Strathmore Estate No. 42, with positions of the soil pits and soil type symbols**



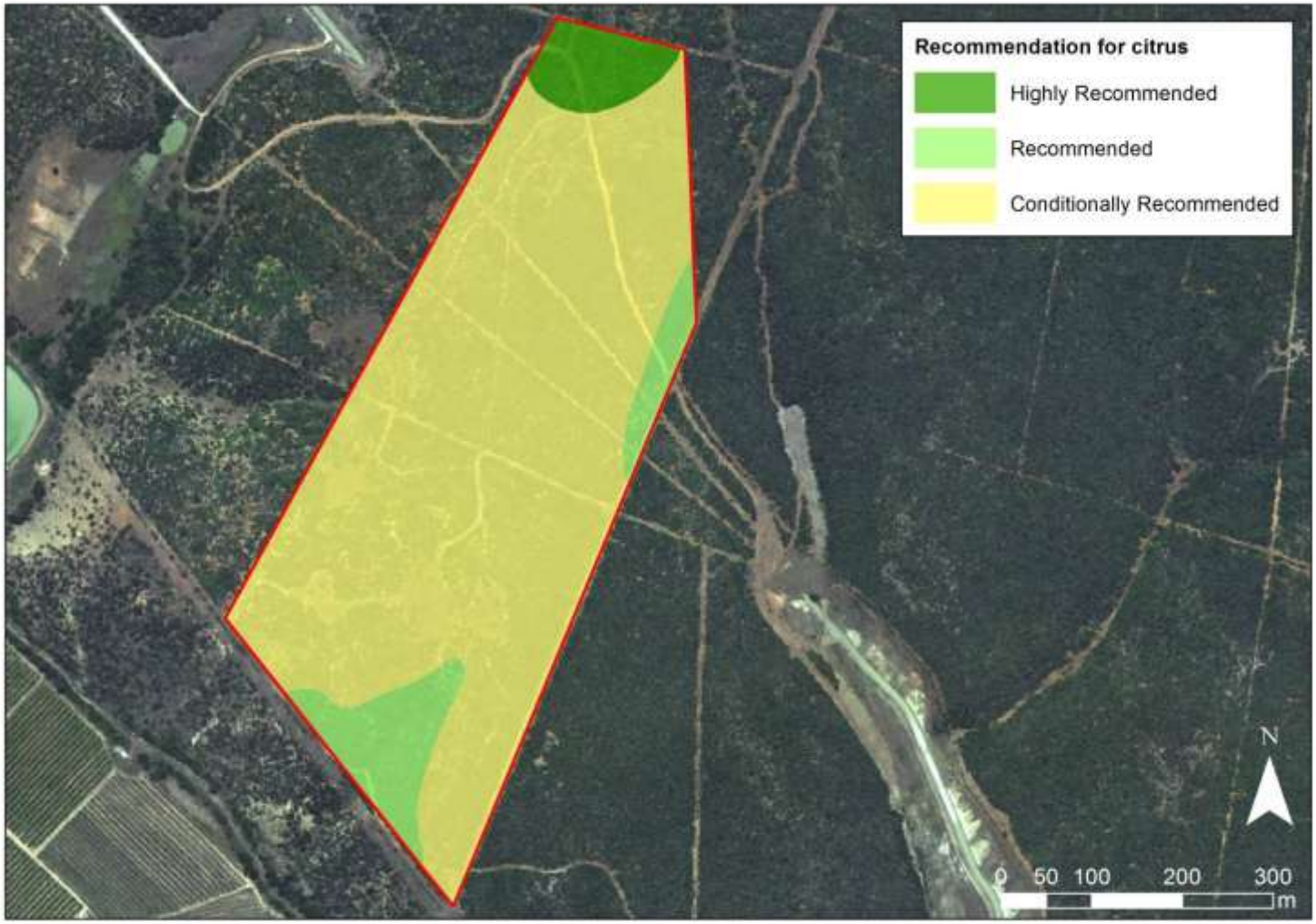
Annexure 3

Figure 3 **Contour map of the farm Falcon Ridge, Portion 274 of Strathmore Estate No. 42, with positions of the soil pits and soil map symbols and boundaries**



Annexure 3

Figure 4 **Boundary map of the farm Falcon Ridge, Portion 274 of Strathmore Estate No. 42, with positions of the soil pits and map symbols and boundaries**



Annexure 3

Figure 5 **Recommendation for the production of citrus under irrigation on the farm Falcon Ridge, Portion 274 of Strathmore Estate No. 42, per map unit**

APPENDIX E: COMMENTS AND RESPONSES REPORT

ISSUES RAISED PRIOR TO THE RELEASE OF THE DBAR

	Issue	Commentator	Date	Response
1.1	The Habata Boerdery (Pty) Ltd, Falcon Ridge farm was visited by DAFF – LUSM and RDAR Resource Planning Port Elizabeth for site inspection on the proposed site for expansion on the 9th March 2012. The recommendation from DAFF and RDAR on site was that the applicant must comply with the requirement of the Conservation of Agricultural Resources Act 43 of 1983. The provisions Regulation 2 of the said Act regarding cultivation of virgin or new land are applicable to the proposed portion for expansion. The application forms were emailed from Resource Planning Port Elizabeth to the applicant as per our conversation during the site visit. Please find the attached application forms in terms of CARA Act 43 of 1983, the application forms must be completed and forwarded to Resource Planning in Port Elizabeth in order to obtain the permission to cultivate virgin land.	Gcinile Dumse, Resource Auditor for DAFF - LUSM	7 May 2012, per fax	The applicant has been advised to comply with Regulation 2 of the Conservation of Agricultural Resources Act 43 of 1983 and submit an application to obtain approval to cultivate virgin land. The relevant application forms provided by Mr Dumse were forwarded by the EAP to the applicant.

COMMENT RECEIVED DURING DBAR REVIEW PERIOD

	Issue	Commentator	Date	Response
1.1	Please consider the following additional comments regarding the proposed establishment of new lands on the property. The use of Category 2 species for wind breakers is an accepted practice on the citrus and deciduous fruit orchard. The provisions of Regulation 15(B) (a) of the CARA Act 43 of 1983 require that land users to apply for the demarcation permit before they can establish wind breakers with Category 2 species. Category 2 plants may not occur within 30 meters from the 1:50 year flood line of watercourses or wetlands unless authorisation has been obtained in terms of the NWA. The use of Category 3 plant for wind breakers is therefore prohibited to plant new plants of species. The application for demarcation permit is thereore attached.	Gcinile Dumse, Resource Auditor for DAFF - LUSM	28 June 2012, per fax	The applicant has been advised to comply with Regulation 2 of the Conservation of Agricultural Resources Act 43 of 1983. The applicant does not intent to plant Category 3 plants as windbreaks. The relevant application forms provided by Mr Dumse were forwarded by the EAP to the applicant.

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE EXPANSION OF AGRICULTURE ON PORTION 274 OF FARM 42 STRATHSOMERES ESTATE (FALCON RIDGE), SRVM.

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BAR – Basic Assessment Report
CARA – Conservation of Agricultural Resources Act
CEMPr – Construction Phase Environmental Management Programme
DAFF – Department of Agriculture, Forestry and Fisheries
DEDEA – Department of Economic Development and Environmental Affairs
DWA – Department of Water Affairs
ECO – Environmental Control Officer
EIA – Environmental Impact Assessment
EMPr – Environmental Management Programme
EA – Environmental Authorisation
OEMPr – Operational Phase Environmental Management Programme

Definitions

"EIA Regulations" - these are the Environmental Impact Assessment Regulations published in Government Notice R. 543 of 18 June 2010 in terms of Chapter 5 of the National Environmental Management Act, Act 107 of 1998.

"The Department" - The Department of Economic Development and Environmental Affairs, Eastern Cape Province.

"Commencement" - Any physical activity on site that can be viewed as associated with the clearing and site preparation phase.

1 INTRODUCTION AND BACKGROUND

Habata Boerdery (project applicant) is proposing the expansion of existing agricultural activities on Portion 274 of Farm 42 in the Sundays River Valley Municipality. The 31 ha proposed for development to citrus orchards forms part of a Falcon Ridge Farm which is an existing farming operation. The additional portion can be readily tied into the existing farming infrastructure of the current farming operation.

The proposed development requires the preparation and submission of a Basic Assessment in terms of the 2010 NEMA EIA Regulations: GN R543, 544 and 546; promulgated under Chapter 5 of the National Environmental Management Act (Act 107 of 1998) ("NEMA"), and published in Government Gazette 33306 on 18 June 2010, to the relevant authority (DEDEA). In compliance with the said regulations an Environmental Management Programme (EMPr) based on the potential environmental impacts identified in the Basic Assessment Report was prepared simultaneously.

Environmental Management Programmes (EMPr), or Environmental Management Frameworks (EMF), serve to ensure that environmental impacts associated with particular activities are monitored, minimised and mitigated for the duration of the project. The practical management measures that should be employed to achieve monitoring and mitigation targets are detailed in the EMPr (DEAT 2004). The EMPr is a dynamic document which should be updated and reviewed on a regular basis so that it may be adapted to changing management styles, and to include improved impact mitigation technology as well as unforeseen environmental impacts. The EMPr should also be adapted if any changes are made to the project. If such changes will result in significant environmental impacts, which differ from those for which DEDEAT has granted authorisation, such changes must be submitted to the DEDEAT for approval before they are implemented. This EMPr includes, but is not limited to, the environmental impacts identified in the Basic Assessment Report and the proposed mitigation measures that must be employed to minimise the harmful effects that those impacts may have on the environment.

The EMPr report should be read in conjunction with the Basic Assessment Report as this document may contain additional, detailed information not included in this report.

1.1 Activities and Regulations for which Application has been made:

Authorisation Notice Register Number
Applicant Hannes Joubert of Habata Boerdery
Location of Activity Portion 42 of Farm 274 Strathsomers Estate, SRVM.
Activity Description The applicant (*Habata Boerdery*) operates an existing agricultural farming operation on Portion 274 Strathsomers Estate No. 42 (671 ha in extent) and intends to expand the existing operation by including an additional 31 hectares of land for the cultivation of crops (vegetables at first and citrus later) as well as the construction of a storage dam with a storage capacity of approximately 15 000 cubic metres. Because the proposed parcel of land falls within an established farm it can readily be tied into the access and irrigation infrastructure of the existing farming operation. The proposed development will entail the following activities on the site: • Clearing of vegetation from the parcel of land proposed for agriculture (approximately 30 ha) • Levelling and landscaping to provide runoff control and to facilitate the planting of crops /

orchards

- Construction of a balancing dam (15 000 cubic metres storage capacity, approximately 1 ha in extent)
- Upgrading and re-alignment of the unpaved internal roads to provide access to the proposed parcel of land
- Installation of a drip irrigation system

The applicant proposes to use existing nearby infrastructure as offices and service buildings, thus negating the need for any associated services infrastructure such as water, electricity and, sanitation, other than the water required for the irrigation of the crops. No storage of materials or equipment is proposed to take place on the site.

Listed Activities

GN R546

2. "The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres.
(a) In Eastern Cape…:
iii. Outside urban areas, in:
(ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve…"

4. "The construction of a road wider than 4 metres with a reserve less than 13,5 metres.
(a) In Eastern Cape…:
ii. Outside urban areas, the following:
(gg) Areas within10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;"

13. "The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation,
(c) In Eastern Cape…
ii. Outside urban areas, the following:
(ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;"

14. "The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation,
except where such removal of vegetation is required for:
(1) purposes of agriculture or afforestation inside areas identified in spatial instruments adopted by the competent authority for agriculture or afforestation purposes
(a) In Eastern Cape…:
i. All areas outside urban areas."

1.2 Duration of Authorisation

Should an Environmental Authorisation be issued in respect of the project, the duration of the authorisation will be indicated in said document.

1.3 Legal Requirements

This Environmental Management Programme does not include all the legislative and regulatory requirements applicable to the development. The representative appointed by the applicant to manage the operation, and the persons responsible for the implementation of the EMPr, should also familiarise themselves with the specific legal requirements applicable to the described activities on site. These may include, but are not limited to:

- Applicable Environmental Law
- Atmospheric Pollution Prevention Act 45 of 1965

- Conditions of Employment Act, 75 of 1997
- Conservation of Agricultural Resources Act 43 of 1983
- Constitution of South Africa No 108 of 1996
- Environment Conservation Act 73 of 1989
- Extension of Security of Tenure Act 62 of 1997
- Hazardous Substances Act 15 of 1973
- Health Act No 63 of 1977
- Labour Relations Act 66 of 1995
- Land Reform (Labour Tenants) Act 3 of 1996
- National Building Regulations and Building Standards Act 103 of 1977
- National Environmental Management : Biodiversity Act 10 of 2004
- National Environmental Management Act 107 of 1998
- National Environmental Management: Air Quality Act 39 of 2004
- National Heritage Resources Act 25 of 1999
- National Road Traffic Act 93 of 1996 – GNR 225 of 17 May 2000
- National Veld and Forest Fire Act 101 of 1998
- National Water Act 36 of 1998
- Nature Conservation Ordinance Act 19 of 1974
- Noise Control Regulations GN R 154 in Government Gazette No. 13717 of 10 January 1992
- Occupational Health and Safety Act of 1994
- The Hazardous Substances Act 115 of 1973
- Local bylaws
- Provincial legislation

2 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

The life of the agricultural development can be broadly divided into three phases:

A ***construction phase*** - which includes all the surveying, land clearing, and construction activities associated with the establishment of the infrastructure (drip irrigation and access roads) and preparation of the site before it can begin operating.

An ***operational phase*** - which constitutes the day to day operation of the site for the duration of its lifetime until it is discontinued / decommissioned. This would include the planting, cultivation and harvesting of crops on the site.

A ***decommissioning phase*** - which includes all the activities associated with the cessation of the described activity at the site. It is not anticipated that the development will be decommissioned, simply because it will be a cultivated farm land.

Environmental impacts, management practices and mitigation measures may differ for different phases of the development; however some impacts will be present in all phases of the development, resulting in some repetition in the EMPr.

2.1 Construction Phase EMPr (CEMPr)

During the construction phase land will be cleared of vegetation and prepared for the cultivation of crops. This will include the installation of drip irrigation infrastructure and the establishment of internal access roads as well as the levelling and landscaping of the site to provide runoff control, as well as the planting of windbreaks within the plantation. In addition to the above a 15 000m^3 irrigation dam will be constructed to store water for the irrigation of the orchards.

The vegetation clearing and site preparation phase will take place with the aid of a labour force on site, and with the aid of heavy earth moving machinery.

Environmental impacts associated with the vegetation clearing and site preparation phase of the development, as well as the appropriate mitigation actions, have been identified using specialist input for the various components of the affected environment provided in the Basic Assessment Report.

The management actions outlined below indicate the actions to be taken to minimise the potential negative impacts that this phase may have on the environment, as well as measures to enhance the potential benefits.

Destruction of plant species of special concern.

- Before site clearing commences the site must be surveyed for plant SSC by a suitably qualified botanist.
- It is recommended that these plants are transplanted to areas to be rehabilitated prior to the commencement of site clearing.
- Plant translocation must take place under the supervision of a qualified botanical / horticultural specialist.
- Permits for the removal of these plants need to be obtained from the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), or in the case of Protected Tree species, from the Department of Agriculture, Forestry and Fisheries (DAFF),

Vegetation disturbance and removal, and associated terrestrial habitat destruction and disturbance.

- Demarcate the areas to be cleared and limit vegetation clearing, and disturbance, as well as pedestrian and vehicle traffic to the demarcated area.
- Identify and demarcate already cleared / disturbed areas for material lay-down, workers rest areas and equipment storage, and limit these activities to the demarcated areas.
- Clearly demarcate the no-go areas using chevron tape.
- The collection of firewood or the collection of plants or plant material for medicinal or other use should not be permitted.
- Employees should undergo environmental awareness training and be sensitized to the need to avoid disturbance to the vegetation in the no-go areas on the site.

Loss of indigenous Sundays Spekboom Thicket vegetation.

- Species of special concern that are removed from the vegetation prior to vegetation clearing must be transplanted into existing cut-lines and disturbed area during the rehabilitation phase of the development under the supervision of a qualified botanist.
- The retained and rehabilitated vegetation must be cleared of invasive alien species and kept clear of these by conducting regular follow-up clearing operations.
- The retained and rehabilitated vegetation must be cleared of invasive alien species and kept clear of these by conducting regular follow-up clearing operations.

Destruction and removal of exotic plants.

- The retained and rehabilitated vegetation must be cleared of invasive alien species and kept clear of these by conducting regular follow-up clearing operations.
- Special attention must be given to the clearing of CARA listed species from the vegetation along the banks of the Sundays River.

Disturbance and injury to fauna during construction and the associated loss of habitat.

- Site clearing must be done in a phased manner to allow fauna the chance to move off the site.
- No fauna encountered at the site may intentionally be harmed or killed.
- All personnel should be made aware of the need to prevent harm to fauna on site.
- All open excavations must be securely fenced or barricaded.
- Speeds travelled by vehicles must be kept to a minimum.
- Excavations must be checked daily for trapped fauna; and trapped animals rescued and released.
- Injured fauna should be referred to an appropriate faunal rehabilitation or care centre (e.g. SPCA, African Dawn Wildlife Sanctuary).

The outbreak of fire on the site during construction.

- Open fires used for cooking should be avoided where possible.
- If such a fire is truly necessary then it should only be made in a demarcated area (within the construction camp) that has little vegetation or other flammable substances in close proximity.
- Fires should never be left unattended and should be extinguished if not in use.

- Exotic vegetation on the site must be eradicated.

Increased stormwater runoff due to the removal of the vegetation.
- Limit vegetation disturbance outside the portions to be cleared.
- Stormwater on the site must be controlled for the duration of the site preparation phase by employing appropriate temporary stormwater control structures e.g. cut-off berms.
- Cleared areas must be re-vegetated (cultivated) as soon as possible after the initial vegetation clearing.

Soil erosion of disturbed and unconsolidated soil once vegetation has been cleared.
- Material lay-down areas, access routes, and No-Go areas should be clearly demarcated.
- Stormwater on the site must be controlled for the duration of the site preparation and vegetation clearing phase by employing appropriate temporary stormwater control structures e.g. cut-off berms.
- Topsoil should be cleared in a phased manner to avoid large areas of unconsolidated soils.
- Topsoil should be removed and stockpiled in an appropriate manner:
  - Stockpiled separately from subsoil, monitored for- and protected from erosion, kept clear of exotic vegetation
- The rehabilitated areas should be watered until vegetation has become established.
- Should erosion scars begin to form on the landscape, erosion counter measures should be implemented immediately.
- Erosion control and development disturbance should be an important monitoring facet falling under the control of an Environmental Control Officer (ECO), who should be appointed to implement the environmental management programme (EMPr) during the site preparation and vegetation clearing as well as the site rehabilitation phases of this project.

Dust generation during the vegetation clearing and site preparation phase.
- Topsoil should be cleared in a phased manner to avoid large areas of unconsolidated soils.
- Topsoil and soil stockpiles should be covered, wetted or otherwise stabilised to prevent wind erosion and dust generation.
- A water cart or sufficient watering equipment should be available to wet soils during windy days if wind-blown sand and dust becomes a problem.

Noise and disturbance during the vegetation clearing and site preparation phase.
- Limit activities, as far as possible, to working hours (ie. 7am-6pm weekdays).
- Encourage labourers to not make unnecessary noise.
- Should after hours work take place nearby residents should be notified.
- Signage with the contact details of the responsible person should be provided at the site for residents with complaints in this regard.
- A complaints register should be kept to document complaints and the corrective action taken.
- No loud music to be allowed on site.

Generation of waste during the vegetation clearing and site preparation phase.
- Excavated material should be used at other sites where fill is required or disposed of at an appropriately licensed waste disposal facility.
- Any waste that may be produced during the construction phase must be disposed of at an appropriately licensed waste disposal facility.
- No waste is to be stockpiled on site.
- Adequate litter bins should be provided at the site for waste generated by labourers; these should be emptied on a regular basis and waste disposed of at an appropriately licensed waste disposal facility.
- Suitable potable sanitation facilities should be provided and maintained for the labourers during the construction phase.

Pollution of surface and groundwater due to chemical, oil and fuel spills.
- Fuel supply needed during the construction phase must be placed on trays, which rest on clean sand. Once this phase is complete this must be removed from the site and disposed of at an appropriately registered waste disposal facility.
- Vehicles (bulldozers, tractors etc.) should not be serviced at the site to prevent pollution of the soils by hydrocarbons or oil.
- Vehicles should be checked for leaks to ensure no fuel, oil or other similar pollutant contaminates the soils.
- Sufficient portable chemical toilets or similar sanitation facilities should be provided and suitably maintained at the site for the duration of the site clearing and preparation phase.

Impacts on potential undiscovered archaeological material or artefacts on site.

- It is recommended that in the unlikely event that any archaeological materials are exposed during the development, it should be reported immediately to the nearest museum/archaeologist or to the South African Heritage Resources Agency so that a systematic and professional investigation can be undertaken.
- If any evidence of archaeological sites or artefact, palaeontological fossils, graves or other heritage resources are found during development or construction, SAHRA and an accredited professional archaeologist or palaeontologist must be alerted immediately. (SAHRA APM Unit (Mariagrazia Galimberti / Nonoflo Ndobochani, tel. 021 462 4502).
- If the newly discovered heritage resources prove to be of archaeological significance a phase 2 rescue operation might be necessary at the cost of the developer. Sufficient time must be allowed to remove / collect such material.
- Site foremen should be informed before vegetation clearing commences on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites: i.e. human skeletal material, mussel middens, stone artefacts, fossil bone, stone features and historical artefacts or features.

Fossilised material may be uncovered and/or destroyed during excavations for the proposed development.

- Should substantial fossil remains be exposed during vegetation clearing and site preparation, the ECO should safeguard these, preferably in situ, and alert SAHRA as soon as possible so that appropriate action (e.g. recording, sampling or collection) can be taken by a professional palaeontologist.
- If any evidence of archaeological sites or artefact, palaeontological fossils, graves or other heritage resources are found during development, SAHRA and an accredited professional archaeologist or palaeontologist must be alerted immediately. (SAHRA APM Unit (Mariagrazia Galimberti / Nonoflo Ndobochani, tel. 021 462 4502).
- ECO to monitor excavations of deeper than 1.5m into bedrock during site preparation, with recording and collection of any fossil remains.
- Education of ECO, foremen and personnel about potential fossil heritage on site.
- A protocol for handling fossil material exposed during development should be developed by the palaeontologist responsible in collaboration with the ECO.
- The palaeontologist will need to apply beforehand for a collecting permit from SAHRA for which an approved depository for any fossil material collected will need to be designated (eg Albany Museum, Grahamstown).
- Sufficient time must be allowed to remove/collect such material.

Interference with and reduction of ecosystem function.

- Strictly confine disturbance to the demarcated area.
- No cleared plant material, or excavated rock and soil may be deposited in the valleys.
- Implement erosion protection measures at the two areas where the valleys are traversed by the access road.
- Limit speeds on the proposed new access road.
- Rehabilitate the disturbed areas associated with the road crossing the valleys immediately after construction.

Risk to human health and safety due to open excavations and earth moving machinery.

- Footprints, including site offices, excavations, storage areas, materials lay-down areas, stockpile area, and workers rest areas should be clearly demarcated or fenced off before site preparation and vegetation clearing commences.
- All activities should be limited to the demarcated area.
- Open excavations must be kept free of water.
- Access to the site must be controlled.
- Entry points and access routes to the site must be clearly marked and traffic limited to those areas as far as possible.
- Speed travelled by vehicles must be kept to a minimum and speed limits enforced.
- Ensure that there is a first aid facility and trained first aiders permanently on site.
- Residents of affected area must be notified timeously (two weeks minimum) prior to site preparation and vegetation clearing commencing.

Employment Generation
A number of temporary employment and skills development opportunities will be created during the vegetation clearing and site preparation phase. Efforts should be made to employ local labour as far as possible.

2.2 Operational Phase EMPr (OEMPr)

During its Operational Phase the site will be under cultivation. This will include the planting, cultivation and harvesting of citrus.

Potential negative impacts associated with the operational phase are limited mainly to impacts on the local resources and infrastructure associated therewith as well as the natural resources (vegetation and soil).

The management actions outlined below indicate the actions to be taken to minimise the potential negative impacts that the operation of the facility may have on the environment, as well as measures to enhance the potential benefits.

Alien plant invasion of rehabilitated portions.
- Disturbance to areas outside the cultivated area should be avoided, and preferably fenced off from the orchards.
- The surrounding natural vegetation should be monitored for alien plant invasion regularly and follow-up clearing done before problem plants can become established.

Increased stormwater runoff due to the removal of the vegetation.
- Implement suitable storm-water management measures within the orchards (E.g.: cut-off berms, diversion canals and appropriate planting configurations)
- Retain as much vegetation cover within the planted areas as possible (e.g. grass and small shrubs).
- Demarcate the valleys and steep portions of the site as No-Go areas.
- Re-vegetate denuded areas and disturbed vegetation near the proposed orchards and access road with indigenous vegetation, e.g. *Cynodon dactylon* or *Portulacaria afra*.

Increased soil erosion by wind and water due to the removal of the vegetation.
- Retain vegetative cover of the soil surface for as long as possible between tilling / planting operations.
- Should erosion scars begin to form on the landscape, erosion counter measures should be implemented immediately.
- Landscaping and erosion control measures should be implemented on steep portions of the site that may be sensitive to erosion.

Employment Generation
A number of employment and skills development opportunities will be created during the vegetation clearing and site preparation phase. Efforts should be made to employ local labour as far as possible.

2.3 Decommissioning Phase

Due to the fact that this site will be a cultivated farm, it is not anticipated that the site will be decommissioned in the foreseeable future. Should it be decommissioned in future, the Environmental procedures and statutory requirements applicable at the time should be complied with, and the area restored to its original conditions.

3 ENVIRONMENTAL PERFORMANCE MONITORING

Environmental Performance Monitoring has been defined as the activities implemented to measure environmental changes resulting from a particular development or activity (Davy & Paradine 1996). These include anticipated and unexpected changes in the environment. Any change from baseline conditions should initiate remedial action, or a change in mitigation or management approach. Performance monitoring could include both the collection of physical data, as well as input from potentially affected neighbours or affected parties.

3.1 Baseline data

Environmental Performance Monitoring includes the gathering of baseline data with which the future environmental conditions can be compared. For the purposes of this EMPr, much of the baseline data relating to environmental conditions at the site prior to development is provided in the Basic Assessment Report. This information can be used to assign accountability for environmental degradation. The monitoring programme will have to be in place before the vegetation clearing and site preparation phase commences so that realistic baseline conditions can be determined before the development results in any potential impacts on the environment.

It is anticipated that following the site preparation phase, the person responsible for the implementation of the CEMPr (the Environmental Officer) will also be responsible for environmental monitoring and record-keeping for the duration of the project lifetime.

3.2 Affected parties

Neighbours and parties affected by the development should be afforded opportunity to comment on problems and impacts that they may experience as a result of the development during the vegetation clearing and site preparation phase of the project. A complaints register should be kept of such comments, as well as the intervention initiated to address the comment or complaint, where appropriate. Such a register should thus be available on site and preferably be the responsibility of the foreman. In addition, it should be available to the ECO at his request. These comments will be used to adapt and improve existing mitigation measures.

3.3 Monitoring

During the construction phase the following should be monitored:

- The compliance with the conditions of approval as given in the environmental authorisation from the relevant departments, at least once every month.
- The conducting of environmental awareness training sessions with the labourers, as and when this occurs.
- The extent and location of alien invasive plants on the site within the vegetation that will remain on the site, at least once every six months.
- The condition and effectiveness of the rehabilitated areas, at least once every six months.
- The extent and location of erosion scars and head-cuts on the site, and effectiveness of erosion-countermeasures: at least once a month.

During the operational phase the following should be monitored:

- The extent and location of alien invasive plants within the indigenous vegetation that will remain on site, at least once every six months.
- The extent and location of erosion scars and head-cuts on the site, and effectiveness of erosion-countermeasures: at least once every 6 months.

4 INSTITUTIONAL ARRANGEMENTS

The ultimate responsibility for the effective implementation of the EMPr lies with the proponent (owner / developer) of the property at the time of the initiation of development. Responsibility may be delegated to environmental officers, or managers representing contractors or the proponent on the site during any stage of the development. The delegation of environmental responsibility will be determined by the institutional hierarchy of the organisation.

An Environmental Control Officer (ECO) should be appointed to monitor the implementation of the EMPr during the vegetation clearing and site preparation phase of the project. The ECO will be responsible for the monitoring of compliance with the conditions set out in the Environmental Authorisation and the conditions in the CEMPr. This may be supplemented by an internal Environmental Officer or Site Officer that will remain on site during the vegetation clearing and site preparation phase.

During the operational phase the landowner should ensure that all labourers and other personnel comply with all statutory requirements and appoint an environmental assessment practitioner (EAP) to conduct an annual environmental audit on the site so as to ensure the implementation of the OEMPr and the conditions of the environmental authorisation.

5 LEGAL ENFORCEABILITY

This EMPr is required by law in terms of the new Environmental Impact Assessment Regulations, 2010, (GN R543 33) and as such it is a legally binding agreement between the applicant, as well as all his / her sub-contractors, and the Department. Should the property be sold by the applicant, the responsibility to comply with the requirements of this document will then fall on the new owner of the property. The EMPr should be included in the contracts (tender documents or otherwise) entered into by the owner / developer and any subcontractors. This will ensure that sub-contractors have a legal obligation to abide by the conditions set out in the EMPr.

6 IMPLEMENTATION SCHEDULE AND REPORTING

The management measures outlined for the Construction Phase (vegetation clearing and site preparation phase) of the development will take effect as soon as development activities on the site are initiated, while the collection of baseline monitoring information should be completed prior to the commencement of this phase.

The management measures outlined for the Operational Phase of the development will take effect as soon as the development becomes operational (planting of crops).

Compliance monitoring reports will be kept as outlined in Section 3.3 above, and be made available at the request of the Department.

Environmental audit reports as well as reviewed amended EMPr reports will be kept up to date so that they can be made available at the request of the Department.

7 CODE OF CONDUCT FOR CONTRACTORS

Contractors performing work on the property should adhere to the conditions and codes of conduct set out in this EMPr as well as the Health and Safety Requirements and Environmental Policies as required by law. Should it be found that additional codes of conduct for contractors need to be included in this EMPr, this should be done at the first review opportunity.

8 AUDIT PROCEDURE & EMPr REVIEW SCHEDULE

The environmental audit is a systematic, objective investigation of the environmental information of a development to determine to what extent they conform to the environmental standards set out in the EMPr and Environmental Authorisation.

8.1 Construction Phase

During the vegetation clearing and site preparation phase the audit reports as produced by the Environmental Control Officer (ECO) after periodic (monthly) site visits will serve as the auditing mechanism. A schedule for site audits during this phase should be agreed upon during the appointment of the ECO. The ECO should comment on environmental impacts that are not adequately mitigated, as well as mitigation measures that are not effective, and suggest

appropriate further management actions. These comments should be included in an amended CEMPr that must be made available to the Department on request.

8.2 Operational Phase

Once the land is under cultivation the landowner should comply with all statutory legislation as well as all of the recommendations as set out in the Basic Assessment Report. An annual audit should be conducted by a suitably qualified independent environmental assessment practitioner appointed by the landowner during the operational phase. These audits should assess the effectiveness of existing management and mitigation measures, and compliance with the OEMPr and conditions of the EA. The findings of the audit reports should feed into the EMPr ensuring that management and mitigation measures are adjusted and updated to ensure that impacts are managed effectively and efficiently. Audit reports should be made available to DEDEAT at the request of the Department.

9. ENVIRONMENTAL EDUCATION

Environmental education should be provided as part of the environmental induction process for the labourers that will be employed on site prior to the commencement of the vegetation clearing and site preparation processes at the site.

Environmental induction training should include the relevant requirements of the EIA, EMPr and Environmental Authorisation, and should include at a minimum:

- Designation of No-Go areas, workers rest areas, and sanitation facilities.
- Clarification of the meanings of warning signage used at the site.
- Appropriate sanitation and waste disposal practices.
- Procedures to be followed if heritage artefacts are discovered.
- Procedures to be followed if wild fauna are encountered.
- The need to avoid the area associated with the river due to its sensitivity to erosion and disturbance.

Weekly toolbox talks should comment on environmental issues on which non-compliance has been noted during periodic audits.

10. REFERENCES

DEAT (2004) Environmental Management Plans, Integrated Environmental Management, Information Series 12, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

A. Davy & Paradine, P. 1996. Environmental Performance Monitoring and Supervision. Environmental Assessment Source Book – Update. World Bank Environment Department. Pp. 8.

APPENDIX G: OTHER INFORMATION
APPENDIX G (i): SITE NOTICE BOARD AND NEWSPAPER ADVERTISEMENT

Site Notice Board placed at the entrance to the site.

NOTICE OF BASIC ASSESSMENT

This serves as notification that a Basic Assessment process is being undertaken on behalf of Habata Boerdery (the applicant) for the proposed expansion of the existing agricultural on Portion 274 Strathsomers Estate No. 42 in the Sundays River Valley Municipality, to include an additional 31 hectares of cultivated land. The project will entail the clearing of vegetation for the proposed cultivation of crops, and the construction of a 15 000 cubic metres storage dam. An application to this effect has been submitted to the Provincial Department of Economic Development, Environmental Affairs and Tourism (Cacadu Region).

In terms of the NEMA EIA Regulations, 2010: GN R543, 544 & 546, published on the 18 June 2010 in Government Gazette 33306 in terms of the National Environmental Management Act (Act no 107 of 1998) as amended (NEMAA), the need for a Basic Assessment is triggered by the inclusion of, among others, the following activity listed in GN R 546:

"14 The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, .

(a) In the Eastern Cape

i.) All areas outside urban areas."

Other listed activities requiring environmental authorisation are GN R546 Activities: 2 (a) iii. (ff), 4 (a) ii. (gg), 13 (c) ii. (ff), 16 (iv) (a) ii. (hh); and GN R544 Activity 18 (i).

Public Process Consultants has been appointed by the applicant as the independent Environmental Assessment Practitioners (EAP) to undertake the Basic Assessment Information on the project can be downloaded from www.publicprocess.co.za. Interested and affected parties are request in writing, within 30 days of this notification (by 28 May 2012) , that their names be placed on the project database. Please provide your full name, full postal address, phone numbers, email address and state your area of interest and/ or concern and submit to: Sandy Wren, Public Process Consultants, PO Box 27688, Greenacres, 6057. Phone (041) 374-8426, Fax (041) 373-2002, Email sandy@publicprocess.co.za

Advertisement placed in "The Herald" on 12 October 2011.

APPENDIX G (ii): DATABASE OF I&APS

Title	Name	Surname	Capacity	Organisation	Let 1: Notice of BAR	Req to Reg	Comment Pre BAR	Let 2: Notice of DBAR	Comment DBAR
Mr	Harms	du Plessis	Service Provider	Sundays River Water Users Association	x			x	
Dr	Mariagrazia	Galimberti	CEO Archaeology, Palaeontology & Meteorite Unit	SA Heritage Resources Agency	x			x	
Mr	Morgan	Griffiths	EIA Manager	WESSA	x			x	
Mr	Norman	Johnson	Park Manager	Addo Elephant National Park	x			x	
Mr	Hannes	Joubert	Applicant	Habata Boerdery	x			x	
Mr	Rufus	Maloma	Soil Scientist	Provincial Dept of Agriculture	x			x	
Mr	Andries	Struwig	Deputy Director	Department of Economic Development, Environmental Affairs and Tourism (DEDEAT)	x			x	
Ms	Megan	Taplin	Communications Officer	Addo Elephant National Park	x			x	
Mr	Clayton	Weatherall-Thomas	PE CREW Representative	CREW c/o NMMU Botany Dept.	x			x	
Mr	Lonwabo	Ngoqo	Sunday's River Valley Municipality	Municipal Manager	x			x	
Ms	Marisa	Bloem	Dept of Water Affairs: PE	Water Use Authorisation Sector	x			x	
Ms	Lizna	Fourie	DWA, East London	Permit officer	x			x	
Ms	Sharlene	Mathews	Agriculture	Agri Eastern Cape	x			x	
Cllr	Frans	Adams	Ward 2 Councillor	SRVM	x			x	
Mr	Vukile	Hini	Representative - 23/84	Nontsokolo Trust	x			x	
Cllr	Bukelwa	Snoek	Ward 8 Councillor	SRVM	x			x	
Mr	Mark	Van Breda	RE/28/84	Eendracht Trust	x			x	
Mr	SF	Stiemie	Landowner 238/42	Morehoop Boerdery	x			x	
Mr	Danie	Campher	Landowner 237/42	CC & B Plase Pty Ltd	x	x	x	x	
Mr	W J	Kilian	Landowner 477/42		x			x	
Mr	Thandile and Corona	Fongqo	Landowner 133/42		x			x	
Mr	Martin	Swart	Landowner 177/42		x			x	
Ms	Nontobeko	Makoni	Representative 290/42	Jongisizwe Vegetable Trust	x			x	

Mr	PG	Nontshinga	Representative 269/42, 275/42	Nomzamo Stock Farmers Association Trust	x			x	
Mr	Gcinile	Dumse	Resource Auditor	Dept of Agriculture, Forestry & Fisheries: LUSM		x	x	x	x
J	Pentz		266/42					x	

APPENDIX G (iii): CORRESPONDENCE SENT TO I&APS AND AUTHORITIES

NOTIFICATION LETTER TO DEDEAT

PO Box 27688 Greenacres 6057
120 Diaz Road Adcockvale, PE 6001
Phone 041-3748426 Fax 041-3732002
Email sandy@publicprocess.co.za
www.publicprocess.co.za
Ck 97/32984/23 VAT 44601 68273

Public Process Consultants
Environmental Impact Assessment and Public Participation Management

25 April 2012

Attention: Mr Andries Struwig

Department of Economic Development and Environmental Affairs
Collegiate House, cnr Belmont Terrace & Castle Hill, Central, Port Elizabeth
Private Bag X 5001, Greenacres 6057
Fax: 041-585 1958

Dear Sir,

RE: NOTICE OF BASIC ASSESSMENT PROCESS & APPLICATION FOR AUTHORISATION: EXPANSION OF AGRICULTURE ON FALCON RIDGE FARM, PORTION 274 OF STRATHSOMERS ESTATE NO. 42 IN THE SUNDAYS RIVER VALLEY MUNICIPALITY

In terms of the NEMA EIA Regulations, 2010: GN R543, 544 and 546 promulgated under Chapter 5 of the National Environmental Management Act (as amended), and published in Government Gazette 33306 on 18 June 2010, this serves as notification to the competent authority, in this case the Provincial Department of Economic Development, Environmental Affairs and Tourism, that a Basic Assessment is being conducted for the expansion of agricultural activities on Portion 274 of Strathsomers Estate No 42, Kirkwood, Sundays River Valley.

PROJECT APPLICANT
Habata Boerdery (Pty) Ltd

PROJECT NAME
Expansion of Agriculture on Falcon Ridge Farm, Portion 274 of Strathsomers Estate No 42, in the Sundays River Valley Municipality.

PROJECT LOCALITY
The site is located in the south-eastern corner of Falcon Ridge Farm, approximately 5 kilometres east of Kirkwood. The entrance to the farm is situated 6 kilometres from Kirkwood, along the gravel road between Kirkwood and Enon. The locality map attached provides an overview of the location of the property under assessment.

BRIEF PROJECT DESCRIPTION
The applicant (Habata Boerdery) is proposing the expansion of the existing agricultural activities on Falcon Ridge, Portion 274 Strathsomers Estate No. 42, an established farm in the Sundays River Valley Municipality. The parcel of land proposed for development is approximately 31 hectares in extent and forms part of a farm of which various portions are currently under cultivation. The area proposed for cultivation has been previously authorised for development, in an environmental authorisation issued in terms of Section 22 of the Environment Conservation Act, Act 73 of 1989 (EC 06/2d/183-03). However the construction timeframes stipulated in the authorisation have since lapsed.

In addition to the cultivation of crops, the applicant intends to construct a water storage dam with a storage capacity of approximately 15 000 cubic metres.

The proposed development will entail the following activities on the site:

- Clearing of vegetation from portions of the site proposed for agriculture
- Leveling and landscaping the site to provide runoff control

- Establishment of internal roads to provide access to cultivated area
- Construction of a 15 000m^3 irrigation water storage dam
- Installation of a drip irrigation system
- Establishment of wind breaks
- Planting of vegetables / fruit trees

Once the necessary infrastructure has been established, the area will be used for the cultivation of vegetables and /or citrus crops. The applicant proposes to use existing infrastructure as offices and service buildings of the Falcon Ridge farm, thus negating the need for any associated services infrastructure such as water, electricity and, sanitation, other than the water required for the irrigation of the crops. No storage of materials or equipment is proposed to take place on the proposed site.

The final design and layout of the development will be informed by technical and environmental specialist input during the Basic Assessment process.

APPLICABLE LEGISLATION
The Basic Assessment is being undertaken in line with the NEMA EIA Regulations, 2010 (as Amended): GN R543, 544 and 546 promulgated under Chapter 5 of the National Environmental Management Act (as amended), and published in Government Gazette 33306 on 18 June 2010. The need for a Basic Assessment is triggered by the inclusion of activities listed in GN R 546, in particular:

"14 The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation…
(a) In Eastern Cape…
i. All areas outside urban areas."

Public Process Consultants has been appointed by Habata Boerdery (Pty) Ltd (the applicant), as the Environmental Assessment Practitioner to undertake the Basic Assessment including Public Participation. The purpose of this letter is to notify the competent authority and other relevant organs of state that have jurisdiction over any aspect of the proposed project, of the submission of an application for Environmental Authorisation in respect of the above project. The other organs of state to which this notification is being sent are indicated below.

Please find attached with this correspondence the following documentation:
- Application Form for Environmental Authorisation
- Details of EAP and Declaration of Interest
- Locality Map

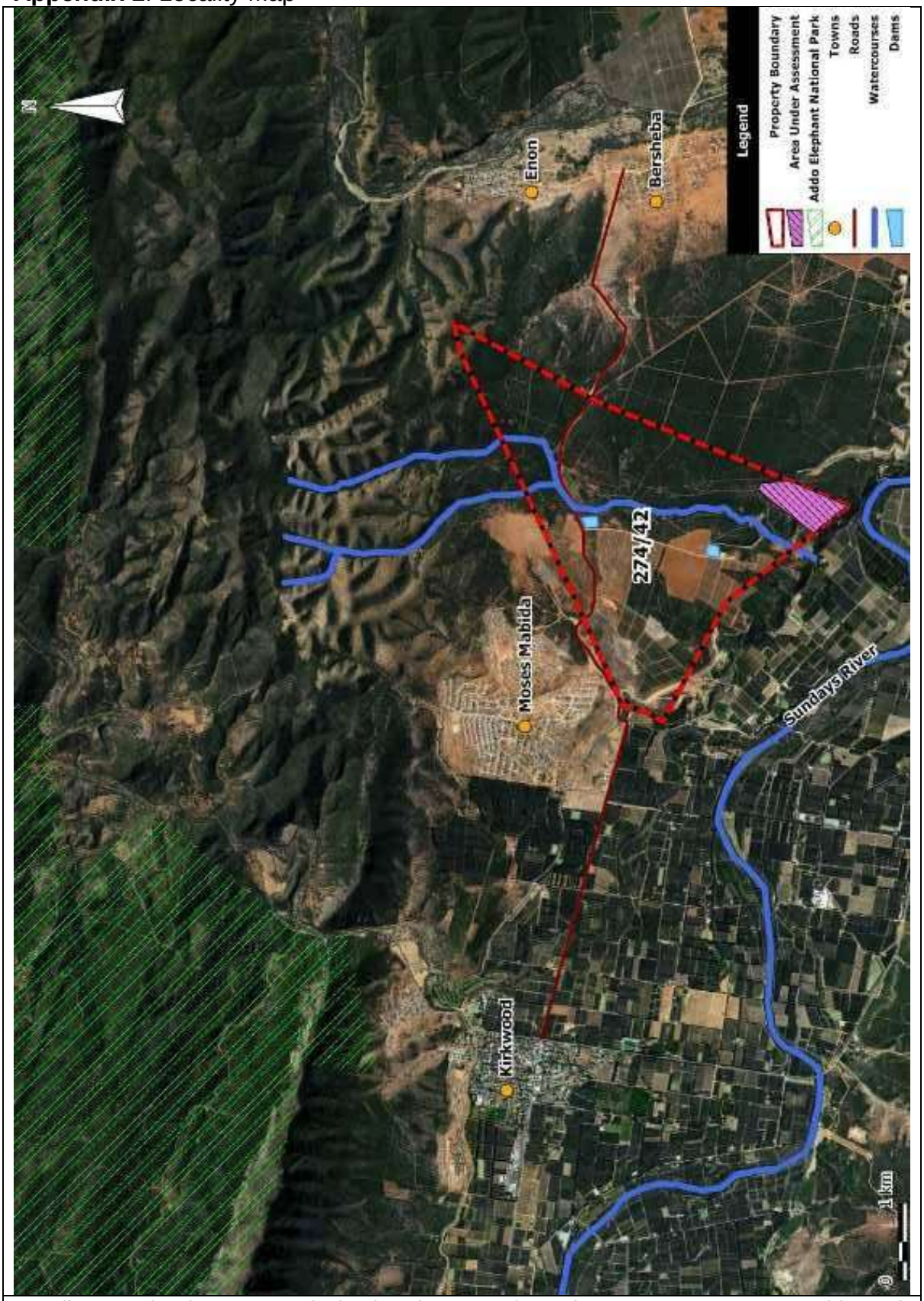
We trust that you will find the above in order. Please do not hesitate to contact Sandy or Paul at the contact details above should you have any comments or queries with regards to this submission.

Regards,

Sandy Wren
Environmental Assessment Project Leader

cc.
Dr Mariagrazia Galimberti, SA Heritage Resources Agency
Ms Marisa Bloem, Department of Water Affairs
Ms Lizna Fourie, Department of Water Affairs
Mr Lonwabo Ngoqo, Municipal Manager, Sundays River Valley Municipality

Appendix 1: Locality Map



Locality Map for the Proposed Site (Portion 274 of Strathsomers Estate No 42, Kirkwood, Sundays River Valley).

NOTIFICATION LETTER TO I&APS

PO Box 27688 Greenacres 6057
120 Diaz Road Adcockvale, PE 6001
Phone 041 374 8426 Fax 041 373 2002
Email sandy@publicprocess.co.za
www.publicprocess.co.za
Ck 97/32984/23 VAT 44601 68273

Public Process Consultants
Environmental Impact Assessment and Public Participation Management

26 April 2012

«Title» «Name» «Surname»
«Organisation»
«Address1»
«Address2»
«City»
«Code»

Dear «Title» «Surname»

RE: NOTICE OF BASIC ASSESSMENT PROCESS: EXPANSION OF AGRICULTURE ON FALCON RIDGE FARM, PORTION 274 OF STRATHSOMERS ESTATE NO. 42 IN THE SUNDAYS RIVER VALLEY MUNICIPALITY

In terms of the NEMA EIA Regulations, 2010: GN R543, 544,and 546 promulgated under Chapter 5 of the National Environmental Management Act (as amended), you have been identified as an interested and/or affected party (I&AP) for the above project. This serves as notification that a Basic Assessment process is being conducted on behalf of Habata Boerdery (the project applicant) for the expansion of the existing agricultural activities on Falcon Ridge Farm, Portion 274 Strathsomers Estate No. 42, an established farm in the Sundays River Valley Municipality. The parcel of land proposed for development is approximately 31 hectares in extent, and is currently zoned for *Agriculture*. The applicant is proposing to clear portions of vegetation, install drip irrigation infrastructure, and construct a storage dam with capacity of approximately 15 000m³, as well as upgrading portions of the unpaved internal roads to provide access to cultivated areas.

The need for a Basic Assessment is triggered by the inclusion of, but not limited to, the following activity listed in GN R 546:

"14. The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, …
(a) In the Eastern Cape, …
i. All areas outside urban areas."

Other listed activities triggered by the project, and which require authorisation from the Department of Economic Development, Environmental Affairs and Tourism, are included in the attached Background Information Document.

Public Process Consultants has been appointed by the applicant as the independent Environmental Assessment Practitioners (EAP) to undertake the Basic Assessment including Public Participation for the project. In order to be placed on the project database and receive further information on the project, you are required to register your interest in writing. Kindly notify us of your request to register, and state your area of interest / concern in this matter, within 32 days of receipt of this notification, by **28 May 2012**. Additional issues and concerns may be raised once the Draft Basic Assessment Report (BAR) is released for public review, anticipated to be in June 2012.

To assist you in the submission of issues and concerns we have included with this correspondence a Background Information Document, Locality Map and a Comment Form. Project information can be accessed through the website www.publicprocess.co.za

Should you have any queries or require additional information please contact Wandile Jundundu, Sandy Wren, or Paul Steyn using the contact details provided above.

Yours sincerely

SANDY WREN

PUBLIC INVOLVEMENT PROCESS REPLY FORM

BASIC ASSESSMENT REGISTRATION AND COMMENT FORM

Expansion of Agriculture on Falcon Ridge Farm, Portion 274 of Strathsomers Estate No. 42 in the Sundays River Valley Municipality

Applicant: Habata Boerdery (Pty) Ltd

Listed Activity: GN R546 Activity 14 (a) (i).

Return Completed Reply Form by **28 May 2012**, to:

Public Process Consultants, PO Box 27688, Greenacres 6057
Phone: 041 – 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Please Complete all Relevant Sections Below

Please provide your full contact details:

FIRST NAME:	*SURNAME:*
ORGANISATION:	*POSITION:*
POSTAL ADDRESS:	
CODE:	
PHONE:	*FAX:*
CELL:	*EMAIL:*

Would you like to register as an interested and affected party? (please tick the appropriate box)

NOTE: You are required to register as an I&AP in order to receive further correspondence regarding the Basic Assessment.

YES
NO

Please clearly list your issues, concerns, views and/or questions you may have regarding the project (use additional pages if required)

BASIC ASSESSMENT PROCESS

EXPANSION OF AGRICULTURE ON FALCON RIDGE FARM, PORTION 274 OF STRATHSOMERS ESTATE NO. 42 IN THE SUNDAYS RIVER VALLEY MUNICIPALITY

BACKGROUND INFORMATION DOCUMENT, APRIL 2012

INTRODUCTION

The applicant (*Habata Boerdery*) is proposing the expansion of the existing agricultural activities on Falcon Ridge, Portion 274 Strathsomers Estate No. 42 (671 ha in extent), an established farm in the Sundays River Valley Municipality. The parcel of land proposed for development is approximately 31 hectares in extent and is currently zoned for *Agriculture*. This parcel of land forms part of a farm that is currently under cultivation and is producing a variety of vegetables for the local and international markets. In addition to the cultivation of crops, the applicant intends to construct a water storage dam with a storage capacity of approximately 15 000 cubic metres. The development of the parcel of land will allow for the expansion of the current farming operations on Falcon Ridge.

Environmental authorisation in terms of Section 22 of the Environment Conservation Act, Act 73 of 1989, for the agricultural development of the farm was granted in March 2004 (EC 06/2d/183-03). Clearing of the parcel of land which is currently under assessment was included in this authorisation. However, the timeframes stipulated in the authorisation have subsequently lapsed. Therefore, in order to be able to develop the proposed parcel of land, application for environmental authorisation must again be obtained.

In terms of the NEMA EIA Regulations, 2010: GN R543, 544 and 546, promulgated under Chapter 5 of the National Environmental Management Act (Act 107 of 1998) ("NEMA"), and published in Government Gazette 33306 on 18 June 2010; a Basic Assessment is required for this project. The applicant has appointed Public Process Consultants as the independent Environmental Assessment Practitioner to undertake the Basic Assessment including public participation for this application.

PROJECT LOCALITY

The site is located in the Sundays River Valley Municipal area and can be accessed from the gravel road which extends between Kirkwood and Enon/Bersheba. The nearest town is Moses Mabida Settlement / Bontrug, which lies approximately 2kilometres north west of the entrance to the site. The Addo Elephant National Park is located approximately 4 kilometres north of the site. The locality map attached provides an overview of the location of the property under assessment.

HOW CAN I PARTICIPATE IN THIS PROCESS?

In terms of regulation 55 (1) (b) of Government Notice R 543 interested and affected parties are to request in writing that their names be placed on the register of interested and affected parties. In order to register on the database complete the comment and registration form attached to this correspondence or submit your contact details (via fax or email), stating your full name, address and contact numbers to the consultant indicated in this documentation. Clearly state any interest that you may have in this matter. By registering on the project database you will be notified as and when information on the project is available.

WHAT DOES THIS DOCUMENT TELL YOU

This document provides you, as an interested and or affected party (I&AP), with background information on the proposed project, the Basic Assessment as well as public participation process. It

indicates how you can become involved in the project, receive information and raise issues that may interest and/or concern you. The sharing of information forms an important component of the public participation process and provides you with the opportunity to become actively involved in the environmental assessment process from the outset. The input received from I&APs together with scientific and technical investigations assists the responsible authority, in this instance the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), with their decision-making.

WHAT DOES THE PROJECT ENTAIL

The applicant (*Habata Boerdery*) operates an existing agricultural farming operation on Portion 274 Strathsomers Estate No. 42 (671 ha in extent) and intends to expand the existing operation by including an additional 31 hectares of land for the cultivation of crops (vegetables at first and citrus later) as well as the construction of a storage dam with a storage capacity of approximately 15 000 cubic metres. Because the proposed parcel of land falls within an established farm it can readily be tied into the access and irrigation infrastructure of the existing farming operation.

The proposed development will entail the following activities on the site:

- Clearing of vegetation from the parcel of land proposed for agriculture (approximately 30 ha)
- Levelling and landscaping to provide runoff control and to facilitate the planting of crops / orchards
- Construction of a balancing dam (15 000 cubic metres storage capacity, approximately 1 ha in extent)
- Upgrading and re-alignment of the unpaved internal roads to provide access to the proposed parcel of land
- Installation of a drip irrigation system

Once the necessary infrastructure has been established, the lands will be used for the rotational cultivation of crops such as melons, cabbages, butternuts etc. and at a later stage may be used for citrus orchards. The applicant proposes to use existing nearby infrastructure as offices and service buildings, thus negating the need for any associated services infrastructure such as water, electricity and, sanitation, other than the water required for the irrigation of the crops. No storage of materials or equipment is proposed to take place on the area under assessment.

The final design and layout of the area proposed for cultivation will be informed by technical and environmental specialist input during the Basic Assessment process.

OVERVIEW OF THE ENVIRONMENTAL BASIC ASSSESSMENT (BAR) PROCESS

In terms of Regulations 543, 544 and 546 promulgated under Chapter 5 of the NEMA in Government Gazette 33306 on 18 June 2010, the project requires a Basic Assessment because it includes, amongst others, the following listed activities in GN R 544 and 546:

NEMA EIA Regulations, 2010, GN R 544, requiring Basic Assessment	
"18. The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from: *(i) a watercourse;…"*	The proposed agricultural expansion may necessitate the upgrade of the existing access road. A portion of this road currently extends through a drainage line. Therefore upgrades to this portion of the road may trigger this listed activity. The applicability of this listed activity will be determined through the Basic Assessment Process.
NEMA 2010 EIA Regulations, GN R 546, requiring Basic Assessment	
"2. The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic	This site is within approximately 4km of Addo Elephant National Park. The applicant intends to

metres. *(a) In Eastern Cape…:* *iii. Outside urban areas, in:* *(ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve…"*	construct a water storage dam with a storage capacity of approximately 15 000 cubic metres.
"4. The construction of a road wider than 4 metres with a reserve less than 13,5 metres. *(a) In Eastern Cape…:* *ii. Outside urban areas, the following:* *(gg) Areas within10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;"*	This site is within approximately 4km of Addo Elephant National Park. Internal access roads wider than 4 meters may be created to facilitate access and agricultural production at the site.
"13. The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, *(c) In Eastern Cape…* *ii. Outside urban areas, the following:* *(ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;"*	This site is within approximately 4km of Addo Elephant National Park. It is anticipated that more than 1 hectare of indigenous vegetation will be cleared.
"14. The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, *except where such removal of vegetation is required for:* *(1) purposes of agriculture or afforestation inside areas identified in spatial instruments adopted by the competent authority for agriculture or afforestation purposes* *(a) In Eastern Cape…:* *i. All areas outside urban areas."*	The vegetation proposed for clearing will exceed 5 ha and is predominantly indigenous. No spatial instruments identifying areas for agriculture or afforestation have been adopted by the competent authority. The site is located outside an urban area.
"16. The construction of…: *(iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.* *(a) In Eastern Cape…:* *ii. Outside urban areas, in:* *(hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve…"*	This site is within approximately 4km of Addo Elephant National Park. The proposed agricultural expansion may necessitate that the existing access road be upgraded. A portion of this road currently extends through a drainage line. Therefore upgrades to this portion of the road may trigger this listed activity. The applicability of this listed activity will be determined through the Basic Assessment Process.

The listed activities require authorisation from the DEDEAT prior to the commencement of any activities on the site. The environmental assessment needs to show the responsible authority, DEDEAT, and the project proponent (Habata Boerdery) what the consequences of their choices will be in biophysical, social and economic terms. The steps in the Basic Assessment Process are outlined below.

The Basic Assessment Process including Public Participation can be summarised into the following stages:

Stage 1: Notification to Authorities and I&APs

The first stage in the process entails notification to the DEDEAT as well as interested and affected parties (I&APs) of the intention to proceed with the BAR. I&APs are required to register their interest on the project database and raise issues of concern.

Stage 2: Draft Basic Assessment (BAR) for Public Comment
The Basic Assessment is undertaken in order to identify and assess potential environmental impacts, both positive and negative, that may be associated with the proposed project. This includes mitigatory measures to reduce potential negative impacts and maximise positive benefits. The Basic Assessment will include an overview of the affected environment on which the activity is proposed to take place. Specialist information for inclusion in the Draft Basic Assessment Report has been identified as follows:

- Biophysical Site Assessment (to include vegetation and ecology)
- Soil suitability assessment

The Draft Basic Assessment, together with comments received from I&APs will be made available for a 30 day review period. Reasonable and feasible alternatives identified to date and to be included in the draft BAR are:

- No-go: to leave the land as is and not commence with the activity
- Go: the project alternative as proposed, including alternative layouts.
- Reasonable and feasible alternatives as raised by I&APs

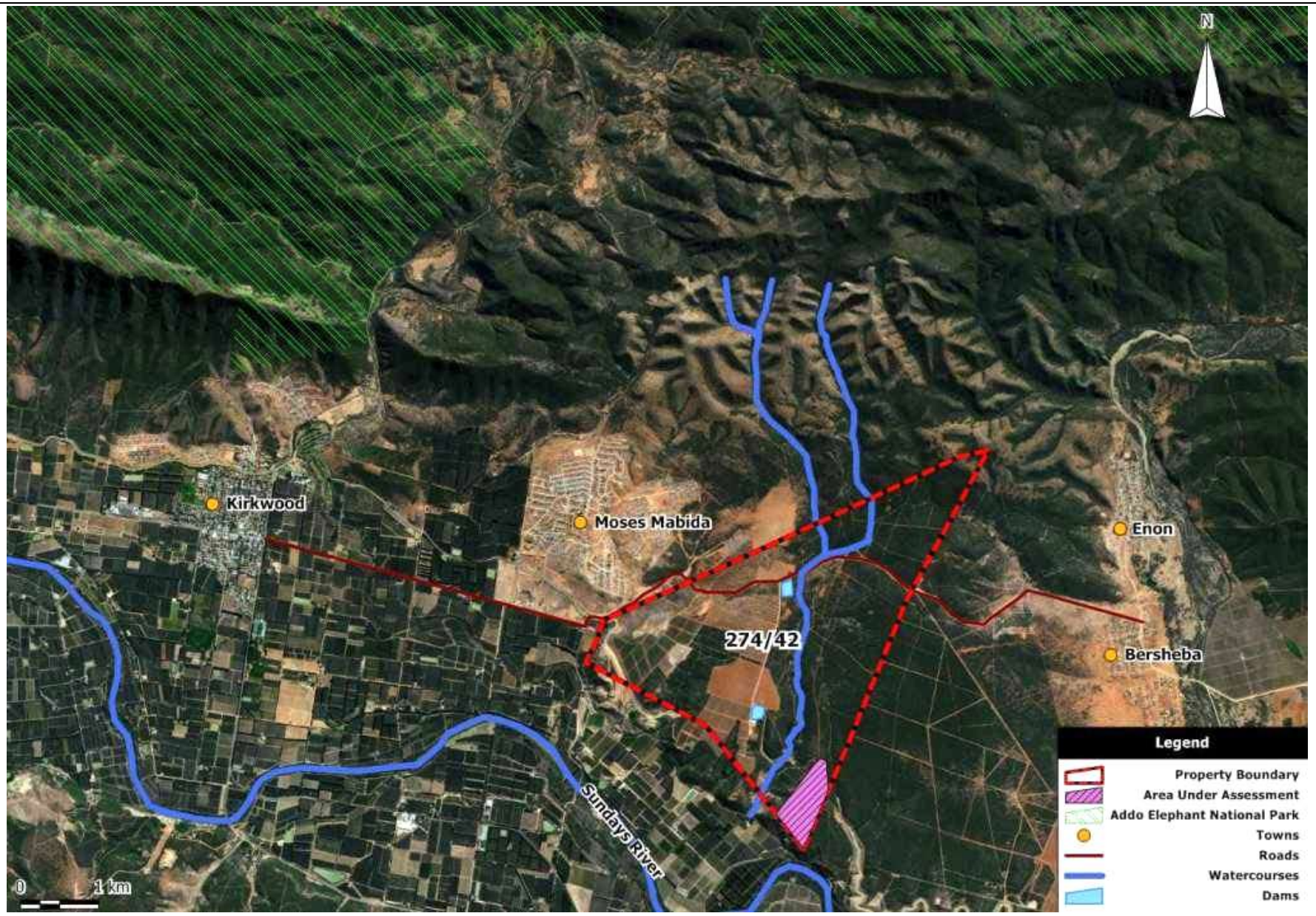
All I&APs on the project database will be notified in writing of the 30 day comment period for the Draft Basic Assessment, copies of the Draft Report and project information can be downloaded from the following project website www.publicprocess.co.za. It is not proposed that public meetings are held during this period but telephonic consultations and one on one meetings with key I&APs will take place where requested.

Stage 3: Submit Final Basic Assessment Report and Application
The comments received from I&APs will be included in the Final BAR before it is submitted to the DEDEAT for their decision making.

Stage 4: Notification of Environmental Authorisation and Appeal Period
The final step in the process entails providing written notification to all I&APs on the project database of the issuing of the environmental authorisation and appeal period, including the manner of appeal. Project construction may only commence once approval has been received from the DEDEAT.

WHAT IS YOUR ROLE AS AN I&AP?
1. I&APs are required to respond to the letters of notification and/or newspaper advertisements and register their interest on the project database
   - By emailing, faxing or mailing a comment form to the participation consultant indicated below.
   - By registering your interest in the project you will be kept informed of the process and will be notified of any opportunities to comment
2. I&APs are required to state their area of interest and/or concern in the matter
   - By emailing, faxing or mailing a comment form to the public participation consultant indicated below.
3. By telephonically contacting the public participation consultant if you have a query, comment, or require further project information.
4. By reviewing the Draft BAR and submitting any comments within the 30-day comment period.

WHO SHOULD YOU CONTACT?
Sandy Wren, Public Process Consultants, PO Box 27688, Greenacres, 6057, Phone 041-374 8426 Fax 041-373 2002 Email sandy@publicprocess.co.za
Information on the project can be downloaded from the following website: **www.publicprocess.co.za**



Locality Map for Portion 274 Strathsomers Estate No. 42.

NOTIFICATION LETTER TO I&APS RE.: DBAR REVIEW

PO Box 27688 Greenacres 6057
120 Diaz Road Adcockvale, PE 6001
Phone 041 374 8426 Fax 041 373 2002
Email sandy@publicprocess.co.za
www.publicprocess.co.za
Ck 97/32984/23 VAT 44601 68273

Public Process Consultants
Environmental Impact Assessment and Public Participation Management

12 June 2012

Dear

RE: NOTICE OF DRAFT BASIC ASSESSMENT REPORT COMMENT PERIOD - EXPANSION OF AGRICULTURE ON FALCON RIDGE FARM, PORTION 274 OF STRATHSOMERS ESTATE NO. 42, SRVM (DEDEAT Reference Number: EC06/LN1&3/M/12-31).

As a registered interested and affected party on the database for the above project you are hereby notified of the **30 day** review period for the Draft Basic Assessment Report for proposed agricultural expansion of Portion 274 of Strathsomers Estate no 42, Sundays River Valley Municipality. The applicant is proposing to expand the existing Falcon Ridge farming operation by clearing ~31 ha of vegetation, establishing an irrigation dam, installing irrigation infrastructure, and constructing an internal road.

Comments on the Draft Basic Assessment Report should be submitted to Public Process Consultants (contact details above) by no later than **13 July 2012**.

In order to assist you in making your comments please find attached an Executive Summary of the Draft Basic Assessment Report as well as a comment form. A copy of the full report may be downloaded from the project website www.publicprocess.co.za

The next stage in the Basic Assessment Process entails compiling and including the comments received during this comment process for consideration in the finalising of the Basic Assessment Report for submission to the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) for their decision making. You will be notified in writing of the submission of the Final Report.

Should you have any queries or require additional information please contact Sandy Wren or Paul-Pierre Steyn using the contact details provided above.

Yours sincerely

SANDY WREN
Environmental Assessment Project Leader

PUBLIC INVOLVEMENT PROCESS REPLY FORM

DRAFT BASIC ASSESSMENT REPORT COMMENT FORM

Expansion of Agriculture on Falcon Ridge Farm, Portion 274 of Strathsomers Estate No. 42 in the Sundays River Valley Municipality

Applicant: Habata Boerdery (Pty) Ltd

Listed Activity: GN R546 Activity 14 (a) (i).

Return Completed Reply Form by **13 July 2012**, to:

Public Process Consultants, PO Box 27688, Greenacres 6057
Phone: 041 – 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Please Complete all Relevant Sections Below

Please provide your full contact details:

FIRST NAME:	*SURNAME:*
ORGANISATION:	*POSITION:*
POSTAL ADDRESS:	
CODE:	
PHONE:	*FAX:*
CELL:	*EMAIL:*

Please clearly state any interest that you may have in this matter.

Please clearly outline comments you may have in response to the Draft Basic Assessment Report (use additional pages if required).

APPENDIX G (iv): CORRESPONDENCE FROM I&APS AND AUTHORITIES

CORRESPONDENCE FROM DEDEAT: ACKNOWLEDGEMENT OF RECEIPT OF APPLICATION

Province of the
EASTERN CAPE
ECONOMIC DEVELOPMENT,
ENVIRONMENTAL AFFAIRS AND TOURISM
CACADU REGION

P/Bag X6001 GREENACRES
South Africa, 6057
Phone: +27 (041) 5086800
Fax: +27 (041) 5085865
Web: www.deaet.ecprov.gov.za
E-mail: Chuma.Gushu@deaet.ecape.gov.za

Public Process Consultants
P.O Box 27688
Greenacres
6057

Ref: EC06/LN1&3/M/12-31
Enquiries: C. Gushu

Fax: 041 373 2002

Attention: Mr. Paul-Pierre Steyn

ACKNOWLEDGEMENT OF RECEIPT: APPLICATION FOR AUTHORISATION IN TERMS OF SECTION 24 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, ACT 107 OF 1998 TO UNDERTAKE A LISTED ACTIVITY AS SCHEDULED IN THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS: PROPOSED EXPANSION OF AGRICULTURE ON FALCON RIDGE FARM, PORTION 274 OF STRATHSOMERS ESTATE NO. 42 WITHIN THE SUNDAYS RIVER VALLEY MUNICIPALITY

Receipt of the application by yourself on behalf of Habata Boerdery dated 25 April 2012 and received on the same date to undertake a listed activity as scheduled in Listing Notice 1 and 3 of 18 June 2010 is hereby acknowledged.

The reference number assigned to your application is EC06/LN1&3/M/12-31. Please quote the reference number provided in the event of any correspondence/queries in this regard.

The applicant's attention must be drawn to the fact that the activity may not commence prior to an Environmental Authorisation being granted by DEDEAT.

CHUMA GUSHU
ENVIRONMENTAL OFFICER: EIM
CACADU REGION

DATE: 10 May 2012

Expansion of Agriculture on Falcon Ridge Farm, Portion 274 of Strathsomers Estate No. 42 in the Sundays River Valley Municipality

Applicant: Habata Boerdery (Pty) Ltd

Listed Activity: GN R546 Activity 14 (a) (i).

Return Completed Reply Form by **28 May 2012**, to:

Public Process Consultants, PO Box 27688, Greenacres 6057
Phone: 041 – 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Please Complete all Relevant Sections Below

Please provide your full contact details:

FIRST NAME:	Dave Campbell	SURNAME:	Campbell
ORGANISATION:	GOLDWATER CC & PLAS	POSITION:	M/D
POSTAL ADDRESS:	P O Box 379		Kirkwood
CODE:	6120		
PHONE:	042-2301876	FAX:	042 2300934
CELL:	0721771731	EMAIL:	goldwater@telkomsa.net

Would you like to register as an interested and affected party? (please tick the appropriate box)

NOTE: You are required to register as an I&AP in order to receive further correspondence regarding the Basic Assessment.

YES	
NO	✓

Please clearly list your issues, concerns, views and/or questions you may have regarding the project (use additional pages if required)

No problem. Spoke to Paul steyn.

Regards

Dave Campbell

PUBLIC INVOLVEMENT PROCESS REPLY FORM

BASIC ASSESSMENT REGISTRATION AND COMMENT FORM

Expansion of Agriculture on Falcon Ridge Farm, Portion 274 of Strathsomers Estate No. 42 in the Sundays River Valley Municipality

Applicant: Habata Boerdery (Pty) Ltd

Listed Activity: GN R546 Activity 14 (a) (i).

Return Completed Reply Form by 28 May 2012 to:

Public Process Consultants, PO Box 27688, Greenacres 6057
Phone: 041 – 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Please Complete all Relevant Sections Below

Please provide your full contact details:

FIRST NAME: GINILE	*SURNAME:* DUMSE
ORGANISATION: DAFF - LWSM	*POSITION:* RESOURCE AUDITOR
POSTAL ADDRESS: P/BAG X 4, TECOMA, EAST LONDON	
CODE: 5214	
PHONE: 043 704 6810	*FAX:* 043 704 6812
CELL: 078 418 1723	*EMAIL:* GinileD@daff.gov.za

Would you like to register as an interested and affected party? (please tick the appropriate box)

NOTE: You are required to register as an I&AP in order to receive further correspondence regarding the Basic Assessment.

YES	✓
NO	

Please clearly list your issues, concerns, views and/or questions you may have regarding the project (use additional pages if required)

agriculture,
forestry & fisheries

Department:
Agriculture, forestry & fisheries
REPUBLIC OF SOUTH AFRICA

Directorate Land Use & Soil Management,
Private Bag X 4, Tecoma • East London, 5720
Tel: 043 704 6800/10 • Fax: 043 704 6812
Enquiries: G P Dumse • Email: GcinileD@daff.gov.za

REGISTERING AS AN INTERESTED AND AFFECTED PARTY FOR THE CULTIVATION OF VIRGIN LAND APPLICATION HABATA BOERDERY (Pty) Ltd

The Habata Boerdery (Pty) Ltd, Falcon Ridge farm was visited by DAFF-LUSM and RDAR Resource Planning Port Elizabeth for site inspection on the proposed site for expansion on the 9th March 2012.

The recommendation from DAFF and RDAR on site was that the applicant must comply with the requirement of the Conservation of Agricultural Resources Act 43 of 1983. The provisions Regulation 2 of the said Act regarding cultivation of virgin or new land are applicable to the proposed portion for expansion.

The application forms were emailed from Resource Planning Port Elizabeth to the applicant as per our conversation during the site visit. Please find the attached application forms in terms of CARA Act 43 of 1983, the application forms must be completed and forwarded to Resource Planning in Port Elizabeth in order to obtain the permission to cultivate virgin land.

Regards

Resource Auditor: Western Region

Date: 7th May 2012

agriculture, forestry & fisheries

Department:
Agriculture, forestry & fisheries
REPUBLIC OF SOUTH AFRICA

File No: .....

1. GENERAL DETAILS

Name of applicant: .....

Status: Owner/Occupier/Lessee: ..... ID NO.: .....
Postal Address: ..... Postal Code: .....
Farm Unit: ..... Magisterial District: .....
Name of Registered owner: .....
Tel: ..... Cell: ..... Fax: .....
(Attach a copy of title deed if available)

Description according to Deed of Transfer	Deed of Transfer		Extent (ha)
	Number	Date	
		Total size (ha)	

Annual Rainfall: ..... mm

2. TYPE OF APPLICATION (Mark with X where applicable)

	2.1 Denuding virgin soil of natural vegetation		2.5 Damaging or destroying of vegetation in a natural water course flood area
	2.2 Cultivation of virgin soil by disturbing the top soil mechanically.		2.6 Damaging or destroying of vegetation within 10 metres horizontally outside a water course flood area.
	2.3 Cultivation by mechanically disturbing the top soil of land with a slope of more than 20%.		2.7 Mechanically disturbing the top soil in flood area of a water course.
	2.4 Burning of Crop Residue and other Organic material on lands.		2.8 Mechanically disturbing the top soil within 10 metres horizontally outside a water course.

3. REASON

Par. No.	Reason(s)

4. DETAILS OF AREA CONCERNED

Unit No.	Size (ha)	Soil Form	Series/Family	Effective Depth (mm)	Slope of ground (%)	Water-and/or Wind-erosion Potential

I understand not to commence with any action before written approval has been obtained. No other area except for those marked on the map will be disturbed.

Signature of applicant: ..... Date: .....

The area(s) was/were pointed out to me by ..... and is/are indicated on the attached map No. ..... dated as .....

Signature of Officer: ..... Date: .....

From:Agriculture To:00865677365 28/06/2012 12:32 #077 P.001/003

PUBLIC INVOLVEMENT PROCESS REPLY FORM

DRAFT BASIC ASSESSMENT REPORT COMMENT FORM

Expansion of Agriculture on Falcon Ridge Farm, Portion 274 of Strathsomers Estate No. 42 in the Sundays River Valley Municipality

Applicant: Habata Boerdery (Pty) Ltd

Listed Activity: GN R546 Activity 14 (a) (i).

Return Completed Reply Form by **13 July 2012**, to:

Public Process Consultants, PO Box 27688, Greenacres 6057
Phone: 041 – 374 8426 or Fax 041-373 2002 or Email sandy@publicprocess.co.za

Please Complete all Relevant Sections Below

Please provide your full contact details: our Ref. 20.1.1.17 Hg-2

FIRST NAME: GCINILE	*SURNAME:* DUMSE
ORGANISATION: DAFF-LURM	*POSITION:* RESOURCE AUDITOR
POSTAL ADDRESS: P/BAG X 4, TE COMA, EAST LONDON	
CODE: 5214	
PHONE: 0437046800/10	*FAX:* 043 704 6812
CELL: 078 418 1723	*EMAIL:* GcinileD@daff.gov.za

Please clearly state any interest that you may have in this matter.

Please clearly outline comments you may have in response to the Draft Basic Assessment Report (use additional pages if required).

agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Directorate: Land Use and Soil Management
Private Bag x 4, East London 5214
Tel: 043 704 6810/6800 **Fax:** 043 704 6812 **e-mail:** GcinileD@nda.agric.za
Enquiries: G. P. Dumse **Our Ref:** 20.1.1.17_reg_2

Public Process Consultants
P. O. Box 27688
Greenacres
6057

Attention: Ms Sandy Wren

Dear Madam

DAFF-LUSM COMMENTS FOR THE PROPOSED EXPANSION OF AGRICULTURE ON FARM FALCON RIDGE FARM, SUNDAYS RIVER VALLEY MUNICIPALITY

Please consider the following additional comments regarding the proposed establishment of new lands on the property.

The use of Category 2 species for wind breakers is an accepted practise on the citrus and deciduous fruit orchard. The provisions of Regulation 15 (B) (a) of the CARA Act 43 of 1983 require land users to apply for the demarcation permit before they can establish wind breakers with Category 2 species. Category 2 plants may not occur within 30 metres from the 1:50 year flood line of watercourses or wetlands unless authorisation has been obtained in terms of the NWA. The use of Category 3 plants for wind breakers is therefore prohibited to plant new plants or species.

The application for demarcation permit is therefore attached

Thanking you

Resource Auditor: Western Region

Date: 28 June 2012

agriculture,
forestry & fisheries
Department:
Agriculture, forestry & fisheries
REPUBLIC OF SOUTH AFRICA
Directorate: Land Use & Soil Management
Private Bag x 4 ▪ Tecoma ▪ 5214
Tel: (**043) 704 6800** ▪ Fax: (**043) 704 6812**

DEMARCATION APPLICATION

Application for Demarcation of Category 2 Species in terms of Regulation 15B (2) (a)
of the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)

***IMPORTANT:* Please complete in full where after the application must be submitted to the above address.**

1. Applicant: ……..……..
2. Postal address: ……..…….

   ……..…
3. Telephone number: ……. Fax: ……..……..

   Cell phone: …… Contact Name: ……..……..…
4. Farm Name & Farm Number (description, e.g. Portion 2 of the farm Witrivier 245):

   ……..
5. District/Area: …….
6. Location (**attach** a sketch or map of location and indicate (x) where trees will be planted)

   ……..……
   …
7. 7.1 Species to be planted: …….

   3.

   7.2 Total number of trees to be planted: …….....

   7.3 Total hectare for demarcation (if woodlot or plantation): ……
8. Commercial purpose [e.g. windbreak / replacement (“inboet”) / woodlot / animal fodder]

   ……

_____	_____
Signature: Land user Land Owner	Signature:
Date: …….	Date:
……	

Office only:

1. Comments from DWAF: ……..……

2. Comments from DEDEA: ……..……

APPENDIX G (v): EAP'S CV

Curriculum Vitae (CV)
For

PAUL-PIERRE STEYN

OBJECTIVE

This resume provides a summary of relevant employment, experience and educational background.

EXPERIENCE

2007–2010 Public Process Consultants, Port Elizabeth, SA

Environmental Scientist

Tasks and responsibilities:

- Provide assistant project management on Basic Assessment, as well as Scoping & Environmental Impact Assessments.
- Prepare Environmental Assessment Reports (Basic Assessment & Scoping and EIA) and Environmental Management Programs.
- Conduct Biophysical, Botanical and Ecological Assessments.
- Prepare Specialist Reports and Chapters in capacity as Botanical and Ecological Specialist.
- Conduct environmental audits and generate audit reports as Environmental Control Officer.
- Provide GIS capability, including basic mapping and basic spatial data analysis.
- Perform routine web-based data publication and management in order to maintain public review documents on the company website.

2000–2006 Nelson Mandela Metropolitan University, *Botany Dept.,* Port Elizabeth, SA

Contract Lecturer

Tasks and responsibilities:

- Prepare and present undergraduate and post graduate courses in Marine Botany, Plant Toxicology, Environmental Management, Plant Evolution and Systematics.
- Present practical courses in Botany and Botanical Techniques at undergraduate and post-graduate level.
- Supervise undergraduate and post-graduate (honors level) student research projects.
- Provide field support and supervision for research students.

2000–2006 SAB Institute for Environmental and Coastal Management, Port Elizabeth, SA

Independent Specialist Consultant – Short Term Contracts

Tasks and responsibilities:

- Provide specialist input, data collection and analysis for marine based projects

and Environmental Assessments.

- Contribute to Specialist Chapters and Environmental Reports.
- Conduct field work and data collection for environmental monitoring and assessment projects.

EDUCATION

1996 University of Port Elizabeth

Port Elizabeth, SA

- BSc - Botany and Zoology

1997 University of Port Elizabeth

Port Elizabeth, SA

- BSc Hons – Botany (Specialization – Marine Botany)

  Tank cultivation of the red alga *Plocamium corallorhiza*.

  Desiccation tolerance in intertidal seaweed *Gelidium pristoides*.

2000 University of Port Elizabeth

Port Elizabeth, SA

- MSc - Botany

  Dissertation: Comparative study of the production and suitability of two *Ulva* species as abalone fodder in a commercial culture system.

2009 Nelson Mandela Metropolitan University

Port Elizabeth, SA

- PhD (degree awarded 2009 - conferred at 2010 graduation ceremony)

  Thesis: The Ecophysiology of the agarophyte *Gelidium pristoides* towards commercial production.

INTERESTS

Marine Macroalgal Physiology, Marine Intertidal & Coastal Ecology, Mariculture, Conservation Planning.

REPORTS & PRESENTATIONS

REPORTS

Steyn, P. & Wren, S. 2009. Environmental Management Programme: Repair / Reconstruction of Chelmsford / Baakens Valley Low Level Bridge (DEDEA Ref No.: ECm1/386/M/08-91), Version 1.1 – 28 July, Prepared for SJW Civils, Prepared by: Paul-Pierre Steyn and Sandy Wren

Steyn, P. & Wren, S. 2009. Environmental Management Programme: New Brickmakerskloof Bridge, (DEDEA Ref. No.: ECm1/386/M/08-85), Version 1.0. Prepared for Basil Read - Newport JV.

Steyn, P. & Wren, S. 2009. Environmental Management Plan for the Construction and Operation of Broiler Facilities on Farm 690 Disco, Sundays River Valley Municipality. DEDEA Ref. No.: EC06 / 386 / 1(h)v / 08 – 140, Version 1.0. Prepared for Venter Family Trust.

Steyn, P. & Wren, S. 2009. Environmental Management Plan for the Construction and Operation of Broiler Facilities on Farm 191 Coegakammaskloof, Version 2. Prepared for Crown Chickens.

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CONFERENCE PRESENTATIONS

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Poster presentation at PSSA Conference 2000 (Stress response of the red alga Gelidium pristoides,

under exposed and immersed conditions.)

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Poster presentation at SAAB Conference 2002 (South African Association of Botanists). (Salinity and temperature tolerance in the intertidal rhodophyte Gelidium pristoides (Turner) Kuetzing.)

Poster presentation at PSSA Conference 2003. (Photosynthesis of Gelidium pristoides in response to temperature, salinity, irradiance, pH and Ca+)

Paper presented at South African Marine Science Symposium 2005 (Durban). (The Ecophysiology of Gelidium pristoides (Turner) Kuetzing: Towards commercial cultivation.)

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REFERENCES

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Prof E.E. Campbell, Head of Department - Department of Botany, Nelson Mandela Metropolitan University, Tel.: +27 41 504 2329, e-mail: Eileen.Campbell@nmmu.ac.za (former employer)

Ms S.J. Wren, Managing Member, Public Process Consultants, Tel. 0824909828, e-mail: sandy@publicprocess.co.za (current employer)

Declaration

I confirm that the above CV is an accurate description of my experience and qualifications and I agree to serve in the position indicated for me in the study for the duration/s and the location/s proposed.

14 May 2012

Signature of staff member

Date

APPENDIX G (vi): AUTHORITY CONTACT DETAILS

Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) – Cacadu Region, Eastern Cape
Mr Andries Struwig
Private Bag X 5001
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6057
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Fax 041 585 1958
andries.struwig@deaet.ecape.gov.za

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malomar@webmail.co.za

National Department of Agriculture
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Mr Gcinile Dumse
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Sundays River Valley Municipality
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Department of Water Affairs
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5200

FourieL4@dwa.gov.za

Ms Marisa Bloem
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Port Elizabeth
6000
Tel: 041 586 4884
bloemm@dwa.gov.za

APPENDIX G (vii): PROOF OF NOTIFICATION TO LANDOWNER

The applicant for the proposed development is the landowner of Falcon Ridge Farm, Portion 274 Strathsomers Estate No. 42. Proof of notification is therefore not required.

APPENDIX G (viii): DETAILS OF SPECIALISTS AND DECLARATION OF INTEREST

PROVINCE OF THE EASTERN CAPE
DEPARTMENT OF ECONOMIC DEVELOPMENT AND
ENVIRONMENTAL AFFAIRS

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	12/12/20/
NEAS Reference Number:	DEAT/EIA/
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

Expansion of Agriculture on Falcon Ridge Farm, Portion 274 of Strathsomers Estate No. 42 in the Sundays River Valley Municipality

Specialist:	Dr Johan Binneman		
Contact person:	Mr Kobus Reichert		
Postal address:	Eastern Cape Heritage Consultants P.O. Box 689, Jeffreys Bay		
Postal code:	6330	Cell:	0728006322
Telephone:	042 2960399	Fax:	
E-mail:	kobusreichert@yahoo.com		
Professional affiliation(s) (if any)	Member of the Association of Southern African Professional Archaeologists (ASAPA)		

Project Consultant:	Public Process Consultants		
Contact person:	Paul-Pierre Steyn		
Postal address:	PO Box 27688		
Postal code:	6057	Cell:	084 302 8364
Telephone:	041 374 8426	Fax:	041 373 2002
E-mail:	paul@publicprocess.co.za		

4.2 The specialist appointed in terms of the Regulations_

I, **J.N.F. Binneman** , declare that --

General declaration:

- I act as the independent specialist 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 the specialist report relevant to this application, 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 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;
- all the particulars furnished by me in this form are true and correct; 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.

Signature of the specialist:

Name of company (if applicable):
Eastern Cape Heritage Consultants

Date: 17/7/2012

Signature of the Commissioner of Oaths:

(AMANDA MUDA DU PLEES

Date: 17/7/2012

2012 -07- 17

Designation:

Official stamp (below)

PROVINCE OF THE EASTERN CAPE
DEPARTMENT OF ECONOMIC DEVELOPMENT AND ENVIRONMENTAL AFFAIRS

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	12/12/20/
NEAS Reference Number:	DEAT/EIA/
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

Expansion of Agriculture on Falcon Ridge Farm, Portion 274 of Strathsomers Estate No. 42 in the Sundays River Valley Municipality

Specialist:	Dr F Ellis		
Contact person:	Dr F Ellis		
Postal address:	5 Forelle, Stellenbosch		
Postal code:	7600	Cell:	082 552 5475
Telephone:		Fax:	021 808 4791
E-mail:	fe@sun.ac.za		
Professional affiliation(s) (if any)	Pr. Sci. Nat. Reg. No. 400158/08		

Project Consultant:	Public Process Consultants		
Contact person:	Paul-Pierre Steyn		
Postal address:	PO Box 27688		
Postal code:	6057	Cell:	084 302 8364
Telephone:	041 374 8426	Fax:	041 373 2002
E-mail:	paul@publicprocess.co.za		

4.2 The specialist appointed in terms of the Regulations_

I, **Freddie Ellis** , declare that --

General declaration:

- I act as the independent specialist 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 the specialist report relevant to this application, 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 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;
- all the particulars furnished by me in this form are true and correct; 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.

Signature of the specialist:

SOUTH AFRICAN POST OFFICE

2012

Name of company (if applicable):

Thursday 12TH JULY 2012

Date:

Signature of the Commissioner of Oaths:

12TH JULY 2012

Date:

Comm of Oaths

Designation:

Official stamp (below)

TEL (021) 904-2162 (H)
(021) 889-5435 (W)
COMMISSIONER OF OATHS

APPENDIX G (IX): SPECIES LIST OF ALL THE PLANTS RECORDED ON THE PROPOSED FOOTPRINT AT PORTION 274 OF STRATHSOMERS ESTATE NO. 42

The plant species list for the site was based on collections made during a one day site visit to the study area on 23 May 2012. While the species list presented in this report is considered representative of the plant diversity at the study site, it is possible that certain plant species may have been dormant at the time of this site visit and are not reflected in this list nor recorded. However, this is not expected to significantly affect the findings of this report.

Species	Family	Clearings	Thicket	Status
Blepharis capensis	Acanthaceae	x		
Aizoon rigidum	Aizoaceae	x		
Carissa bispinosa	Apocynaceae		x	
Cynanchum elipticum	Apocynaceae		x	
Cussonia spicata	Araliaceae		x	
Asparagus aethiopicus	Asparagaceae	x	x	
Asparagus asparagoides	Asparagaceae		x	
Asparagus crassicladus	Asparagaceae	x		
Asparagus suaveolens	Asparagaceae		x	
Asparagus volubilis	Asparagaceae		x	
Aloe africana/ferox	Asphodelaceae		x	P
Aloe pluridens	Asphodelaceae		x	P
Bulbine frutescence	Asphodelaceae	x		
Bulbine narcissifolia	Asphodelaceae	x		
Felicia filifolia	Asteraceae	x	x	
Pentzia incana	Asteraceae	x		
Capsella bursa-pastoris	Brassicaceae	x		
Opuntia aurantiaca	Cactaceae	x		Exotic[1]
Opuntia ficus-indica	Cactaceae	x	x	Exotic[1]
Capparis sepiaria	Capparaceae		x	
Gymnosporia sp.	Celasteraceae		x	
Atriplex semibaccata	Chenopodiaceae	x		
Commelina sp (africanus)	Commelinaceae	x	x	
Cotyledon velutina	Crassulaceae		x	
Crassula expansa	Crassulaceae	x		
Crassula mesembryanthemoides	Crassulaceae	x		
Crassula muscosa	Crassulaceae		x	
Crassula pellucida L. subsp. marginalis	Crassulaceae	x	x	
Crassula perforata	Crassulaceae		x	
Kedrostis nana	Cucurbitaceae		x	
Euclea undulata	Ebenaceae		x	
Euphorbia ledienii	Euphorbiaceae		x	
Euphorbia mauritanica	Euphorbiaceae		x	
Euphorbia triangularis	Euphorbiaceae		x	
Jatropa capensis	Euphorbiaceae		x	
Acacia karroo	Fabaceae		x	
Schotia afra	Fabaceae		x	
Albuca sp.	Hyacinthaceae	x		

Ledebouria ensifolia	Hyacinthaceae	x	x	
Sanseviera hyacinthoides	Hyacinthaceae		x	
Plectranthus madagascariensis	Lamiaceae	x	x	
Cyphia sylvatica	Lobeliaceae		x	
Grewia sp. (occidentalis)	Malvaceae		x	
Hermannia althaeoides	Malvaceae	x	x	
Dosanthemum hispidum	Mesembryanthemaceae	x		P
Mesembryanthemum aitonis	Mesembryanthemaceae	x		P
Ruschia rigens	Mesembryanthemaceae	x		P
White flowered mesemb	Mesembryanthemaceae	x		P
Lampranthus sp.	Mesembryanthemaceae	x		P
Olea europea	Oleaceae		x	
Oxalis stellata	Oxalidaceae	x		
Plumbago auriculata	Plumbaginaceae		x	
Cynodon dactylon	Poaceae	x		
Digitaria eriantha	Poaceae	x		
Eragrostis curvula	Poaceae	x		
Eragrostis obtusa	Poaceae	x		
Panicum deustum	Poaceae	x	x	
Panicum maximum	Poaceae	x		
Themeda triandra	Poaceae	x		
Portulacaria afra	Portulacaceae		x	
Ptaeroxylon obliquum	Rutaceae		x	
Dovyalis rhamnoides (/rotundifolia)	Salicaceae		x	
Azima tetracantha	Salvadoraceae		x	
Pappea capensis	Sapindaceae		x	
Jamesbritennia microphylla	Scrophulariaceae	x		
Lycium cinerium	Solanaceae	x	x	
Viscum rotundifolium	Viscaceae		x	
Rhoicissus tridentata	Vitaceae		x	

P = Protected in terms of the Cape Nature & Environment Conservation Ordinance (No 19 of 1974)

Exotic[1] = Category 1 Exotic Weed in terms of the Conservation of Agricultural Resources Act Lists (Act 43 of 1983).

Clearing / Thicket = Indicates habitat within which the species was recorded.
In instances where both categories are marked the species was prevalent in the fringe between the thicket and the grassy clearings.

APPENDIX G (X) CONFIRMATION FROM LSRWUA OF WATER ENTITLEMENTS FOR HABATA BOERDERY

Lower Sundays River
Water User Association

Laer Sondagsrivier
Watergebruikersvereniging

PO Box / Posbus 10, Belmont Road, Sunland, 6115
Tel: 042 234 0038 Fax / Faks: 042 234 0022 • E-mail / E-pos: info@sundaysriverwater.co.za
VAT No. 4630120287

TO WHOM IT MAY CONCERN

14th February 2012

Hereby we confirm that Habata Boerdery BK / MSRS has –

Total scheduled water entitlements	669,0 ha
Total water per jaar	6021000 m3
Hired property from Mr Potgieter	39,4 ha
	354600 m3

Yours Faithfully

JHH DU PLESSIS
CHIEF EXECUTIVE OFFICER
LF/ll