# BASIC ASSESSMENT REPORT
## IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS AMENDED)

**October 2017**

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**PROJECT TITLE**

# COMPOST FACILITY AND FEEDLOT ON PORTION 6 OF FARM MIDDELBURG 10, ROBERTSON

## 12 March 2018

| REPORT TYPE CATEGORY | REPORT REFERENCE NUMBER | DATE OF REPORT |
|---|---|---|
| Pre-Application Basic Assessment Report (if applicable)[1] | 1347/16/PA | 12 June 2017 |
| Draft Basic Assessment Report[2] | 1004/18D | 12 March 2018 |
| ~~Final Basic Assessment Report[3] or, if applicable Revised Basic Assessment Report[4] (strikethrough what is not applicable)~~ | | |

**Notes:**

1. In terms of Regulation 40(3) potential or registered interested and affected parties, including the Competent Authority, may be provided with an opportunity to comment on the Basic Assessment Report prior to submission of the application but must again be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority. The Basic Assessment Report released for comment prior to submission of the application is referred to as the "Pre-Application Basic Assessment Report". The Basic Assessment Report made available for comment after submission of the application is referred to as the "Draft Basic Assessment Report". The Basic Assessment Report together with all the comments received on the report which is submitted to the Competent Authority for decision-making is referred to as the "Final Basic Assessment Report".

2. In terms of Regulation 19(1)(b) if significant changes have been made or significant new information has been added to the Draft Basic Assessment Report , which changes or information was not contained in the Draft Basic Assessment Report consulted on during the initial public participation process, then a Final Basic Assessment Report will not be submitted, but rather a "Revised Basic Assessment Report", which must be subjected to another public participation process of at least 30 days, must be submitted to the Competent Authority together with all the comments received.

## DEPARTMENTAL REFERENCE NUMBER(S)

| | |
|---|---|
| Pre-application reference number: | **16/3/3/6/7/1/B1/14/1347/16** |
| File reference number (EIA): | **16/3/3/1/B1/14/1004/18** |
| NEAS reference number (EIA): | |
| | |
| File reference number (Waste): | **19/2/5/1/B1/14/WL0003/18** |
| NEAS reference number (Waste): | |
| | |
| File reference number (Air Quality): | NA |
| NEAS reference number (Air Quality): | NA |
| | |
| File reference number (Other): | NA |
| NEAS reference number (Other): | NA |

## CONTENT AND GENERAL REQUIREMENTS

**Note that:**

1. The content of the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended), any subsequent Circulars, and guidelines must be taken into account when completing this Basic Assessment Report Form.
2. This Basic Assessment Report is the standard report format which, in terms of Regulation 16(3) of the EIA Regulations, 2014 (as amended) must be used in all instances when preparing a Basic Assessment Report for Basic Assessment applications for an environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA")and the EIA Regulations, 2014 (as amended) and/or a waste management licence in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) ("NEM:WA"), and/or an atmospheric emission licence in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA") when the Western Cape Government: Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority/Licensing Authority.
3. This report form is current as of October 2017. It is the responsibility of the Applicant/ Environmental Assessment Practitioner ("EAP") to ascertain whether subsequent versions of the report form have been released by the Department. Visit the Department's website at **http://www.westerncape.gov.za/eadp** to check for the latest version of this checklist.
4. The required information must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The tables may be expanded where necessary.
5. The use of "not applicable" in the report must be done with circumspection. All applicable sections of this report form must be completed. Where "not applicable" is used, this may result in the refusal of the application.
6. While the different sections of the report form only provide space for provision of information related to one alternative, if more than one feasible and reasonable alternative is considered, the relevant section must be copied and completed for each alternative.
7. Unless protected by law, all information contained in, and attached to this report, will become public information on receipt by the competent authority. If information is not submitted with this report due to such information being protected by law, the applicant and/or EAP must declare such non-disclosure and provide the reasons for believing that the information is protected.
8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this report must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.
9. This report must be submitted to the Department and the contact details for doing so are provided below.
10. Where this Department is also identified as the Licencing Authority to decide applications under NEM:WA or NEM:AQA, the submission of the report must also be made as follows, for-
    - Waste management licence applications, this report must also (*i.e.*, another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (tel: 021-483-2756 and fax: 021-483-4425) at the same postal address as the Cape Town Office.
    - Atmospheric emissions licence applications, this report must also be (*i.e.*, another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (tel: 021 483 2798 and fax: 021 483 3254) at the same postal address as the Cape Town Office.

## DEPARTMENTAL DETAILS

| CAPE TOWN OFFICE | | GEORGE REGIONAL OFFICE |
|---|---|---|
| ~~**REGION 1**~~<br>~~**(City of Cape Town & West Coast District)**~~ | **REGION 2**<br>**(Cape Winelands District & Overberg District)** | ~~**REGION 3**~~<br>~~**(Central Karoo District & Eden District)**~~ |
| ~~Department of Environmental Affairs and Development Planning~~<br>~~Attention: Directorate: Development Management (Region 1)~~<br>~~Private Bag X 9086~~<br>~~Cape Town,~~<br>~~8000~~<br><br>~~Registry Office~~<br>~~1st Floor Utilitas Building~~<br>~~1 Dorp Street,~~<br>~~Cape Town~~<br><br>~~Queries should be directed to the Directorate: Development Management (Region 1) at:~~<br>~~Tel.: (021) 483-5829~~<br>~~Fax: (021) 483-4372~~ | Department of Environmental Affairs and Development Planning<br>Attention: Directorate: Development Management (Region 2)<br>Private Bag X 9086<br>Cape Town,<br>8000<br><br>Registry Office<br>1st Floor Utilitas Building<br>1 Dorp Street,<br>Cape Town<br><br>Queries should be directed to the Directorate: Development Management (Region 2) at:<br>Tel.: (021) 483-5842<br>Fax: (021) 483-3633 | ~~Department of Environmental Affairs and Development Planning~~<br>~~Attention: Directorate: Development Management (Region 3)~~<br>~~Private Bag X 6509~~<br>~~George,~~<br>~~6530~~<br><br>~~Registry Office~~<br>~~4th Floor, York Park Building~~<br>~~93 York Street~~<br>~~George~~<br><br>~~Queries should be directed to the Directorate: Development Management (Region 3) at:~~<br>~~Tel.: (044) 805-8600~~<br>~~Fax: (044) 805 8650~~ |

## TABLE OF CONTENTS:



## ACRONYMS USED IN THIS BASIC ASSESSMENT REPORT AND APPENDICES:

| | |
|---|---|
| BAR | Basic Assessment Report |
| CBA | Critical Biodiversity Area |
| DEA | National Department of Environmental Affairs |
| DEA&DP | Western Cape Government: Environmental Affairs and Development Planning |
| DWS | National Department of Water and Sanitation |
| EIA | Environmental Impact Assessment |
| EMPr | Environmental Management Programme |
| ESA | Ecological Support Area |
| HWC | Heritage Western Cape |
| I&APs | Interested and Affected Parties |
| NEMA | National Environmental Management Act, 1998 (Act No. 107 of 1998) |
| NEM:AQA | National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) |
| NEM:ICMA | National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) |
| NEM:WA | National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) |
| NHRA | National Heritage Resources Act, 1999 (Act No. 25 of 1999) |
| PPP | Public Participation Process |

## DETAILS OF THE APPLICANT

| | | | |
|---|---|---|---|
| Applicant / Organisation / Organ of State: | South African Farm Assured Meat Group cc | | |
| Contact person: | Mr. David Houghton | | |
| Postal address: | P.O. Box 895, Robertson | | |
| Telephone: | 023 626 6320 | Postal Code: | 6705 |
| Cellular: | 083 448 6838 | Fax: | 023 626 6040 |
| E-mail: | david@robab.co.za | | |

## DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

| | | | |
|---|---|---|---|
| Name of the EAP organisation: | Eco Impact Legal Consulting (Pty) Ltd | | |
| Person who compiled this Report: | Lauren Abrahams | | |
| EAP Reg. No.: | SACNASP Cand.Sci.Nat (Biological Science) no. 100126/12 | | |
| Contact Person (if not author): | NA | | |
| Postal address: | P.O. Box 45070, Claremont | | |
| Telephone: | 021 671 1660 | Postal Code: | 7735 |
| Cellular: | NA | Fax: | 021 671 9976 |
| E-mail: | admin@ecoimpact.co.za | | |
| EAP Qualifications: | B Tech Oceanography: Cape Peninsula University of Technology (2010) | | |

Please provide details of the lead EAP, including details on the expertise of the lead EAP responsible for the Basic Assessment process. Also attach his/her Curriculum Vitae to this BAR.

Ms Lauren Abrahams
Lauren Abrahams has completed her professional registration in terms of section 20(3) (b) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003) as a Candidate Natural Scientist in the field of practice Biological Science (Registration number 100126/12). She obtained her B Tech in Oceanography at the Cape Peninsula University of Technology in 2010.

Lauren has trained as an Environmental Assessment Practitioner since July 2015 and has been involved in the compilation, coordination and management of Basic Assessment Reports, Environmental Impact Assessments, Environmental Management Programmes, Waste Licence Applications, Water Use Licence Applications and Baseline Biodiversity Surveys for numerous clients.

## EXECUTIVE SUMMARY OF THE BASIC ASSESSMENT REPORT:

Due to the lack of capacity at a Class B municipal waste disposal facility (Ashton), the South African Farm Assured Meat Group CC (SAFAM) Robertson Abattoir, one of the largest employers in the Langeberg Municipal area with over 200 employees, was obliged to manage and dispose of the by-products (i.e. wastes derived from the slaughter process) from the Robertson Abattoir in the most environmental friendly way.

[These are not waste products since it is used as an ingredient to create compost.]
The disposal of the by-products on a portion of Ptn 6 of the farm Middelburg No 10, district Robertson started in February 2017 after consultation with the Langeberg Municipality, Cape Winelands District Municipality as well as the Directorate Waste Management of the Department of Environmental Affairs and Development Planning.

Since the capacity is below 10 tons per day at present and the product is utilized on the same premises, environmental authorization is not required. This facility will be capable of handling all organic general by-products ((“pensmis” (mainly water) and “derms”, blood, non-infectious condemned trim and non-infectious whole carcasses)) from the Robertson Abattoir and converting it to general use compost.

In addition, it is the intention to establish a sheep feedlot adjacent to the compost facility. The

capacity of the feedlot is 4500 lambs at any one time. The manure of the feedlot will be, together with the by-products of the abattoir and wood chips received from the Municipality, an essential raw material in producing compost.

**Compost Facility:**
A compost facility to recycle and treat abattoir by-products and organic waste to produce compost on approximately 3.6ha on Portion 6 of Farm Middelburg 10, Robertson. Construction of storm water cut-off channels and collection dams to contain and store all storm water generated on site for reuse and recycling onto the compost rows as part of the treatment and compost making process.

**Proposed Feedlot:**
The proposal also includes the development of a feedlot for the keeping of animals for commercial production on approximately 6000m2 on Portion 6 of Farm Middelburg 10, Robertson. The planned stock levels under the canopy are 4500 lambs at any one time depending upon site and age.

**SUMMARY OF ALTERNATIVES**
**Location alternatives** - A waste to one industry is an input/essential ingredient for another. The composting facility on the farm Middelburg offers currently the only solution for the handling of the by-products of Robertson Abattoir, one of the largest employment generators in the Langeberg area.

The location is desirable due to the rural character, topography, distance to water course, soil conditions and availability of services and infrastructure, and is also supported by the SDF.

The manufacturing of compost adding such animal by-products is not an established industry in South Africa, and successful overseas examples had to be studied. The operators are, however, eager to learn and strive to operate the compost facility without any detrimental impacts on the environment. The impacts on the immediate environment are already much lower than in the beginning of 2017 when it was initiated.

The establishment of the feedlot is proposed in a viable location. The manure will be used as an essential component of the composting facility and therefore these two land uses will be interdependent.

The uses applicable in this application are both needed and desirable in this location.

**Activity alternatives** -
**ESTABLISHMENT AND OPERATION OF A COMPOST FACILITY (*PREFERRED OPTION*):**
Composting is a managed biological decomposition process that converts organic matter into stable, humus-like material. In the case of mortality composting, the organic matter being converted includes the animal carcass. Composting is a process in which micro-organisms flourish with the proper mixture of bulking agents (e.g. woodchips), animal tissue, water and air.

**FEEDLOT (*PREFERRED OPTION*)**
The establishment of a feedlot on the proposed site will primarily ensure a consistent supply of lambs for the abattoir. SAFAM Robertson procures lambs from farmers who need to reduce their livestock numbers due to unfavourable environmental conditions. The feedlot will provide capacity for the keeping of these animals until they are in a market ready state. The activity associated with the feedlot is compatible with the activities associated with the compost facility; as such no other activity alternatives were investigated.
Considering the above, the composting and feedlot activities are the **PREFERRED ACTIVITY OPTION**.

**Layout alternatives –** According to the above guidelines, the compost plant is desirable in the proposed location. Although the feedlot will be located in the area earmarked for "extensive agriculture", it is already disturbed land further than 32m away from the side of the water course and situated between the kraal and compost plant that are all interdependent. Taking all of the above impacting factors into account the proposed layout is the only reasonable and feasible alternative available that would maximise the potential of the property as well as meet the size

requirements for each of the proposed activities.

**Technology alternatives** - Composting when done properly, the process consumes tissue, minimizes odours and produces quality finished compost. Five Standard Operating Procedures (SOPs) have been developed to monitor the successful operation of the composting site (attached):

- SOP 1: Compost Process Flow / Flow diagram
- SOP 2: Removal and Delivery of By-products
- SOP 3: Site Hygiene
- SOP 4: pH and Temperature Testing and Recording
- SOP 5: Pest Control

These were developed in December 2016 and March 2017 and were updated in May 2017. It is a learning curve in South Africa and the current operation has improved to a large extent over the last few months.

Forms that needed to be completed by the workers throughout the process are included as part of the operation EMPr.

The operation of the feedlot will adhere to strict management and monitoring standards. Each lamb will be marked and monitored, dosed as required and transported subject to the requirements of the abattoir. The operation is audited/monitored on a regularly basis to ensure that the feedlot and abattoir adhere to the required standards.

**Operational alternatives** - The review and improvement of SOPs and the related forms will improve operations of the facility thus reducing the negative impacts associated with the activity. The implementation of strict procedures and protocols will ensure that negative impacts that are effectively mitigated.

The implementation of the existing Standard Operating Procedures (SOPs) for the composting facility as well as the SOPs of the feedlot will mitigate the impacts effectively. These will be monitored regularly. Problems experienced / complaints received will be recorded in a complaints register and addressed when required.

**The No-Go Option**- The No-Go option will result in the site remaining as is presently, underutilized Agricultural land.

A waste to one industry is an input/essential ingredient for another.

The composting facility on the farm Middelburg offers currently the only solution for the handling of the by-products of Robertson Abattoir, one of the largest employment generators in the Langeberg area.

The location is desirable due to the rural character, topography, distance to water course, soil conditions and availability of services and infrastructure, and is also supported by the SDF.

The manufacturing of compost adding such animal by-products is not an established industry in South Africa, and successful overseas examples had to be studied. The operators are, however, eager to learn and strive to operate the compost facility without any detrimental impacts on the environment. The impacts on the immediate environment are already much lower than in the beginning of 2017 when it was initiated. The establishment of the feedlot is proposed in a viable location. The manure will be used as an essential component of the composting facility and therefore these two land uses will be interdependent.

**SUMMARY OF IMPACTS**

Positive:

- Employment opportunities (construction and operational)
- Negative:
- Disturbance to subsurface geological layers

- Surface and ground water pollution
- Compaction of soil
- Increase in storm water / waste water run-off
- Human/Wildlife interactions
- Emissions and air quality
- Impact on sensitive environments (rivers, wetlands etc)
- Increase in traffic
- Impact on planning policies
- Noise
- Flies
- Odours
- Impact of the proposed development on archaeological, paleontological and heritage remains
- Visual/sense of place

The No-Go option will result in the site remaining as is presently.

**RECOMMENDATION OF THE EAP**
All possible impacts on the environment have been assessed and can be mitigated and managed.

The assessment did not lead to any fatal flaws if the development is approved, provided that the facility is operated in terms of all relevant applicable legislation and the EMPr management activities implemented.

## SECTION A: PROJECT INFORMATION

### 1. ACTIVITY LOCATION

| | |
|---|---|
| Location of all proposed sites: | The proposed development is situated approximately 14km northwest of Robertson, east of the R60. |
| Farm / Erf name(s) and number(s) (including Portions thereof) for each proposed site: | Portion 6 of Farm Middelburg 10, Robertson |
| Property size(s) in $m^2$ for each proposed site: | 758.0305ha |
| Development footprint size(s) in $m^2$: | Total disturbed area = 8.6ha (compost facility 3.6ha; feedlot 6000$m^2$) |
| Surveyor General (SG) 21 digit code for each proposed site: | C06500000000001000006 |

### 2. PROJECT DESCRIPTION

| (a) Is the project a new development? If "NO", explain: | YES | ~~NO~~ |
|---|---|---|
| N/A | | |

(b) Provide a detailed description of the scope of the proposed development (project).

Due to the lack of capacity at a Class B municipal waste disposal facility (Ashton), the South African Farm Assured Meat Group CC (SAFAM) Robertson Abattoir, one of the largest employers in the Langeberg Municipal area with over 200 employees, was obliged to manage and dispose of the by-products (i.e. wastes derived from the slaughter process) from the Robertson Abattoir in the most environmental friendly way.
[These are not waste products since it is used as an ingredient to create compost.]

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Since the capacity is below 10 tons per day at present and the product is utilized on the same premises, environmental authorization is not required. This facility will be capable of handling all organic general by-products (("pensmis" (mainly water) and "derms", blood, non-infectious condemned trim and non-infectious whole carcasses)) from the Robertson Abattoir and converting it to general use compost.

In addition, it is the intention to establish a sheep feedlot adjacent to the compost facility. The capacity of the feedlot is 4500 lambs at any one time. The manure of the feedlot will be, together with the by-products of the abattoir and wood chips received from the Municipality, an essential raw material in producing compost.

**Compost Facility:**
A compost facility to recycle and treat abattoir by-products and organic waste to produce compost on approximately 3.6ha on Portion 6 of Farm Middelburg 10, Robertson. Construction of storm water cut-off channels and collection dams to contain and store all storm water generated on site for reuse and recycling onto the compost rows as part of the treatment and compost making process.

**Proposed Feedlot:**
The proposal also includes the development of a feedlot for the keeping of animals for commercial production on approximately 6000m$^2$ on Portion 6 of Farm Middelburg 10, Robertson. The planned stock levels under the canopy are 4500 lambs at any one time depending upon site and age.

**Please note**: This description must relate to the listed and specified activities in paragraph (d) below.

(c) Please indicate the following periods that are recommended for inclusion in the environmental authorisation:

| | | |
|---|---|---|
| (i) | the period within which commencement must occur, | 5 years from EA granted |
| (ii) | the period for which the environmental authorisation should be granted and the date by which the activity must have been concluded, where the environmental authorisation does not include operational aspects; | 10 years |
| (iii) | the period that should be granted for the non-operational aspects of the environmental authorisation; and | 10 years |
| (iv) | the period that should be granted for the operational aspects of the environmental authorisation. | Until Decommissioning or Closure |

**Please note**: The Department must specify the abovementioned periods, where applicable, in an environmental authorisation. In terms of the period within which commencement must occur, the period must not exceed 10 years and must not be extended beyond such 10 year period, unless the process to amend the environmental authorisation contemplated in regulation 32 is followed.

(d) List all the listed activities triggered and being applied for.

**Please note**: The onus is on the applicant to ensure that all the applicable listed activities are applied for and assessed as part of the EIA process. Please refer to paragraph (b) above.

**EIA Regulations Listing Notices 1 and 3 of 2014 (as amended):**

| Listed Activity No(s): | Describe the relevant **Basic Assessment Activity (ies)** in writing as per **Listing Notice 1** (GN No. R. 983) | Describe the portion of the development that relates to the applicable listed activity as per the project description. | Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational. |
|---|---|---|---|
| 4 | The development and related operation of facilities or infrastructure for the concentration of animals in densities that exceed-<br>(i)20 square metres per large stock unit and more than 500 units per facility;<br>(ii)8 square meters per small stock unit and;<br>a .more than 1 000 units per facility excluding pigs where (b) applies; or<br>b. more than 250 pigs per facility excluding piglets that are not yet weaned;<br>(iii) 30 square metres per crocodile and more than 20 crocodiles per facility;<br>(iv)3 square metres per rabbit and more than 500 rabbits per facility; or<br>(v) 250 square metres per ostrich or emu and more than 50 ostriches or emus per facility. | The proposal includes the development of a feedlot for the keeping of animals for commercial production on approximately 6000m$^2$ of Portion 6 of Middelburg 10, Robertson. The planned stock levels under the canopy are 4500 lambs at any one time depending upon site and age. | Development and operational |
| 8 | The development and related operation of hatcheries or agri-industrial facilities outside industrial complexes where the development footprint covers an area of 2 000 square metres or more. | The development of a compost facility to recycle and treat abattoir and organic waste to produce compost on approximately 3.6ha. Construction of storm water cut-off channels and collection dam to contain and store all storm water generated on site for reuse and recycling onto the compost rows as part of the treatment and compost making process. The proposal also includes the development of a feedlot for the keeping of animals for commercial production on approximately 6000m$^2$ of Portion 6 of Middelburg 10, Robertson. The planned stock levels under the canopy are 4500 lambs at any one time depending upon site and age. | Development and operational |

| | | | |
|---|---|---|---|
| 28 | Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:<br>(i)will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or<br>(ii)will occur outside an urban excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes | The development of a compost facility to recycle and treat abattoir and organic waste to produce compost on approximately 3.6ha. Construction of storm water cut-off channels and collection dam to contain and store all storm water generated on site for reuse and recycling onto the compost rows as part of the treatment and compost making process. The proposal also includes the development of a feedlot for the keeping of animals for commercial production on approximately 6000m$^2$ of Portion 6 of Middelburg 10, Robertson. The planned stock levels under the canopy are 4500 lambs at any one time depending upon site and age. | Development |
| Listed Activity No(s): | Describe the relevant **Basic Assessment Activity (ies)** in writing as per **Listing Notice 3** (GN No. R. 985) | Describe the portion of the development that relates to the applicable listed activity as per the project description. | Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational. |
| NOT APPLICABLE | | | |

If the application is also for activities as per **Listing Notice 2** and permission was granted to subject the application to Basic Assessment, also indicate the applicable Listing Notice 2 activities: -

| | | |
|---|---|---|
| Activity No(s): | Provide the relevant **Scoping and EIR Listed Activity (ies)** as set out in **Listing Notice 2** (GN No. R. 984) | Describe the portion of the development as per the project description that relates to the applicable listed activity |
| NOT APPLICABLE | | |

**Waste management activities** in terms of the NEM: WA (GN No. 921):

| Category A Listed Activity No(s): | Describe the relevant Category A waste management activity in writing as per GN No. 921 | Describe the portion of the development that relates to the applicable listed activity as per the project description |
|---|---|---|
| 6 | The treatment of general waste using any form of treatment at a facility that has the capacity to process in excess of 10 tons but less than 100 tons. | The development of a compost facility to recycle and treat abattoir and organic waste to produce compost on approximately 3.6ha. Construction of storm water cut-off channels and collection dam to contain and store all storm water generated on site for reuse and recycling onto the compost rows as part of the treatment and compost making process. |
| 12 | The construction of a facility for a waste management activity listed in Category A of this Schedule (not in isolation to associated waste management activity). | The development of a compost facility to recycle and treat abattoir and organic waste to produce compost on approximately 3.6ha. Construction of storm water cut-off channels and collection dam to contain and store all storm water |

| | | |
|---|---|---|
| | | generated on site for reuse and recycling onto the compost rows as part of the treatment and compost making process. |

**Note:** If any waste management activities are applicable, the **Listed Waste Management Activities Additional Information Annexure** must be completed and attached to this Basic Assessment Report as **Appendix I.**

**Atmospheric emission activities** in terms of the NEM: AQA (GN No. 893):

| Listed Activity No(s): | Describe the relevant atmospheric emission activity in writing as per GN No. 893 | Describe the portion of the development that relates to the applicable listed activity as per the project description. |
|---|---|---|
| NOT APPLICABLE | | |

(e) Provide details of all components (including associated structures and infrastructure) of the proposed development and attach diagrams (*e.g.,* architectural drawings or perspectives, engineering drawings, process flowcharts, *etc*.).

| Buildings<br>Provide brief description below: | YES | ~~NO~~ |
|---|---|---|
| The proposal also includes the development of a feedlot for the keeping of animals for commercial production on approximately 6000m$^2$ on Portion 6 of Farm Middelburg 10, Robertson. The feedlot will comprise of a steel structure. The steel store consist of 9 demarcated areas on each side (18 in total) can accommodate 250 lambs each, therefore a total of 4500 lambs on any one time. One of the camps are left empty to nurse sick lambs. Feeding is provided constantly, therefore the lambs do not have to eat all at the same time. The 18 demarcated areas are larger than the steel structure and are lengthened to both sides of the roof. The total sheep feedlot is 6000m$^2$ in extent. | | |
| Infrastructure (*e.g.,* roads, power and water supply/ storage)<br>Provide brief description below: | YES | ~~NO~~ |

**Compost Facility:**

- Two entrances with gates, one to the existing composting facility and one to the proposed feedlot and remainder of the farm;
- The most southern access road will be used by the honey suckers (blood trucks) (two-way); the skip trucks with by-products and condemned carcasses will use the road to the western side of the windrows (two-way).
- The last mentioned road will also be used by trucks off-loading wood chips from the Municipality (already chipped) in the north-eastern corner of the application site, as well as the end product (compost) from the windrows to the storing area on the lowest level, near the gate, for easy distribution. The compost will be put in bags to be sold to farmers or be sold in bulk. Because of the high clay content (25%), no hardened surfaces for the storing of the raw or the end products are necessary.
- The internal roads on the Site Plan were created informally over time by moving around on the application site. This may change when the feedlot is in operation and the best practices / logistics between the two interdependent facilities are established.
- Several windrows and bulk pile/s (for whole carcasses) of approximate 1,5m high and 2m wide alongside the south-eastern boundary of the farm and 235m away from the Middelstekloof River; These windrows will rotate/move in the 3,6 ha area allocated as and when the compost is ready and removed.
- Two dams were constructed at the lowest point on the terrain. The north-eastern dam is constructed to catch run-off storm water emanating from the lands and area above the dam, whilst the south-western, smaller dam is for the effluent from the windrows and feedlot. Run off water (only in rainy seasons) from the windrows will be caught by the cut-off weir/barrier on the western side of the windrows from where it will flow with gravity in a channel to the lowest dam. Compacted drainage channels around the feedlot will direct run off water also to the lowest dam. [There is no need for a plastic or concrete lining of the drainage canal according to the soil study.]
- This water will be re-used when required to wet the windrows on top of the rows.

**Feedlot:**

The steel store consist of 9 demarcated areas on each side (18 in total) can accommodate 250 lambs each, therefore a total of 4500 lambs on any one time. One of the camps are left empty to nurse sick lambs.

Feeding is provided constantly, therefore the lambs do not have to eat all at the same time. The 18 demarcated areas are larger than the steel structure and are lengthened to both sides of the roof.

| | | |
|---|---|---|
| The total sheep feedlot is 6000m2 in extent. | | |
| Processing activities (*e.g.,* manufacturing, storage, distribution)<br>Provide brief description below: | ~~YES~~ | NO |
| NOT APPLICABLE | | |
| Storage facilities for raw materials and products (*e.g.,* volume and substances to be stored)<br>Provide brief description below: | ~~YES~~ | NO |
| A bulking agent, i.e. woodchips is used to ensure that a higher volume of compost can be produced. Woodchips are added up to a total of 30m$^3$ per day. The woodchips will be stored in a demarcated area as per the site development plan. No animal by-product will be stockpiled. | | |
| Storage and treatment facilities for effluent, wastewater or sewage:<br>Provide brief description below: | YES | ~~NO~~ |
| The development of a compost facility to recycle and treat abattoir and organic waste to produce compost on approximately 3.6ha. Construction of storm water cut-off channels and collection dams to contain and store all storm water generated on site for reuse and recycling onto the compost rows as part of the treatment and compost making process. | | |
| Storage and treatment of solid waste<br>Provide brief description below: | ~~YES~~ | NO |
| The development of a compost facility to recycle and treat abattoir and organic waste to produce compost on approximately 3.6ha. Construction of storm water cut-off channels and collection dams to contain and store all storm water generated on site for reuse and recycling onto the compost rows as part of the treatment and compost making process. | | |
| Facilities associated with the release of emissions or pollution.<br>Provide brief description below: | ~~YES~~ | NO |
| NOT APPLICABLE | | |
| Other activities (*e.g.,* water abstraction activities, crop planting activities) –<br>Provide brief description below: | ~~YES~~ | NO |
| NOT APPLICABLE | | |

## 3. PHYSICAL SIZE OF THE PROPOSED DEVELOPMENT

| | | |
|---|---|---|
| (a) Property size(s): Indicate the size of all the properties (cadastral units) on which the development proposal is to be undertaken | 402.19ha | m$^2$ |
| (b) Size of the facility: Indicate the size of the facility where the development proposal is to be undertaken | Compost Facility 3.6ha<br>Feedlot 6000m$^2$ | m$^2$ |
| (c) Development footprint: Indicate the area that will be physically altered as a result of undertaking any development proposal (*i.e.,* the physical size of the development together with all its associated structures and infrastructure) | Total Disturbed area 8.6ha | m$^2$ |
| (d) Size of the activity: Indicate the physical size (footprint) of the development proposal | Compost Facility 3.6ha<br>Feedlot 6000m$^2$ | m$^2$ |
| (e) For linear development proposals: Indicate the length (L) and width (W) of the development proposal | (L) **NA** | m |
| | (W) **NA** | m |
| (f) For storage facilities: Indicate the volume of the storage facility | Compost Facility 3.6ha<br>Feedlot 6000m$^2$ | m$^3$ |
| (g) For sewage/effluent treatment facilities: Indicate the volume of the facility<br>(Note: the maximum design capacity must be indicated | Compost Facility 3.6ha<br>Feedlot 6000m$^2$ | m$^3$ |

## 4. SITE ACCESS

| | | |
|---|---|---|
| (a) Is there an existing access road? | YES | ~~NO~~ |
| (b) If no, what is the distance in (m) over which a new access road will be built? | NA m | |

(c) Describe the type of access road planned:

| |
|---|
| NA |

**Please note:** The position of the proposed access road must be indicated on the site plan.

## 5. DESCRIPTION OF THE PROPERTY (IES) ON WHICH THE LISTED ACTIVITY (IES) ARE TO BE UNDERTAKEN AND THE LOCATION OF THE LISTED ACTIVITY (IES) ON THE PROPERTY

5.1 Provide a description of the property on which the listed activity (ies) is/are to be undertaken and the location of the listed activity (ies) on the property, as well as of all alternative properties and locations (duplicate section below as required).

The proposed development is situated approximately 14km northwest of Robertson, east of the R60. Take the turn off at the Langvlei Station off the R60 in an eastern direction towards the Lime Mine. Turn left (north) on the gravel road after approximately 2km and follow the road for approximately 2km. The site is on the eastern (right) of the gravel road.

| Indicate the position of the activity using the latitude and longitude of the centre point of the site. The co-ordinates must be in degrees, minutes and seconds. The minutes should be given to at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection. | **Latitude (S):** (deg.; min.; sec) | | | **Longitude (E):** (deg.; min.; sec.) | | |
|---|---|---|---|---|---|---|
| **Compost Facility** | 33° | 43' | 51.05" | 19° | 44‘ | 37.09“ |
| **Feedlot** | 33° | 43‘ | 42.01“ | 19° | 44‘ | 52.01“ |

**Note**: For land where the property has not been defined, the coordinates of the area within which the development is proposed must be provided in an addendum to this report.

5.2 Provide a description of the area where the aquatic or ocean-based activity(ies) is/are to be undertaken and the location of the activity(ies) and alternative sites (if applicable).

NOT APPLICABLE

| | **Latitude (S):** (deg.; min.; sec) | | | **Longitude (E):** (deg.; min.; sec) | | |
|---|---|---|---|---|---|---|
| Coordinates of the boundary /perimeter of all proposed aquatic or ocean-based activities (sites) (if applicable): | ° | ' | " | ° | ' | " |
| | ° | ' | " | ° | ' | " |
| | ° | ' | " | ° | ' | " |
| | ° | ' | " | ° | ' | " |

5.3 For a linear development proposal please provide a description and coordinates of the corridor in which the proposed development will be undertaken (if applicable).

NOT APPLICABLE

| For linear activities: | **Latitude (S):** (deg.; min.; sec) | | | **Longitude (E):** (deg.; min.; sec) | | |
|---|---|---|---|---|---|---|
| • Starting point of the activity | ° | ‘ | “ | ° | ‘ | “ |
| • Middle point of the activity | ° | ‘ | “ | ° | ‘ | “ |
| • End point of the activity | ° | ‘ | “ | ° | ‘ | “ |

**Note**: For linear development proposals longer than 1000m, please provide an addendum with co-ordinates taken every 250m along the route. All-important waypoints must be indicated and the GIS shape file provided digitally.

5.4 Provide a location map (see below) as **Appendix A** to this report that shows the location of the proposed development and associated structures and infrastructure on the property; as well as a detailed site development plan / site map (see below) as **Appendix B** to this report; and if applicable, all alternative properties and locations. The GIS shape files (.shp) for maps / site development plans must be included in the electronic copy of the report submitted to the competent authority.

| | |
|---|---|
| Locality Map: | The scale of the locality map must be at least 1:50 000.<br>For linear development proposals of more than 25 kilometres, a smaller scale *e.g.*, 1:250 000 can be used. The scale must be indicated on the map.<br>The map must indicate the following:<br>• an accurate indication of the project site position as well as the positions of the alternative sites, if any;<br>• road names or numbers of all the major roads as well as the roads that provide access to the site(s)<br>• a north arrow;<br>• a legend;<br>• a linear scale;<br>• the prevailing wind direction (during November to April and during May to October); and<br>• GPS co-ordinates (to indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must |

| | |
|---|---|
| | be used in all cases is the WGS84 spheroid in a national or local projection).<br><br>For an ocean-based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken.<br><br>Coordinates must be provided in degrees, minutes and seconds using the Hartebeesthoek94; WGS84 co-ordinate system. |

| | |
|---|---|
| Site Plan: | Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following:<br>• The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be indicated on the plan, preferably together with a linear scale.<br>• The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan.<br>• The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be indicated on the site plan.<br>• The position of each element of the application as well as any other structures on the site must be indicated on the site plan.<br>• Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the development must be indicated on the site plan.<br>• Servitudes and an indication of the purpose of each servitude must be indicated on the site plan.<br>• Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to):<br>o Watercourses / Rivers / Wetlands - including the 32 meter set back line from the edge of the bank of a river/stream/wetland;<br>o Flood lines (*i.e.,* 1:100 year, 1:50 year and 1:10 year where applicable;<br>o Ridges;<br>o Cultural and historical features;<br>o Areas with indigenous vegetation (even if degraded or infested with alien species).<br>• Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted.<br>• North arrow<br><br>A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.<br><br>The GIS shape file for the site development plan(s) must be submitted digitally. |

### 6. SITE PHOTOGRAPHS

Colour photographs of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached as **Appendix C** to this report. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.

## SECTION B: DESCRIPTION OF THE RECEIVING ENVIRONMENT

### Site/Area Description

For linear development proposals (pipelines, *etc*.) as well as development proposals that cover very large sites, it may be necessary to complete copies of this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area that is covered by each copy on the Site Plan.

### 1. GRADIENT OF THE SITE

Indicate the general gradient of the sites (highlight the appropriate box).

| | | | |
|---|---|---|---|
| ~~Flat~~ | Flatter than 1:10 | ~~1:10 – 1:4~~ | ~~Steeper than 1:4~~ |

### 2. LOCATION IN LANDSCAPE

(a) Indicate the landform(s) that best describes the site (highlight the appropriate box (es).

| ~~Ridgeline~~ | ~~Plateau~~ | ~~Side slope of hill / mountain~~ | ~~Closed valley~~ | Open valley | ~~Plain~~ | ~~Undulating plain/low hills~~ | ~~Dune~~ | ~~Sea-front~~ |
|---|---|---|---|---|---|---|---|---|

(b) Provide a description of the location in the landscape.

The proposed development is situated at Middelburg Farm located approximately 14km northwest of Robertson, east of the R60. The area is rural with mainly vineyards, orchards, grazing and natural veld. The site is located at the foot of a mountain ridge, adjacent to a tributary of the Vink River. The gradient is uneven with small hills at the foothill of the Langeberg Mountain. The application site itself is already disturbed with a fall of 3.2%. An elevation profile of the property has been included below, indicating the position of the Feedlot and Composting Facility in relation to the receiving environment.

Portion 6 of the farm Middelburg No 10 belongs to Reben Trust and is 758,0308 hectares in extent according to Title Deed No T12255/2013.

The farm consists of the following:

- Store/shed built on a previous foundation near the Middelstekloof River (within 32m from the river and is addressed in a Basic Assessment Report to DEADP);
- Workers house (±70m$^2$);
- Several dams within the Middelstekloof River that were constructed by previous owners. During the last floods approximately nine years ago, most of the embankments of these dams have been damaged/destroyed. The two top dams are registered with BGCMA for 50 000m$^3$ or 7ha water as well as a borehole (14 000m$^3$ to be used for proposed sheep feedlot as agricultural use) and water from the mountain/river (14 000m$^3$ or 2ha per year);
- No water is needed for the compost plant;
- ±15 ha grazing wet by rain water and above-mentioned 9ha water;
- Kraal and weight station for individual livestock; and
- 8.6ha already transformed, application area consisting of bulk pile/s, windrows and two effluent dams. (This area was previously ploughed and planted with pastures and used for grazing purposes.)

The closest residential building is a farmhouse across the road, situated approximately 550m south-west of the application site. The nearest Buitenstekloof Guest Cottage is located approximately 2.36km to the north-east of the site.

The nearest cultivated lands on the neighbouring farm are approximately 550m away.

## 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

(a) Is the site(s) located on or near any of the following (highlight the appropriate boxes)?

| | | | |
|---|---|---|---|
| Shallow water table (less than 1.5m deep) | ~~YES~~ | NO | UNSURE |
| Seasonally wet soils (often close to water bodies) | ~~YES~~ | NO | ~~UNSURE~~ |
| Unstable rocky slopes or steep slopes with loose soil | ~~YES~~ | NO | ~~UNSURE~~ |
| Dispersive soils (soils that dissolve in water) | ~~YES~~ | NO | ~~UNSURE~~ |
| Soils with high clay content | YES | ~~NO~~ | ~~UNSURE~~ |
| Any other unstable soil or geological feature | ~~YES~~ | NO | ~~UNSURE~~ |
| An area sensitive to erosion | ~~YES~~ | NO | ~~UNSURE~~ |
| An area adjacent to or above an aquifer. | ~~YES~~ | NO | ~~UNSURE~~ |
| An area within 100m of a source of surface water | YES | ~~NO~~ | ~~UNSURE~~ |
| An area within 500m of a wetland | ~~YES~~ | NO | ~~UNSURE~~ |
| An area within the 1:50 year flood zone | ~~YES~~ | NO | UNSURE |
| A water source subject to tidal influence | ~~YES~~ | NO | ~~UNSURE~~ |

(b) If any of the answers to the above is "YES" or "UNSURE", specialist input may be requested by the Department. (Information in respect of the above will often be available at the planning sections of local authorities. The 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

(c) Indicate the type of geological formation underlying the site.

| Granite | Shale | Sandstone | Quartzite | Dolomite | Dolorite | Other (describe) |
|---|---|---|---|---|---|---|

Provide a description.

**Geology**

The site is underlain by geological formations derived from Conglomerate of the Enon Formation, Uitenhage Group, partly covered by terrace gravel.

***Source: Soils and Geology ENPAT, CapeFarmMapper, 12 June 2017.***

**Soil**

AVS conducted a soil study to establish the type of soils underlying the application site.

The soil characteristics provided an indication of the way the drainage system for the composting and feedlot will have to be implemented.

The study indicated that all the soils have a very high clay content (25%) that restrict the movement of water through the profile and therefore leaching of nutrients and salts from the soil into the groundwater will not easily occur.

The high salinity in the soils, coupled with high clay content, will lead to crusting on the surface restricting water infiltration and increasing run-off. The correct implementation of drainage will ensure that the infiltration of run-off water from the composting facility and feedlot into the underlying soils does not occur.

The chemical analyses of the soils indicated that the area is not suitable for intensive agriculture. Even farming with extensive crops e.g. pastures is unlikely to be successful due to the high salt content of the soils, and the inability to leach the salts from the profile.

The low rainfall (277mm/year) together with the high clay content prevents salts from leaching out of the profile. The compaction of the topsoil would further reduce the likelihood of salts leaching from the profile to contaminate groundwater. The compaction will also prevent the nutrients and salts from the manure and urine to penetrate the soil and contaminate the groundwater.

## 4. SURFACE WATER

(a) Indicate the surface water present on and or adjacent to the site and alternative sites (highlight the appropriate boxes)?

| | | | |
|---|---|---|---|
| Perennial River | ~~YES~~ | NO | ~~UNSURE~~ |
| Non-Perennial River | YES | ~~NO~~ | ~~UNSURE~~ |
| Permanent Wetland | ~~YES~~ | NO | ~~UNSURE~~ |
| Seasonal Wetland | ~~YES~~ | NO | ~~UNSURE~~ |
| Artificial Wetland | ~~YES~~ | NO | ~~UNSURE~~ |
| Estuarine / Lagoon | ~~YES~~ | NO | ~~UNSURE~~ |

(b) Provide a description.

During the site visit, the freshwater ecosystems that were identified were classified into relevant types according to the classification system for inland aquatic ecosystems in South Africa (Ollis *et al.* 2013)[1]. The approximate extent of wetlands was delineated following standard field-based procedures for the identification and delineation of wetlands (after DWAF 2005). The definition of "wetland" adopted for this investigation was that of the National Water Act (Act No. 36 of 1998), whereby a wetland is defined as "*land which is transitional between terrestrial and aquatic systems, where the water table is usually at, or near the surface, or the land is periodically covered with*

[1] Ollis DJ, Snaddon CD, Job NM and Mbona N (2013). Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland Systems. *SANBI Biodiversity Series 22*. South African National Biodiversity Institute, Pretoria.

*shallow water and which land in normal circumstances supports, or would support, vegetation adapted to life in saturated soil*."

Following this definition and the standard wetland delineation protocols, no wetlands were identified on or adjacent to the proposed feedlot and compost sites. However, a non-perennial river is situated on the northern edge of the proposed impacted area.

A non-perennial river is situated on the northern edge of the proposed site. This river is a tributary of the Vink River. The closest point from the development to the river bank is approximately 44m and the widest 109m. During the site visit, visual observations were made of the potentially affected river systems. Particular note was made of existing impacts to the integrity of the instream and riparian habitat provided by these systems.

Rivers in this longitudinal zone are typically characterised by a moderately steep, cobble-bed or mixed bedrock-cobble bed channel, with a narrow floodplain of sand, gravel or cobble often present adjacent to the river channel. It is presumed that these drainage lines have a naturally ephemeral (episodic) flow regime, only flowing for a short time after relatively major rainfall events.

The study area falls within the Southern Folded Mountains Ecoregion (after Kleynhans *et al*. 2005), near the transition to the Western Folded Mountains Ecoregion (to west) and the Southern Coastal Belt Ecoregion (to south). More specifically, the study area forms part of the lowlands of the Langeberg Mountains, situated relatively close to the Langeberg-West Mountain Catchment conservation area. The physiographical characteristics of the Southern Folded Mountains Ecoregion, in terms of terrain morphology, are typically characterised by a diverse topography of closed hills and mountains with a moderate to high relief (slopes with a gradient of >5% are predominant within the Ecoregion).

**Photo 1:** View of the upper reaches and catchment area of the non-perennial river.

The study area for the proposed development is thus somewhat atypical of the Ecoregion within which it falls, being located in a relatively non-mountainous part of the landscape. The rainfall seasonality and the vegetation types that occur within the Southern Folded Mountains Ecoregion are highly variable.

The soils associated with the river are classified as alluvial bottomlands, cobble-bed or mixed bedrock-cobble bed channel, with a narrow floodplain of sand, gravel or cobble often present adjacent to the river channel.

**Photo 2:** View of the soil profile of the non-perennial river next to the proposed feedlot and compost area.

**Photo 3:** View of the soil profile of the non-perennial river next to the proposed feedlot and compost area.

A non-perennial river which is a tributary of the Vink River was identified in the impacted area. This non-perennial river originates in the Langeberg Mountains at an elevation of approximately 700m above mean sea level east of the site and flows in a westerly direction for approximately 5.5km before it reaches the site and meets up with the Vink River approximately 300m west of the site. Two earthen instream storage dams were constructed in the river and 7 roads cross the river before it meets the impacted area.

**Photo 4:** View of one of the roads crossing the non-perennial river next to the proposed feedlot and compost area.

**Conclusions and recommendations:**

Following this definition and the standard wetland delineation protocols, no wetlands were identified on or adjacent to the proposed feedlot and compost sites. However, a non-perennial river is situated on the northern edge of the proposed impacted area.

The study area for the proposed development is thus somewhat atypical of the Ecoregion within which it falls, being located in a relatively non-mountainous part of the landscape. The rainfall seasonality and the vegetation types that occur within the Southern Folded Mountains Ecoregion are highly variable. The potentially affected river reach is characterised by a fairly incised single channel, approximately 10 to 20m wide, which has a bed comprising mostly cobbles and sand. *Vachellia karoo* is common and the dominant species in the river channel and valleys.

On the northern bank of the river, adjacent to the main channel of the potentially affected reach of the river, there is a floodplain area of approximately 30m in width. This floodplain area is dominated by *Galenia africana*. From the relatively dense growth of shrubs within the floodplain, it is evident that the floodplain does not get inundated nearly as frequently as it would have under natural conditions. The *Galenia africana* is also an indicator species of heavy impact and disturbance most likely as a result of animal grazing and trampling.

On the southern bank of the affected river reach, the river is characterised by a steep bank and an elevated area that creates a berm which will result in the water that is flowing in the river being confined to the channel and if it floods the water will overflow towards the north into the flood plain. All storm and rain water from the impacted areas flow away from the river as a result of this elevated area. No indigenous vegetation exists between the river bank and the feedlot and compost facility.

The overall results were that the relevant reach of the river is in a poor ecological condition, with a PES Category of D ("largely modified") for both the instream and riparian components of the river systems.

In terms of its EIS, the potentially affected reach of the river was rated to be of low/marginal EIS for biotic criteria, but with a low level of confidence due to the absence of biotic data, and of moderate EIS for habitat criteria. The overall EIS rating for the potentially affected reach of the river was that this system is of low-to-moderate ecological importance and sensitivity. Despite the low-to-moderate EIS of the river, it is important to bear in mind that this river forms an important ecological corridor and is a major tributary of the Vink River, which is ecologically important to the Breede River. In addition, the floodplain along the river has been recognised as an Aquatic CBA in the WCBPF and the C.A.P.E. Fine Scale Planning initiative for the Upper Breede Valley. This elevates the conservation

importance of the river corridor and implies that it should be protected from any further degradation.

Pollution of the river system due to the possible risk of contaminated storm water from the feedlot and compost facilities entering the river systems generally result in significant impacts and degradation of the freshwater ecological system and functioning.

In the light of the results generated through the application of the WRC Buffer Tool (Macfarlane *et al*. 2014) to the drainage line within the proposed impacted area, the retention of a buffer area of at least 32m in width along the sides of the drainage line is considered to be adequate if the above-mentioned mitigation measures for reducing risk as a result of the operational phase are implemented.

***Source: Freshwater Ecological Impact Assessment, 2018. Eco Impact Legal Consulting.***

## 5. THE SEAFRONT / SEA

(a) Is the site(s) located within any of the following areas? (highlight the appropriate boxes).
If the site or alternative site is closer than 100m to such an area, please provide the approximate distance in (m).

| AREA | YES | NO | UNSURE | If "YES": Distance to nearest area (m) |
|---|---|---|---|---|
| An area within 100m of the high water mark of the sea | ~~YES~~ | NO | ~~UNSURE~~ | |
| An area within 100m of the high water mark of an estuary/lagoon | ~~YES~~ | NO | ~~UNSURE~~ | |
| An area within the littoral active zone | ~~YES~~ | NO | ~~UNSURE~~ | |
| An area in the coastal public property | ~~YES~~ | NO | ~~UNSURE~~ | |
| Major anthropogenic structures | ~~YES~~ | NO | ~~UNSURE~~ | |
| An area within a Coastal Protection Zone | ~~YES~~ | NO | ~~UNSURE~~ | |
| An area seaward of the coastal management line | ~~YES~~ | NO | ~~UNSURE~~ | |
| An area within the high risk zone (20 years) | ~~YES~~ | NO | ~~UNSURE~~ | |
| An area within the medium risk zone (50 years) | ~~YES~~ | NO | ~~UNSURE~~ | |
| An area within the low risk zone (100 years) | ~~YES~~ | NO | ~~UNSURE~~ | |
| An area below the 5m contour | ~~YES~~ | NO | ~~UNSURE~~ | |
| An area within 1km from the high water mark of the sea | ~~YES~~ | NO | ~~UNSURE~~ | |
| A rocky beach | ~~YES~~ | NO | ~~UNSURE~~ | |
| A sandy beach | ~~YES~~ | NO | ~~UNSURE~~ | |

(b) If any of the answers to the above is "YES" or "UNSURE", specialist input may be requested by the Department. (The 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

## 6. BIODIVERSITY

**Note:** The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed development. To assist with the identification of the biodiversity occurring on site and the ecosystem status, consult http://bgis.sanbi.org or BGIShelp@sanbi.org . Information is also available on compact disc ("cd") from the Biodiversity-GIS Unit, Tel.: (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) must be provided as an overlay map on the property/site plan as **Appendix D** to this report.

(a) Highlight the applicable biodiversity planning categories of all areas on preferred and alternative sites and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category. Also describe the prevailing level of protection of the Critical Biodiversity Area ("CBA") and Ecological Support Area ("ESA") (how many hectares / what percentages are formally protected).

| **Systematic Biodiversity Planning Category** | CBA | ~~ESA~~ | ~~Other Natural Area ("ONA")~~ | No Natural Area Remaining ("NNR") |
|---|---|---|---|---|
| If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan and the conservation management objectives | The whole site is currently zoned as Agriculture 1. The site was previously ploughed and planted with pastures and used for | | | |

| | |
|---|---|
| | grazing purposes. From time to time livestock is placed on the farm to finish it until it reaches slaughter weight. As such the site is completely transformed with no natural area remaining. Vast patches of bare soil are evident in site photographs and aerial images.<br><br>According to the Western Cape Biodiversity Spatial Plan 2017 the area identified for the Feedlot has not been identified as a CBA or ESA. However the area identified for the Compost facility has been identified as a Terrestrial CBA. This is however not consistent with the existing state of the site, which has been completely transformed as a result of past and existing activities. |
| Describe the site's CBA/ESA quantitative values (hectares/percentage) in relation to the prevailing level of protection of CBA and ESA (how many hectares / what percentages are formally protected locally and in the province) | **NA** |

(b) Highlight and describe the habitat condition on site.

| **Habitat Condition** | **Percentage of habitat condition class (adding up to 100%) and area of each in square metre ($m^2$)** | | **Description and additional comments and observations (including additional insight into condition, *e.g.* poor land management practises, presence of quarries, grazing/harvesting regimes, *etc.*)** |
|---|---|---|---|
| Natural | 0% | $m^2$ | **NA** |
| Near Natural (includes areas with low to moderate level of alien invasive plants) | 0% | $m^2$ | **NA** |
| Degraded (includes areas heavily invaded by alien plants) | 0% | $m^2$ | **NA** |
| Transformed (Includes cultivation, dams, urban, plantation, roads, *etc.*) | 100% | $m^2$ | According to the Western Cape Biodiversity Spatial Plan 2017 the area identified for the Feedlot has not been identified as a CBA or ESA. However the area identified for the Compost facility has been identified as a Terrestrial CBA. This is however not consistent with the existing state of the site, which has been completely transformed as a result of past and existing activities. |

(c) Complete the table to indicate:
(i) The type of vegetation present on the site, including its ecosystem status; and
(ii) Whether an aquatic ecosystem is present on/or adjacent to the site.

| **Terrestrial Ecosystems** | | **Description of Ecosystem, Vegetation Type, Original Extent, Threshold (ha, %), Ecosystem Status** |
|---|---|---|
| Ecosystem threat status as per the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) | ~~Critically~~ | |
| | Endangered | Breede Alluvium Renosterveld<br>Status 2016: EN<br>Status 2014: Vulnerable (VU)<br>Status 2011: VU<br>Change: more threatened<br>Change Type: VU-EN<br>Change Year: 2016<br>***Source: Ecosystems threat Status, CapeFarmMapper, 07 March 2018.*** |

| | | |
|---|---|---|
| | | This is however not consistent with the existing state of the site, which has been completely transformed as a result of past and existing activities. |
| | ~~Vulnerable~~ | |
| | ~~Least Threatened~~ | |

| **Aquatic Ecosystems** | | | | | | |
|---|---|---|---|---|---|---|
| Wetland (including rivers, depressions, channelled and un-channelled wetlands, flats, seeps pans, and artificial wetlands) | | | Estuary | | Coastline | |
| ~~YES~~ | NO | ~~UNSURE~~ | ~~YES~~ | NO | ~~YES~~ | NO |

(d) Provide a description of the vegetation type and/or aquatic ecosystem present on the site, including any important biodiversity features/information identified on the site (e.g. threatened species and special habitats). Clearly describe the biodiversity targets and management objectives in this regard.

The whole site is currently zoned as Agriculture 1. The site was previously ploughed and planted with pastures and used for grazing purposes. From time to time livestock is placed on the farm to finish it until it reaches slaughter weight. As such the site is completely transformed with no natural area remaining. Vast patches of bare soil are evident in site photographs and aerial images.

According to the Western Cape Biodiversity Spatial Plan 2017 the area identified for the Feedlot has not been identified as a CBA or ESA. However the area identified for the Compost facility has been identified as a Terrestrial CBA. This is however not consistent with the existing state of the site, which has been completely transformed as a result of past and existing activities.

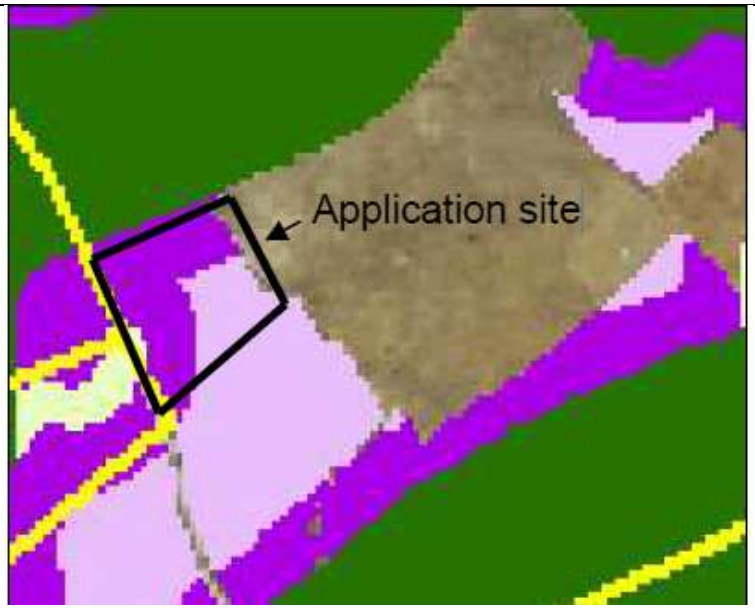
During the site visit, the freshwater ecosystems that were identified were classified into relevant types according to the classification system for inland aquatic ecosystems in South Africa (Ollis *et al.* 2013)[2]. The approximate extent of wetlands was delineated following standard field-based procedures for the identification and delineation of wetlands (after DWAF 2005). The definition of "wetland" adopted for this investigation was that of the National Water Act (Act No. 36 of 1998), whereby a wetland is defined as "*land which is transitional between terrestrial and aquatic systems, where the water table is usually at, or near the surface, or the land is periodically covered with shallow water and which land in normal circumstances supports, or would support, vegetation adapted to life in saturated soil*."

Following this definition and the standard wetland delineation protocols, no wetlands were identified on or adjacent to the proposed feedlot and compost sites. However, a non-perennial river is situated on the northern edge of the proposed impacted area.

A non-perennial river is situated on the northern edge of the proposed site. This river is a tributary of the Vink River. The closest point from the development to the river bank is approximately 44m and the widest 109m. During the site visit, visual observations were made of the potentially affected river systems. Particular note was made of existing impacts to the integrity of the instream and riparian habitat provided by these systems.

According to information received from the Municipality, and according to the Provincial Rural Guidelines of May 2009, the application site falls within different Spatial Planning Categories:

[2] Ollis DJ, Snaddon CD, Job NM and Mbona N (2013). Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland Systems. *SANBI Biodiversity Series 22*. South African National Biodiversity Institute, Pretoria.




- Green: Core 1 area: Critical biodiversity areas / no-go area to the north of the application site (Middelstekloof River)
- Dark purple: Buffer 1 area: Remnants of natural or near natural vegetation: Extensive agriculture
- Light purple: Buffer 2 Areas: Other natural areas, i.e. livestock production as dominant land use: Activities and uses directly to the primary agricultural enterprise, additional land uses to facilitate diversification and value adding e.g. local product processing, space extensive requirements such as nuisance and buffer requirements such as solid waste disposal sites, feedlots etc.
- Brown: Transformed area / Yellow: Cadastral boundaries (not correct)

The whole application site is already transformed and disturbed and is not consistent with the above.

According to the above guidelines, the compost plant is desirable in this location. Although the feedlot will be located in the area earmarked for "extensive agriculture", it is already disturbed land further than 32m away from the side of the water course and situated between the kraal and compost plant that are all interdependent.

The alignment of the ESKOM line across this area prohibits the feedlot to be located closer to the compost plant.

## 7. LAND USE OF THE SITE

**Note:** The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed development.

| | | | | |
|---|---|---|---|---|
| ~~Untransformed area~~ | ~~Low density residential~~ | ~~Medium density residential~~ | ~~High density residential~~ | ~~Informal residential~~ |
| ~~Retail~~ | ~~Commercial & warehousing~~ | ~~Light industrial~~ | ~~Medium industrial~~ | ~~Heavy industrial~~ |
| ~~Power station~~ | ~~Office/consulting room~~ | ~~Military or police base/station/compound~~ | ~~Casino/entertainment complex~~ | ~~Tourism and Hospitality facility~~ |
| ~~Open cast mine~~ | ~~Underground mine~~ | ~~Spoil heap or slimes dam~~ | ~~Quarry, sand or borrow pit~~ | Dam or reservoir |
| ~~Hospital/medical centre~~ | ~~School~~ | ~~Tertiary education facility~~ | ~~Church~~ | ~~Old age home~~ |
| ~~Sewage treatment plant~~ | ~~Train station or shunting yard~~ | ~~Railway line~~ | ~~Major road (4 lanes and more)~~ | ~~Airport~~ |
| ~~Harbour~~ | ~~Sport facilities~~ | ~~Golf course~~ | ~~Polo fields~~ | ~~Filling station~~ |
| ~~Landfill or waste treatment site~~ | ~~Plantation~~ | Agriculture | River, stream or wetland | ~~Nature conservation area~~ |
| ~~Mountain, koppie or ridge~~ | ~~Museum~~ | ~~Historical building~~ | ~~Graveyard~~ | ~~Archaeological site~~ |
| Other land uses (describe): | NA | | | |

(a) Provide a description.

Portion 6 of the farm Middelburg No 10 belongs to Reben Trust and is 758,0308 hectares in extent according to Title Deed No T12255/2013.

The farm consists of the following:

- Store/shed built on a previous foundation near the Middelstekloof River (within 32m from the river and is addressed in a Basic Assessment Report to DEADP);
- Workers house (±70m$^2$);
- Several dams within the Middelstekloof River that were constructed by previous owners. During the last floods approximately nine years ago, most of the embankments of these dams have been damaged/destroyed. The two top dams are registered with BGCMA for 50 000m$^3$ or 7ha water as well as a borehole (14 000m$^3$ to be used for proposed sheep feedlot as agricultural use) and water from the mountain/river (14 000m$^3$ or 2ha per year);
- No water is needed for the compost plant;
- ±15 ha grazing wet by rain water and above-mentioned 9ha water;
- Kraal and weight station for individual livestock; and
- 8.6ha already transformed, application area consisting of bulk pile/s, windrows and two effluent dams. (This area was previously ploughed and planted with pastures and used for grazing purposes.)

## 8. LAND USE CHARACTER OF THE SURROUNDING AREA

(a) Highlight the current land uses and/or prominent features that occur within +/- 500m radius of the site and neighbouring properties if these are located beyond 500m of the site.

**Note:** The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed development.

| | | | | |
|---|---|---|---|---|
| Untransformed area | ~~Low density residential~~ | ~~Medium density residential~~ | ~~High density residential~~ | ~~Informal residential~~ |
| ~~Retail~~ | ~~Commercial & warehousing~~ | ~~Light industrial~~ | ~~Medium industrial~~ | ~~Heavy industrial~~ |
| ~~Power station~~ | ~~Office/consulting room~~ | ~~Military or police base/station/compound~~ | ~~Casino/entertainment complex~~ | Tourism and Hospitality facility |
| ~~Open cast mine~~ | ~~Underground mine~~ | ~~Spoil heap or slimes dam~~ | ~~Quarry, sand or borrow pit~~ | Dam or reservoir |
| ~~Hospital/medical centre~~ | ~~School~~ | ~~Tertiary education facility~~ | ~~Church~~ | ~~Old age home~~ |
| ~~Sewage treatment plant~~ | ~~Train station or shunting yard~~ | ~~Railway line~~ | ~~Major road (4 lanes and more)~~ | ~~Airport~~ |
| ~~Harbour~~ | ~~Sport facilities~~ | ~~Golf course~~ | ~~Polo fields~~ | ~~Filling station~~ |
| ~~Landfill or waste treatment site~~ | ~~Plantation~~ | Agriculture | River, stream or wetland | Nature conservation area |
| Mountain, koppie or ridge | ~~Museum~~ | ~~Historical building~~ | ~~Graveyard~~ | ~~Archaeological site~~ |
| Other land uses (describe): | NA | | | |

(b) Provide a description, including the distance and direction to the nearest residential area, industrial area, agri-industrial area.

The proposed development site is located on the Middelburg Farm between Robertson and Worcester in the Western Cape. The site is approximately 14km from the town of Robertson which would be the closest residential and industrial areas in relation to the site.

The closest residential building is a farmhouse across the road, situated approximately 550m south-west of the application site. The nearest Buitenstekloof Guest Cottage is located approximately 2.36km to the north-east of the site.

The nearest cultivated lands on the neighbouring farm are approximately 550m away.

A Land Use map has been included in Appendix D indicating land uses within a 5km radius around the development area. The Map has been made using data available on CapeFarmMapper https://gis.elsenburg.com/apps/cfm/# as at 07 March 2018. There are a number of tourism activities that is not available in the dataset.

## 9. SOCIO-ECONOMIC ASPECTS

a) Describe the existing social and economic characteristics of the community in the vicinity of the proposed site, in order to provide baseline information (for example, population characteristics/demographics, level of education, the level of employment and unemployment in the area, available work force, seasonal migration patterns, major economic activities in the local municipality, gender aspects that might be of relevance to this project, *etc.*).

**Municipal Area:**
Roberston Compost proposed development is located in Langeberg is a Local Municipality within the Cape Winelands District Municipality (CWDM). The CWDM covers an approximate area of 22 309 km$^2$. The Langeberg Municipality covers a total area of approximately 4 517.4 km$^2$ (which includes 1184.54km$^2$ of former Cape Winelands District Municipal Area land. The former CWDMA area which now falls within the Langeberg Municipal Area consists mostly of extensive farming, natural veld and large game farms.

**Population:**
Langeberg includes the towns of Ashton (13325 people), Bonnievale (9092 people), McGregor (3125 people), Montagu (15170 people) and Robertson (27715 people) as well as the rural areas adjacent to and between these towns (29 292 people). 81% of the persons in the langeberg area are Afrikaans speaking and isiXhosa speaking.

**Socio-Economics:**
The Langeberg Municipality, is committed to the social and economic development of the people in the area, unemployment and a lack of skills development continue to be one of the biggest problems faced in the Langeberg area. As reported in the Langeberg Municipality Annual Report 2013/14 the Municipal Council has made provision in its budgets to subsidise 7000 indigent households. The average unemployment rate in Robertson in 23.9%.

Robertson households receive fairly good municipal services and most of the households use electricity for heating, cooking and lighting. The provision of low cost housing continues to be a major challenge for the municipality. If housing backlogs are to be addressed meaningfully, the rate and quantity of housing developments must be increased be the Langeberg Municipality.

**Tourism Opportunities:**
Robertson is the western gateway to the heart of Route 62, only 1 ½ hours leisurely drive from Cape Town. With 150 years of history, Robertson has grown into one of the most attractive Cape Winelands towns, with Victorian buildings, jacaranda-lined streets and beautiful gardens. Today, Robertson is one of the largest wine-producing regions in South Africa. The region may be best known for its wine but the variety of attractions and activities combined with spectacular scenery and the relaxed hospitality of the people ensures visitors an unforgettable stay.

**SAFAM Robertson Abattoir Background Information:**
As the numbers grew Hennie realized that he needed his own outlets to sell his product and in 1995 he opened 3 butchery shops in Worcester, Ceres and Robertson. Once these outlets were up and running to the high standards he desired he finally completed the meat supply chain. Hennie

spotted an opportunity within the meat industry, which was available due to its deregulation, by purchasing a Municipal abattoir in Robertson in 1998.

The initial standards of the abattoir were way short of what he believed in and so Hennie started on an aggressive phase of upgrading his abattoir to meet the highest of standards with regards to Animal Welfare, Quality and Food Safety. In a very short space of time the abattoir was able to meet the most demanding of South African Food Retail Standards. Because of his intense focus on quality and building relationships Hennie and his dedicated team have grown Robertson abattoir from initially employing only 18 employees to its current level of over 200. Robertson Abattoir is now one of the largest employers within its rural catchment area.

As the reputation of Robertson Abattoir's products grew so did the demand from likeminded customers who only wanted the best products on their shelves. A unique aspect of Robertson compared to other meat processors is its long-standing relationships with a few but very loyal customers. This loyalty has been a win-win for everyone. Robertson's customers receive the quality product they require whilst Robertson Abattoir has been able to constantly invest and upgrade the facilities to meet the most demanding of standards.

Despite producing between 3000 to 4000 lambs and 300 to 500 cattle per week Robertson Abattoir can count its main customers on one hand. We have supplied our two main customers for over 18 years.

This mutuality and long term thinking has enabled Robertson to not only constantly upgrade its facilities but also experiment with its customers to develop unique ways of producing the best lamb and beef within South Africa. Robertson has invested in their own research to look at production methods, which ensure the best eating quality products. These methods are simply put, unique to South Africa and only available through Robertson Abattoir.

Robertson is very proud that it has passed on this thinking of long-term relationships and mutuality to enable success and growth with its own suppliers. Robertson knows it can only produce the best products if it sources from the best farmers on a continuous basis. This flow back of loyalty down the supply chain allows farmers to invest in their businesses and produce the best quality market ready livestock in South Africa.

## 10. HISTORICAL AND CULTURAL ASPECTS

(a) Please be advised that if section 38 of the NHRA is applicable to your proposed development, you are requested to furnish this Department with written comment from Heritage Western Cape as part of your public participation process. Heritage Western Cape must be given an opportunity, together with the rest of the I&APs, to comment on any Pre-application BAR, a Draft BAR, and Revised BAR.

Section 38 of the NHRA states the following:
"*38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-*

*(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
*(b) the construction of a bridge or similar structure exceeding 50m in length;*
*(c) any development or other activity which will change the character of a site-*
*(i) exceeding 5 000m² in extent; or*
*(ii) involving three or more existing erven or subdivisions thereof; or*
*(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
*(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*
*(d) the re-zoning of a site exceeding 10 000m² in extent; or*
*(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,*

*must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development*".

(b) The impact on any national estate referred to in section 3(2), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii), of the NHRA, must also be investigated, assessed and evaluated. Section 3(2) states the following:
"*3(2) Without limiting the generality of subsection (1), the national estate may include—*
*(a) places, buildings, structures and equipment of cultural significance;*
*(b) places to which oral traditions are attached or which are associated with living heritage;*

*(c) historical settlements and townscapes;*
*(d) landscapes and natural features of cultural significance;*
*(e) geological sites of scientific or cultural importance;*
*(f) archaeological and palaeontological sites;*
*(g) graves and burial grounds, including—*
*(i) ancestral graves;*
*(ii) royal graves and graves of traditional leaders;*
*(iii) graves of victims of conflict;*
*(iv) graves of individuals designated by the Minister by notice in the Gazette;*
*(v) historical graves and cemeteries; and*
*(vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);*
*(h) sites of significance relating to the history of slavery in South Africa;*
*(i) movable objects, including—*
*(i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;*
*(ii) objects to which oral traditions are attached or which are associated with living heritage;*
*(iii) ethnographic art and objects;*
*(iv) military objects;*
*(v) objects of decorative or fine art;*
*(vi) objects of scientific or technological interest; and*
*(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996)".*

| | | | | |
|---|---|---|---|---|
| Is Section 38 of the NHRA applicable to the proposed development? | | YES | ~~NO~~ | ~~UNCERTAIN~~ |
| If YES or UNCERTAIN, explain: | The redevelopment of the property involves the rezoning of a site more than 10 000m² in extent. See HWC NID attached under **Appendix G**. | | | |
| Will the development impact on any national estate referred to in Section 3(2) of the NHRA? | | ~~YES~~ | NO | ~~UNCERTAIN~~ |
| **If YES or UNCERTAIN, explain:** | NA | | | |
| Will any building or structure older than 60 years be affected in any way? | | ~~YES~~ | NO | ~~UNCERTAIN~~ |
| If YES or UNCERTAIN, explain | NA | | | |
| Are there any signs of culturally or historically significant elements, as defined in section 2 of the NHRA, including Archaeological or paleontological sites, on or close (within 20m) to the site? | | ~~YES~~ | NO | ~~UNCERTAIN~~ |
| If YES or UNCERTAIN, explain: | NA | | | |

**Note:** If uncertain, the Department may request that specialist input be provided **and** Heritage Western Cape must provide comment on this aspect of the proposal. (Please note that a copy of the comments obtained from the Heritage Resources Authority must be appended to this report as Appendix E1).

## 11. APPLICABLE LEGISLATION, POLICIES, CIRCULARS AND/OR GUIDELINES

(a) Identify all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to the development proposal and associated listed activity(ies) being applied for and that have been considered in the preparation of the BAR.

| **LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS** | **ADMINISTERING AUTHORITY and how it is relevant to this application** | **TYPE Permit/license/authorisation/comment / relevant consideration** (*e.g.* rezoning or consent use, building plan approval, Water Use License and/or General Authorisation, License in terms of the SAHRA and CARA, coastal discharge permit, *etc.*) | **DATE** (if already obtained)**:** |
|---|---|---|---|
| National Environmental | Western Cape | Environmental Authorisation | In Process |

| | | | |
|---|---|---|---|
| Management Act, 1998 (Act No. 107 of 1998) [NEMA] and relevant regulations | Department of Environmental Affairs and Development Planning | Application | |
| National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [NEMWA] and relevant regulations | Western Cape Department of Environmental Affairs and Development Planning | Waste Management Licence Application | In Process |
| National Environmental Management: Biodiversity Act 10 of 2004 [NEMBA] | Western Cape Department of Environmental Affairs and Development Planning | | NA |
| National Environmental Management: Air Quality Act, 39 Of 2004 [NEMAQA] and Relevant Regulations | Western Cape Department of Environmental Affairs and Development Planning | NA | NA |
| National Water Act, 1998 (Act No. 36 of 1998) [NWA] and relevant regulations | Department of Water and Sanitation | NA | NA |
| Conservation Of Agricultural Resources Act, 43 Of 1983 [CARA] | National Department of Agriculture, forestry and Fisheries Western Cape Department of Agriculture | Weeds and the tolerance thereof. | NA |
| National Health Act, 61 of 2003 [NHA] | | Littering and causing a nuisance. | NA |
| Constitution of the Republic of South Africa, 1996 | | General application to individual rights of all on and adjacent to the sites. | NA |
| Fencing Act, 31 of 1963 | | NA | NA |
| National Building Regulations and Building Standards Act 103 of 1977 [NBRBSA]and relevant regulations | | NA | NA |
| National Heritage Resources Act 25 of 1999 [NHRA] | Heritage Western Cape South African Heritage Resource Agency | HWC NID submitted. | Final Comment Received |
| National Veld and Forest Fire Act 101 of 1998 [NVFFA] | | NA | NA |
| Fertilizers, Farm Feeds, Agricultural Remedies And Stock Remedies Act, 36 Of 1947 [FFFARSRA]and Relevant Regulations | National Department of Agriculture, forestry and Fisheries Western Cape Department of Agriculture | NA | NA |
| Western Cape Noise Control Regulations [P.N. 200/2003] | | Operation of the facility must comply with the requirements of these regulations. | NA |

| POLICY/ GUIDELINES | ADMINISTERING AUTHORITY |
|---|---|
| Guideline on Public Participation | Western Cape Department of Environmental Affairs and Development Planning |
| Guidelines on Alternatives | Western Cape Department of Environmental Affairs and Development Planning |
| Guideline on Need and desirability | Western Cape Department of Environmental Affairs and Development Planning |
| Guideline for Environmental Management Plans | Western Cape Department of Environmental |

| | |
|---|---|
| (EMP's) | Affairs and Development Planning |
| Circular EADP 0028/2014: "One Environmental Management System". | Western Cape Department of Environmental Affairs and Development Planning |
| Landowner's Guide: Human-Wildlife Conflict Sensible Solutions To Living With Wildlife | CapeNature |
| 3110: National Organic Waste Composting Strategy: Draft Guideline Document for Composting February 2013 | Department of Environmental Affairs |
| Waste Minimisation Guideline for Municipalities, 2015 | Western Cape Department of Environmental Affairs and Development Planning |

(b) Describe how the proposed development **complies with and responds** to the legislation and policy context, plans, guidelines, spatial tools, municipal development planning frameworks and instruments.

| **LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS** | **Describe how the proposed development complies with and responds:** |
|---|---|
| NEMA | Various general activities, including but not limited to, the control of emergency incidents and the care and remediation of environmental damage. |
| NEMWA | Listed waste management activities and the requirements for a license for usage of general waste. |
| NEMBA | The management and conservation of biological diversity and the sustainable use of indigenous biological resources. |
| NEMAQA | Activities that may affect the air quality on site and the environment surrounding it. |
| NWA | Impacts and pollution to ground and surface water. Assessed if a water use authorisation under section 21 is required. |
| CARA | Weeds and the tolerance thereof. |
| National Health Act | Littering and causing a nuisance. |
| Constitution of the RSA | General application to individual rights of all on and adjacent to the sites. |
| Fencing Act | The erection and maintenance of fences. |
| National Building Regulations and Building Standards Act | The erection of new buildings. |
| NHRA | Development of the site and dealing with graves and burial sites and any structures older than 60 years. |
| NVFFA | Any activities that could result in the start of veld fires. |
| FFFARSRA | • Activities associated with pest control and the use of agricultural remedies.<br>• Activities associated with providing / manufacturing fertiliser. |
| Guideline on Public Participation | The public participation guideline was used to determine the best way to define and inform all relevant I&APs of the project. The guideline was also used to determine the most effective communication strategies for public participation. |
| Guidelines on Alternatives | The guidelines for alternatives assessment was used to develop a methodology for alternatives assessment. This methodology was applied to determine and assess the most viable alternatives to the project. The assessment was undertaken against the base environment (i.e. the no-go option). |
| Guideline on Need and desirability | The guideline was taken into account to determine whether the project complied according to the concept of Best Practicable Environmental Option as well as environmental and social sustainability. |
| Guideline for EMP's | The guideline for EMP's was taken into account to determine the most effective minimize, mitigation and management measures to minimise or prevent the impacts identified in the report. |

| | |
|---|---|
| Circular EADP 0028/2014: "One Environmental Management System". | The circular was consulted to determine whether the report has been compiled in accordance with all the requirements in terms of the 2014 EIA Regulations. |
| Landowner's Guide: Human-Wildlife Conflict Sensible Solutions To Living With Wildlife [CapeNature] | The guideline provides solutions for landowners to manage human-wildlife interactions. This has been incorporated into the operational EMP for the facility. |
| 3110: National Organic Waste Composting Strategy: Draft Guideline Document for Composting February 2013 | This draft Guideline Document has been developed as a supplement to the NOWCS (Strategy) Report and Status Quo Report (amongst others) and is aimed to provide a practical conceptual-level information tool to assist Authorities and other interested parties to identify viable and sustainable composting opportunities.<br><br>This Guideline Document contains data, facts and figures that should be of assistance and value to those wishing to expand existing composting activities or for those wanting to identify potential new composting opportunities. |

**Please note:** Copies of any comments, permit(s) or licences received from any other Organ of State must be attached to this report as **Appendix E**.

## Section C: PUBLIC PARTICIPATION

The PPP must fulfil the requirements outlined in the NEMA, the EIA Regulations, 2014 (as amended) and if applicable, the NEM: WA and/or the NEM: AQA. This Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must also be taken into account.

1. Please highlight the appropriate box to indicate whether the specific requirement was undertaken or whether there was an exemption applied for.

| | | | |
|---|---|---|---|
| In terms of Regulation 41 of the EIA Regulations, 2014 (as amended) - | | | |
| (a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of - | | | |
| (i) the site where the activity to which the application relates, is or is to be undertaken; and | YES | ~~EXEMPTION~~ | |
| (ii) any alternative site | ~~YES~~ | ~~EXEMPTION~~ | N/A |
| (b) giving written notice, in any manner provided for in Section 47D of the NEMA, to – | | | |
| (i) the occupiers of the site and, if the applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; | YES | ~~EXEMPTION~~ | ~~N/A~~ |
| (ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; | YES | ~~EXEMPTION~~ | |
| (iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area; | YES | ~~EXEMPTION~~ | |
| (iv) the municipality (Local and District Municipality) which has jurisdiction in the area; | YES | ~~EXEMPTION~~ | |
| (v) any organ of state having jurisdiction in respect of any aspect of the activity; and | YES | ~~EXEMPTION~~ | |
| (vi) any other party as required by the Department; | YES | ~~EXEMPTION~~ | N/A |
| (c) placing an advertisement in - | | | |
| (i) one local newspaper; or | YES | ~~EXEMPTION~~ | |
| (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations; | ~~YES~~ | ~~EXEMPTION~~ | N/A |
| (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken | ~~YES~~ | ~~EXEMPTION~~ | N/A |
| (e) using reasonable alternative methods, as agreed to by the Department, in those instances where a person is desirous of but unable to participate in the process due to—<br>(i) illiteracy;<br>(ii) disability; or<br>(iii) Any other disadvantage. | YES | ~~EXEMPTION~~ | ~~N/A~~ |
| **If you have indicated that "EXEMPTION" is applicable to any of the above, proof of the exemption decision must be appended to this report.** | | | |
| Please note that for the NEM: WA and NEM: AQA, a notice must be placed in at least two newspapers circulating in the area where the activity applied for is proposed. | | | |
| If applicable, has/will an advertisement be placed in at least two newspapers? | YES | ~~NO~~ | |
| If "NO", then proof of the exemption decision must be appended to this report. | | | |

2. Provide a list of all the State Departments and Organs of State that were consulted:

| State Department / Organ of State | Date request was sent: | Date comment received: | Support / not in support |
|---|---|---|---|
| Breede-Gouritz Catchment Management Agency | 15/06/2017 | 17/08/2017 | Support - with conditions. |
| Cape Winelands District Municipality | 15/06/2017 | UMIZA Planning sent us comments received by CWDM on the Planning Application 17/11/2017. CWDM: Inspection Report - 05 February 2018. | Support - with conditions. |
| CapeNature | 15/06/2017 | 11/07/2017 | Await further information. |
| Central Breede River Water User Association (Robertson) | 15/06/2017 | No Comment Received to Date | NA |

| | | | |
|---|---|---|---|
| DEA&DP: Air Quality Management<br>DEA&DP: Development Management | 15/06/2017 | 12/07/2017 | Support - with conditions. |
| DEA&DP: Pollution and Chemical Management | 15/06/2017 | 03/08/2017 | Support - with conditions. |
| DEA&DP: Waste Management | 15/06/2017 | 13/07/2017 | Support - with conditions. |
| Department of Agriculture: Western Cape | 15/06/2017 | 04/09/2017 | Support. |
| Department of Health: Western Cape | 15/06/2017 | No Comment Received to Date | NA |
| Heritage Western Cape | 15/06/2017 | RoD received: 01/02/2017 | Support. |
| Langeberg Local Municipality | 15/06/2017 | 18/07/2017 | Support - with conditions. |

3. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated, or the reasons for not including them.
(The detailed outcomes of this process, including copies of the supporting documents and inputs must be included in a Comments and Response Report to be attached to the BAR (see note below) as **Appendix F**).

Public participation is an integral part of the environmental assessment process, and affords potentially interested and affected parties (I&APs) an opportunity to participate in the EIA process, or to comment on any aspect of the development proposals. The public participation process undertaken thus far and to be undertaken for this project complies with the requirements of the EIA Regulations. The description of the public participation process as included below itemizes the steps and actions undertaken to date and as appropriate at this stage of the project.

**Notification of I&APs:**

Potential I&AP's have been notified about the project in the following manner (this is in compliance with Regulation 41 of GN R982, as amended).

- Fixing notice boards at the boundary of the property in compliance with Regulation 41(2)(a)(i) of GN R982, as amended;
- Written notifications were sent to potential I&APs inviting them to register and give comments on the proposed development. These notifications are in line with the requirements of Regulation 41(2)(b) of GN R982, as amended; and
- Placing an advertisement in a local and provincial newspaper in compliance with Regulation 41(2)(c)(i) of GN R982, as amended.

All potential I&APs were afforded the opportunity to register for the project. All registered I&APs was be informed of further activities regarding the project.

**Public Meetings and Workshops:**

No public meetings have been held.

**Availability of the Pre-Application Basic Assessment Report:**

Although not a statutory requirement, the Pre-Application Basic Assessment Report (BAR) will be made available to all relevant state departments and all registered I&APs for a 30 day comment period, prior to the submission of the formal application.

Electronic copies (CDs) were made available to any department or I&AP on request. A copy of the BAR was made available for viewing and comment on Eco Impact's website: www.ecoimpact.co.za/public-participation.

Proof of delivery and document placement is attached to the BAR. Additionally, the report was

made available to any I&AP upon request, as advised on the notice boards, notices and advertisements referred to above.

Comments received have been responded to as per the requirements of GN R982, as amended. The comments and response report as well as all comments received are attached to the draft and final BAR

**Availability of the draft Basic Assessment Report:**

As per the requirements of GN R982, as amended, the draft Basic Assessment Report (BAR) will be made available to all relevant state departments and all registered I&APs for a 30 day commenting period.

The BAR has been included for statutory comment with the written notice as sent to the commenting organs of state. Electronic copies (CDs) were made available to any department or I&AP on request. A copy of the BAR was made available for viewing and comment on Eco Impact's website: www.ecoimpact.co.za/public-participation.

Proof of delivery and document placement is attached to the BAR. Additionally, the report was made available to any I&AP upon request, as advised on the notice boards, notices and advertisements referred to above.

Comments received have been responded to as per the requirements of GN R982, as amended. The comments and response report as well as all comments received are attached to the final BAR.

**Decision and Appeal Period:**

Once the DEA&DP have reviewed the final BAR and are satisfied that it contains sufficient information to make an informed decision, the DEA&DP will use the information contained within the BAR to determine the environmental acceptability of the proponent's preferred options. A decision on the application and associated reports will be made by the DEA&DP based on the findings of the BAR.

Following the issuing of the decision, all registered I&APS will be notified. All I&APs will be provided with the opportunity to appeal the decision to the MEC of the DEA&DP in terms of the NEMA.

4. Provide a summary of any conditional aspects identified / highlighted by any Organs of State, which have jurisdiction in respect of any aspect of the relevant activity.

**Dust and Noise**

- Dust and noise may be generated during the construction phase of the project.
- In this regard. the operation must comply with the following:
  - National Environmental Management: Air Qualify Act (NEM: AQA), National Dust Control Regulations (Notice 827 of 2013);
  - Western Cape Noise Control Regulations (P.N. 200/2013).

**Nuisance - Pests/Odour**

The composting process generates a certain level of odour, but the Directorate has noted that the facility has received complaints regarding alleged excessive odour emissions emanating from the composting plant. The facility must investigate best practice measures to minimise or avoid offensive odours.

*"In terms of Section 35 (2) of the NEM: AQA (Act No. 39 of 2004), the occupier of the premises must take all reasonable steps to prevent the emission of any offensive odour caused by any activity on such premises."*

- Blood should be removed from the abattoir every day to reduce the potential for odour release.
- High temperatures may pose a fire risk, therefore the windrows and bulk storage areas should be monitored for temperature spikes.

- Carbon and nitrogen ratios must be at the required level as to abate potential odour release.

**Biodiversity**

- The site was historically covered by Breede Alluvium Renosterveld. Although Breede Alluvium Renosterveld is listed as Vulnerable according to the list of threatened ecosystems published in 2011, a recent analysis by CapeNature's conservation planner, using far more recent groundcover imagery than that used for the 2011 listings, has shown that only 42% of the original extent of this ecosystem is remaining. Thus it now qualifies as Endangered under criterion A1 (remaining extent).
- A portion of the site has been determined as Critical Biodiversity Area (CBA). Whilst we note that this classification is disputed due to the area being previously disturbed and most of the natural vegetation being removed, the presence of natural vegetation was not the only reason that the western portion of the site was determined as CBA and one of the other reasons includes watercourse protection. Due to the level of disturbance the more correct classification would probably have been CBA 2 which acknowledges that the site is degraded but should be rehabilitated. It is apparent from an examination of current and historical aerial images that drainage lines are present on site and the site has been prone to erosion in the past which indicates that water does flow through the site occasionally. This means that there may be a risk of compost washing off site and into watercourses after a heavy rainfall event. Therefore the size of the facility should be reduced to allow larger buffers between it and the watercourses north and west of the site.
- Although the site purportedly has a high clay content and the risk of infiltration is therefore deemed to be low, we would still like confirmation from a geohydrologist in this regard.
- Linked to points 2 and 3, input from a geohydrologist should also be obtained regarding the need for mitigation measures (such as berms, cut-off drains, retention pond etc.) to control run-off and infiltration.
- The feedlot site was also historically covered by Breede Alluvium Renosterveld. Although this site has been cleared of natural vegetation, the feedlot does also pose a risk to the nearby watercourse especially if nutrient rich runoff from the site is able to enter the river. A substantial buffer should also be allowed for (>50m) between the edge of the feedlot and the riparian zone. Erosion on site must also be strictly monitored and controlled.
- For both sites the EMPr must stipulate buffers between activities and the watercourses. Although some standard operating procedures have been provided for several activities on site (for example delivery, turning in of animal products, temperature and pH recording etc.) there are no requirements stipulated for monitoring and ensuring contaminants do not leave the site and this requires further consideration.

**Surface / Groundwater Pollution**

- The proposed feedlot, due to the intensive nature of operation, has the potential to cause significant surface- and/or groundwater impacts (aquifer contamination) due to animal wastes deposited. These impacts need to be managed and reduced to acceptable levels, hence the applicant must adhere to these recommendations and the following mitigating measures should be considered for inclusion in the environmental management plan (EMP):
    - Implement corrective actions if any spills are observed;
    - Regularly remove all animal wastes from pens and surfaces transport such wastes to the designated manure storage area where it can be dried, bagged and sold as manure;
    - Produce and implement and acceptable storm water management plan.;
- A ground water monitoring programme to ensure regular monitoring of ground water quality must form part of the EMP. The results of the monitoring and sampling programme must be available on demand.
- Please note that composting should be conducted on an impermeable surface.
- The composting facility lies 60km away from the Robertson Abattoir, therefore it is important to revise measures to effectively transport abattoir waste to the composting facility as to reduce and or mitigate spillage.

**Waste Management**

- The disposal of waste should be considered as a last resort after having considered the re-use and recycling of waste during the construction phase.
- Waste minimisation should be implemented, such as the avoidance, reduction, re-use and recycling of waste during construction, before considering the disposal of such waste.

- The composting area and waste storage area shall be operated in such a manner that no health hazard or nuisance conditions occur, such as noise, odour, vectors and windblown litter.
- Please note that no waste from infectious animals, including blood from infectious animals may be used for composting at the Facility.
- Please adhere to the National Norms and Standards for the Storage of Waste in terms of Government Notice (GN) No. 926 of 29 November 2013, if the volumes of waste stored exceeds 80m$^3$ for hazardous waste and/or 100m$^3$ for general waste.

**Pesticides**

- Vector management could result in water contamination due to pesticide usage. Pesticide application near rivers, wetlands and other fresh water resources should be minimised and applicable types of pesticides (non-persistent) should be applied.;
- The following procedures will assist in the environmentally safe use of pesticides and chemicals:
    - Pesticide containers should be stored in a weather-proof and fire resistant building that is maintained in good condition. Pesticide containers should be stored on an impermeable base;
    - A sump to contain and decant spills during pesticide preparation would be fortuitous;
    - Unused pesticide and contaminated disposable equipment should be disposed of correctly to ensure reduce risk of environmental contamination;
    - Empty pesticide containers should not be burned or buried as it could be a risk to human health and may contaminate soil and groundwater resources.

**Zoning**

- The property in question is zoned Agricultural Zone I in terms of the Section 8 Zoning Scheme regulations. The proposed uses, namely: Compost Facility (from abattoir waste) and Feedlot, are not primary uses in the Agricultural Zone I. An application must therefore be lodged in terms of Section 15 of the Langeberg Municipal Land Use Planning Bylaw, 2015. It is noted that the use of the compost facility has already commenced which is in contravention of the Zoning Scheme and a penalty fee is payable.
- In terms of the Langeberg Spatial Development Framework, 2015 (SDF) the proposed development site falls within "Core", "Buffer" and "Transformed" Spatial Planning Categories. There is no objection to development within the Transformed and Buffer areas subject to the sustainable management of land use activities. However, development of the compost facility within the identified "Core" SPC adjoining the Middelstekloof River is not consistent with the Desired Management Objectives for this land, namely: to maintain natural land, rehabilitate degraded land and maintain ecological processes. This Core SPC forms an integral part of an important north-south environmental link between the Langeberge and the Breede River and connectivity must be maintained. In this regard, natural buffer areas and no-go areas must be identified and complied with to the satisfaction of Cape Nature, BGCMA and the CBR WUA. The proposed boundaries of the compost facility must be amended accordingly.
- It is noted that there is an existing shed on the site. From google earth, it appears that this shed was built between 2010 and 2014. This office has no records of building plans having been submitted in terms of the National Building Regulations and Building Standards Act No 103 of 1977.

**Note:**
Even if pre-application public participation is undertaken as allowed for by Regulation 40(3), it must be undertaken in accordance with the requirements set out in Regulations 3(3), 3(4), 3(8), 7(2), 7(5), 19, 40, 41, 42, 43 and 44.

If the "exemption" option is selected above and no proof of the exemption decision is attached to this BAR, the application will be refused.

A list of all the potential I&APs, including the Organs of State, notified and a list of all the registered I&APs must be submitted with the BAR. The list of registered I&APs must be opened, maintained and made available to any person requesting access to the register in writing.

The BAR must be submitted to the Department when being made available to I&APs, including the relevant Organs of State and State Departments which have jurisdiction with regard to any aspect of the activity, for a commenting period of at least 30 days. Unless agreement to the contrary has been reached between the Competent Authority and the EAP, the EAP will be responsible for the consultation with the relevant State Departments in terms of Section 24O and Regulation 7(2) – which consultation must happen simultaneously with the consultation with the I&APs and other Organs of State.

All the comments received from I&APs on the BAR must be recorded, responded to and included in the Comments and Responses Report included as **Appendix F** of the BAR. If necessary, any amendments made in response to comments

received must be effected in the BAR itself. The Comments and Responses Report must also include a description of the PPP followed.

The minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded, must also be submitted as part of the public participation information to be attached to the final BAR as **Appendix F.**

Proof of all the notices given as indicated, as well as notice to I&APs of the availability of the Pre-Application BAR (if applicable), Draft BAR, and Revised BAR (if applicable) must be submitted as part of the public participation information to be attached to the BAR as **Appendix F**. In terms of the required "proof" the following must be submitted to the Department:

- a site map showing where the site notice was displayed, a dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
  - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
  - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
  - if a facsimile was sent, a copy of the facsimile report;
  - if an electronic mail was sent, a copy of the electronic mail sent; and
  - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- A copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

## SECTION D: NEED AND DESIRABILITY

**Note:** Before completing this section, first consult this Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014 (as amended), any subsequent Circulars, and guidelines available on the Department's website: **http://www.westerncape.gov.za/eadp**). In this regard, it must be noted that the *Guideline on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2010* published by the national Department of Environmental Affairs on 20 October 2014 (GN No. 891 on Government Gazette No. 38108 refers) (available at: http://www.gov.za/sites/www.gov.za/files/38108_891.pdf) also applied to EIAs in terms of the EIA Regulations, 2014 (as amended).

| 1. Is the development permitted in terms of the property's existing land use rights? | ~~YES~~ | NO | Please explain |
|---|---|---|---|
| Application is made in terms of the new Land Use Planning Bylaw, 2015 through the provincial Section 8 Scheme Regulations, 1988 for the following activities:<br>• Footprint rezoning from Agriculture Zone 1 to Industrial Zone II (noxious trade) for the development and operation of a compost site in an area of approximately 3,6 ha (including windrows, effluent dam, storage space for raw and finished products, roads, adequate space for off-loading and turning of trucks); and<br>• Consent use for intensive feed farming (sheep feedlot of maximum 4500 lambs) in an area of 6000m2.<br>Both the above form part of an already disturbed area of approximately 8,6 ha that will be used together and in support of each other.<br><br>A noxious trade means an offensive use or another use which constitutes a nuisance as envisaged in regulations which are promulgated from time to time in terms of Sections 33 and 34 of the Health Act, 1977 (Act 63 of 1977). According to the Health Act, nuisance means, inter alia, any accumulation of refuse, offal, manure or other matter which is offensive or is injurious or dangerous to health.<br><br>The applicability of this definition is uncertain. Although the proposed composting facility activity entails the use of sheep offal and manure as part of the process to manufacture compost, it is not the accumulation /build-up/ gathering/ growth/ increase there-of that constitutes a nuisance, it is rather by-products that are reused/ processed to create a useful and needed product to the agricultural environment.<br><br>The way these products are used, managed and changed into a high quality compost, cannot be compared with a dumping site or the accumulation of offensive materials that are offensive or dangerous to health. Many farmers develop compost on their farms as part of general practices next to vineyards/orchards, using both carbon (plant material) and nitrogen (animal offal). | | | |
| 2. Will the development be in line with the following? | | | |
| (a) Provincial Spatial Development Framework ("**PSDF**"). | ~~YES~~ | NO | Please explain |
| The Western Cape Provincial Spatial Development Framework (PSDF) is a broad scale, provincial | | | |

policy document. The PSDF promotes recycling, composting and waste minimisation. The PSDF (2009) sets out a number of Objectives - of relevance to this project is Objective 9.

Objective 9: Minimise consumption of scarce environmental resources – waste recycling
A number of policies have been compiled under this objective relating to waste management, which reads as follows:
RC32: All municipalities should follow an integrated hierarchical approach to waste management i.r.o. avoidance, reduction and reuse.

An application in terms of Section 53 of the Land Use Planning Act may also be applicable as land will be developed that was used for agriculture during the past ten years. The provincial significance is, however, questioned as the compost facility will only serve the Robertson Abattoir and compost will only be produced and used by surrounding and local farmers.

| | | | |
|---|---|---|---|
| (b) Urban edge / edge of **built environment** for the area. | ~~YES~~ | NO | Please explain |
| The area is outside the approved urban edge. | | | |
| (c) Integrated Development Plan and Spatial Development Framework of the Local Municipality (*e.g.,* would the approval of this application compromise the integrity of the existing approved and credible municipal **IDP and SDF**?). | YES | ~~NO~~ | Please explain |
| The proposed compost facility is in line with municipal IDP and will not affect the IDP and its outcomes. However, an application as referred to in point 1 above must be made. | | | |
| (d) An Environmental Management Framework ("**EMF**") adopted by this Department. (*e.g.,* Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?) | YES | ~~NO~~ | Please explain |
| The proposed compost facility is in line with municipal IDP and will not affect the IDP and its outcomes. However, an application as referred to in point 1 above must be made. | | | |
| (e) Any **other** Plans (*e.g.,* Integrated Waste Management Plan (for waste management activities), *etc.*)). | YES | ~~NO~~ | Please explain |
| National Organic Waste Composting Strategy: Draft Guideline Document for Composting, February 2013.<br><br>This draft Guideline Document has been developed as a supplement to the NOWCS (Strategy) Report and Status Quo Report (amongst others) and is aimed to provide a practical conceptual-level information tool to assist Authorities and other interested parties to identify viable and sustainable composting opportunities.<br><br>This Guideline Document contains data, facts and figures that should be of assistance and value to those wishing to expand existing composting activities or for those wanting to identify potential new composting opportunities.<br>***Draft National Standards for Organic Waste Composting (Notice 68 of 2014)***<br><br>Composting organic waste not only diverts organic waste from waste disposal facilities (and in doing so prevent the formation of methane gas through the breakdown of organic waste, and extends the life of waste disposal facilities), but greatly minimises the volumes of this problematic waste stream. A facility that has the capacity to process less than 10 tons of organic waste per day do not need to adhere to the requirements of the Draft National Standards for Organic Waste Composting. The Draft National Standards for Organic Waste Composting does not per se deal with the recovery, treatment or recycling of municipal waste, but provides requirements for the design, construction and operation of composting facilities that process in excess of 10 tons but less than 100 tons of compostable organic waste per day.<br>**** Waste Minimisation Guideline for Municipalities, 2015 (DEADP:WC)*** | | | |
| (f) Any other Plans (e.g. Guide Plan) | ~~YES~~ | ~~NO~~ | ~~Please explain~~ |
| NA | | | |
| 3. Is the land use (associated with the project being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (in other words, is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)? | YES | ~~NO~~ | Please explain |
| Application is made in terms of the new Land Use Planning Bylaw, 2015 through the provincial Section 8 Scheme Regulations, 1988 for the following activities:<br>• Footprint rezoning from Agriculture Zone 1 to Industrial Zone II (noxious trade) for the development and operation of a compost site in an area of approximately 3,6 ha (including windrows, effluent dam, storage space for raw and finished products, roads, adequate space for | | | |

off-loading and turning of trucks); and
- Consent use for intensive feed farming (sheep feedlot of maximum 4500 lambs) in an area of 6000m2.

Both the above form part of an already disturbed area of approximately 8,6 ha that will be used together and in support of each other.

A noxious trade means an offensive use or another use which constitutes a nuisance as envisaged in regulations which are promulgated from time to time in terms of Sections 33 and 34 of the Health Act, 1977 (Act 63 of 1977). According to the Health Act, nuisance means, inter alia, any accumulation of refuse, offal, manure or other matter which is offensive or is injurious or dangerous to health.

The applicability of this definition is uncertain. Although the proposed composting facility activity entails the use of sheep offal and manure as part of the process to manufacture compost, it is not the accumulation /build-up/ gathering/ growth/ increase there-of that constitutes a nuisance, it is rather by-products that are reused/ processed to create a useful and needed product to the agricultural environment.

The way these products are used, managed and changed into a high quality compost, cannot be compared with a dumping site or the accumulation of offensive materials that are offensive or dangerous to health. Many farmers develop compost on their farms as part of general practices next to vineyards/orchards, using both carbon (plant material) and nitrogen (animal offal).

An application in terms of Section 53 of the Land Use Planning Act may also be applicable as land will be developed that was used for agriculture during the past ten years. The provincial significance is, however, questioned as the compost facility will only serve the Robertson Abattoir and compost will only be produced and used by surrounding and local farmers.

| | | | |
|---|---|---|---|
| 4. Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur on the proposed site at this point in time? | YES | ~~NO~~ | Please explain |
| The proposed compost facility is in line with municipal IDP and will not affect the IDP and its outcomes. However, an application for consent use on Agriculture 1 zoning is required. | | | |
| 5. Does the community/area need the project and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (*e.g.*, development is a National Priority, but within a specific local context it could be inappropriate.) | YES | ~~NO~~ | Please explain |
| The Western Cape Provincial Spatial Development Framework (PSDF) is a broad scale, provincial policy document. The PSDF promotes recycling, composting and waste minimisation. The PSDF (2009) sets out a number of Objectives - of relevance to this project is Objective 9.<br><br>Objective 9: Minimise consumption of scarce environmental resources – waste recycling<br>A number of policies have been compiled under this objective relating to waste management, which reads as follows:<br>RC32: All municipalities should follow an integrated hierarchical approach to waste management i.r.o. avoidance, reduction and reuse.<br><br>An application in terms of Section 53 of the Land Use Planning Act may also be applicable as land will be developed that was used for agriculture during the past ten years. The provincial significance is, however, questioned as the compost facility will only serve the Robertson Abattoir and compost will only be produced and used by surrounding and local farmers. | | | |
| 6. Are the necessary **services** available together with adequate unallocated municipal capacity (at the time of application), or must additional capacity be created to cater for the project? (Confirmation by the relevant municipality in this regard must be attached to the BAR as **Appendix E**.) | YES | ~~NO~~ | Please explain |
| No water is required for the composting facility, as the windrows are moisten with the blood and wet stomach intestines (90% water) when required, together with the runoff water in the lowest dam (see site development plan in Appendix B). No electricity is required at the composting facility. | | | |
| 7. Is this project provided for in the **infrastructure planning** of the municipality and if not, what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant municipality in this regard must be attached to the BAR as **Appendix E**.) | YES | ~~NO~~ | Please explain |
| No water is required for the composting facility, as the windrows are moisten with the blood and wet | | | |

stomach intestines (90% water) when required, together with the runoff water in the lowest dam (see site development plan in Appendix B. No electricity is required at the composting facility.

| 8. Is this project part of a **national programme** to address an issue of national concern or importance? | ~~YES~~ | NO | Please explain |
|---|---|---|---|

The Western Cape Provincial Spatial Development Framework (PSDF) is a broad scale, provincial policy document. The PSDF promotes recycling, composting and waste minimisation. The PSDF (2009) sets out a number of Objectives - of relevance to this project is Objective 9.

Objective 9: Minimise consumption of scarce environmental resources – waste recycling
A number of policies have been compiled under this objective relating to waste management, which reads as follows:
RC32: All municipalities should follow an integrated hierarchical approach to waste management i.r.o. avoidance, reduction and reuse.

An application in terms of Section 53 of the Land Use Planning Act may also be applicable as land will be developed that was used for agriculture during the past ten years. The provincial significance is, however, questioned as the compost facility will only serve the Robertson Abattoir and compost will only be produced and used by surrounding and local farmers.

| 9. Do location factors favour this land use (associated with the development proposal and associated listed activity(ies) applied for) at this place? (This relates to the contextualisation of the proposed land use on the proposed site within its broader context.) | YES | ~~NO~~ | Please explain |
|---|---|---|---|

According to information received from the Municipality, and according to the Provincial Rural Guidelines of May 2009, the application site falls within different Spatial Planning Categories:


- Green: Core 1 area: Critical biodiversity areas / no-go area to the north of the application site (Middelstekloof River)
- Dark purple: Buffer 1 area: Remnants of natural or near natural vegetation: Extensive agriculture
- Light purple: Buffer 2 Areas: Other natural areas, i.e. livestock production as dominant land use: Activities and uses directly to the primary agricultural enterprise, additional land uses to facilitate diversification and value adding e.g. local product processing, space extensive requirements such as nuisance and buffer requirements such as solid waste disposal sites, feedlots etc.
- Brown: Transformed area / Yellow: Cadastral boundaries (not correct)

The whole application site is already transformed and disturbed and is not consistent with the above.

According to the above guidelines, the compost plant is desirable in this location. Although the feedlot will be located in the area earmarked for "extensive agriculture", it is already disturbed land further than 32m away from the side of the water course and situated between the kraal and compost plant that are all interdependent.

The alignment of the ESKOM line across this area prohibits the feedlot to be located closer to the compost plant.

| | | | |
|---|---|---|---|
| 10. Will the development proposal or the land use associated with the development proposal applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)? | YES | ~~NO~~ | Please explain |

The only concern would be the proximity of the facility to the watercourse. A Water Use Licence is required for this activity; as such an application with BGCMA is to be submitted. The effect of the activity on the watercourse was assessed as part of the application. The necessary buffer areas and cut of drain channels was incorporated in the layout and infrastructure to protect the water courses.

See attached in Appendix G - Freshwater Ecological Impact Assessment as well as the Risk Assessment Matrix.

| | | | |
|---|---|---|---|
| 11. Will the development impact on people's health and well-being (*e.g.,* in terms of noise, odours, visual character and 'sense of place', *etc.*)? | YES | ~~NO~~ | Please explain |

**Flies:**

- All by-products are covered immediately on delivery which reduces the numbers of flies to a large extent.
- The composting process will control the spread of diseases through correct management of temperature and ph. No larva/eggs/worms/bacteria can live in the desirable 55ºC within the windrows.
- The rows are covered with dry kraal manure from the feedlot that reduce the smell, prevent the attraction of flies and are not favourable for flies to lay eggs as it is too dry and warm for them.
- In addition, the rows are also treated with chemicals such as Neoprene from Coopers which is aimed at killing the eggs and larvae of the flies. Baycidal and Temprid from Bayer are also used to kill the flies and larvae. Quik Bayt is dry crystals which attracts and kills flies on contact and are placed at several points around the site.
- The sheep and manure will attract flies that live in the plants/fynbos in the surrounding area, but will be managed by providing fly traps at the feedlot, similar to the 19+ pheromone fly traps hanging on the fence alongside the composting facility.
- This will be replaced on a regularly basis. In addition, the sheep and manure will be treated as explained above.

**Odours:**

- The balance of PH, temperature, air, moisture are critical parameters to ensure correct fermentation/digestion without causing odour or any other problems in the composting facility. These are monitored by the farm manager on a daily basis. Bemlab results for testing compost samples shows a good quality compost with a desirable C:N ratio.
- Any abattoir product that is brought to the site is covered immediately, except for blood that needs to be soaked for 1 hour before turning and covering.
- Standard operating procedures have been adapted to ensure that no deliveries leave the abattoir after 15:30 so that it can be received and covered before the end of the shift on the farm.
- Blood is brought daily to the application site, in comparison with previously when the tanker was filled before delivery to the application site. The blood is also top up with water at the abattoir that has reduced the smell considerably.
- The manager stays on the farm, approximately 120 meters from the application site and monitors the odours on a daily basis.
- The nearest residential uses within prevailing wind direction are 2km away and will not be adversely affected.
- Three or more official inspections were conducted over the past months by officials from various authorities and none of them have complained about any offensive smells, even though this was one of the aspects they were inspected specifically.

**Employment / Security:**

- The application site have two controlled access gates and no unauthorized persons are allowed on site. A site access register will be kept on site.
- Fencing around the facility ensures that no unwanted animals enter the site.
- Security lights will improve the security at the feedlot during the evenings.
- The facility will employ seven permanent workers (two at compost facility, four at feedlot and

remaining farm and one Site/Farm manager) that will maintain and secure the facilities.

**Impacts of trucks: dust, noise and obstruction in DR 1377:**

- The Abattoir by-products (blood, "pensmis", and minimal carcasses) are gathered on the Abattoir property in the industrial area of Robertson.
- This is transported in dedicated blood tanks (honey suckers) and skip trucks daily to the application site. The number of trips are/will be:
  - ❖ Honey suckers with blood: once per day
  - ❖ 8 ton skip trucks (truck with tank on top): approx. every second day
  - ❖ No trip on weekends, except in emergency cases
  - ❖ Sheep will be transported in livestock trucks to/from the site once a day.
- Most of the trip length will be on tar road (R60 and DR 1384), with only 2km on DR 1377 (gravel) that will create dust.
- The two to three additional trips daily will not have an additional substantial impact if compared to the surrounding environment:
  - ❖ The R60 carries many trucks between Robertson and Worcester and the railway line runs adjacent to the road;
  - ❖ DR 1384 (tar road) between the R60 and the lime quarry carries many and much heavier trucks to and from the quarry to the lime industry adjacent to the R60;
  - ❖ The lime factory/industry itself creates much noise and dust from their 20/25 ton trucks alongside the R60; and
  - ❖ DR 1377 (gravel road) between Rooiberg Cellar and Nuy carries many trucks from wine farmers, sheep/cattle farmers, and a brewery on a daily basis.
- The two gates to the application site were placed approximately 20m inside the boundary of the application site to prevent any obstructions by trucks in road DR 1377.

**Other noise impacts on site:**

A compost turner, front loader and tractor on site will contribute to noise, but are all agricultural related implements that are associated with buffer areas.

**Visual:**

The feedlot steel structure (see attached drawing) will be seen from Road R60, similar to the existing stores on Ptn 6 and the neighbouring farm.

The compost facility has an agricultural feel with no negative visual impacts.

**Possible water pollution:**

The soil study indicated that the high clay content of the site will prevent any nutrient contained leaching into the soil. The site also flows towards the required run off collection dams. The windrows are more than 235m from the side of the Middelstekloof River.

The implementation of the existing Standard Operating Procedures (SOPs) for the composting facility as well as the SOPs of the feedlot will mitigate the impacts effectively. These will be monitored regularly. Problems experienced / complaints received will be recorded in a complaints register and addressed when required.

| 12. Will the proposed development or the land use associated with the proposed development applied for, result in unacceptable opportunity costs? | YES | ~~NO~~ | Please explain |
|---|---|---|---|

The impacts as identified above may impact on neighbouring land users and may as a result of the facility result in lost opportunities for the neighbouring land users. It is however the intention of the applicant to ensure that the impacts are mitigated to have a minimal impact on surrounding land users.

13. What will the **cumulative impacts** (positive and negative) of the proposed land use associated with the development proposal and associated listed activity(ies) applied for, be?

Positive impacts:

- Waste Management solution for the abattoir;
- The compost facility meets goals and objectives in terms of minimisation, recycling and reuse through the composting of abattoir by-products;
- The compost facility provides a sustainably waste management alternative for the disposal of abattoir by-products;

- The feedlot will ensure a consistent supply of lambs are available for market;
- The feedlot will ensure that a market exists for farmers needing to sell livestock as a result of unfavourable environmental impacts on the farmer's ability to rear the livestock to finishing.

Negative impacts:
See Point 11 above.

| 14. Is the development the **best practicable environmental option** for this land/site? | YES | ~~NO~~ | Please explain |
|---|---|---|---|

Due to the lack of capacity at a Class B municipal waste disposal facility (Ashton), the South African Farm Assured Meat Group CC (SAFAM) Robertson Abattoir, one of the largest employers in the Langeberg Municipal area with over 200 employees, was obliged to manage and dispose of the by-products (i.e. wastes derived from the slaughter process) from the Robertson Abattoir in the most environmental friendly way.
[These are not waste products since it is used as an ingredient to create compost.]

The disposal of the by-products on a portion of Ptn 6 of the farm Middelburg No 10, district Robertson started in February 2017 after consultation with the Langeberg Municipality, Cape Winelands District Municipality as well as the Directorate Waste Management of the Department of Environmental Affairs and Development Planning.

Since the capacity is below 10 tons per day at present and the product is utilized on the same premises, environmental authorization is not required. This facility will be capable of handling all organic general by-products (("pensmis" (mainly water) and "derms", blood, non-infectious condemned trim and non-infectious whole carcasses)) from the Robertson Abattoir and converting it to general use compost.

In addition, it is the intention to establish a sheep feedlot adjacent to the compost facility. The capacity of the feedlot is 4500 lambs at any one time. The manure of the feedlot will be, together with the by-products of the abattoir and wood chips received from the Municipality, an essential raw material in producing compost.

According to information received from the Municipality, and according to the Provincial Rural Guidelines of May 2009, the application site falls within different Spatial Planning Categories:


- Green: Core 1 area: Critical biodiversity areas / no-go area to the north of the application site (Middelstekloof River)
- Dark purple: Buffer 1 area: Remnants of natural or near natural vegetation: Extensive agriculture
- Light purple: Buffer 2 Areas: Other natural areas, i.e. livestock production as dominant land use: Activities and uses directly to the primary agricultural enterprise, additional land uses to facilitate diversification and value adding e.g. local product processing, space extensive requirements such as nuisance and buffer requirements such as solid waste disposal sites, feedlots etc.

- Brown: Transformed area / Yellow: Cadastral boundaries (not correct)

The whole application site is already transformed and disturbed and is not consistent with the above.

According to the above guidelines, the compost plant is desirable in this location. Although the feedlot will be located in the area earmarked for "extensive agriculture", it is already disturbed land further than 32m away from the side of the water course and situated between the kraal and compost plant that are all interdependent.

| 15. What will the benefits be to society in general and to the local communities? | Please explain |
|---|---|

The composting facility on the farm Middelburg offers currently the only solution for the handling of the by-products of Robertson Abattoir, one of the largest employment generators in the Langeberg area.

The location is desirable due to the rural character, topography, distance to water course, soil conditions and availability of services and infrastructure, and is also supported by the SDF.

The manufacturing of compost adding such animal by-products is not an established industry in South Africa, and successful overseas examples had to be studied. The operators are, however, eager to learn and strive to operate the compost facility without any detrimental impacts on the environment. The impacts on the immediate environment are already much lower than in the beginning of 2017 when it was initiated.

The establishment of the feedlot is proposed in a viable location. The manure will be used as an essential component of the composting facility and therefore these two land uses will be interdependent.

The uses applicable in this application are both needed and desirable in this location.

| 16. Any **other** need and desirability considerations related to the proposed development? | Please explain |
|---|---|

NA

17. Describe how the **general objectives of Integrated Environmental Management** as set out in Section 23 of the NEMA have been taken into account:

- The general principles as set out in Section 2 of NEMA are implemented as described below in 18.
- The potential impacts for both the construction and the operational phase have been identified in this report – this allows for the appropriate management and mitigation measures to be identified and implemented where and when necessary to prevent environmental degradation and promote sustainability.
- All decisions during the planning and assessment by all involved for the activity promote the integration of the principles of environmental management set out in Section 2 to minimize and mitigate any significant effect on the environment. All these mitigations and management measures were included as proposed EA conditions and included in the EMP.
- All involved in the planning and design identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage. The risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in Section 2 were taken in consideration and used in the assessments, mitigations and recommendations throughout this report.
- Adequate and appropriate opportunity for public participation was provided and included in Appendix F as per the guidelines and regulations in decisions that may affect the environment. The consideration of environmental attributes in management and decision making which may have a significant effect on the environment was ensured. The modes of environmental management best suited to ensure that a particular activity is pursued in accordance with the principles of environmental management set out in Section 2, was identified and employed. Refer to section below

18 Describe how the **principles of environmental management** as set out in Section 2 of the NEMA have been taken into account:

A full public participation as described in the legislation and guidelines will be/ is followed. The proposed development will not have a significant impact on biodiversity. The proposed development will not disturb the landscape and sites that constitute the nation's cultural heritage. The proposed development will not exceed or exploit renewable resource to an extent that they

reach a level beyond which their integrity is jeopardised. The proposed development will not have a significant environmental impact and it is recommended that the Environmental Management Programme be adhered to accordingly.

## SECTION E: DETAILS OF ALL THE ALTERNATIVES CONSIDERED

**Note:** Before completing this section, first consult this Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014 (as amended), any subsequent Circulars, and guidelines available on the Department's website **http://www.westerncape.gov.za/eadp**.

The EIA Regulations, 2014 (as amended) defines "*alternatives*" as " *in relation to a proposed activity, means different means of fulfilling the general purpose and requirements of the activity, which may include alternatives to the—*
*(a) property on which or location where the activity is proposed to be undertaken;*
*(b) type of activity to be undertaken;*
*(c) design or layout of the activity;*
*(d) technology to be used in the activity; or*
*(e) operational aspects of the activity;*
*(f) and includes the option of not implementing the activity;"*

The NEMA (section 24(4)(a) and (b) of the NEMA, refers) prescribes that the procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment must, *inter alia*, with respect to every application for environmental authorisation –

- ensure that the general objectives of integrated environmental management laid down in the NEMA and the National Environmental Management Principles set out in the NEMA are taken into account; and
- include an investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity.

The general objective of integrated environmental management (section 23 of NEMA, refers) is, *inter alia*, to "*identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management*" set out in the NEMA.

The identification, evaluation, consideration and comparative assessment of alternatives directly relate to the management of impacts. Related to every identified impact, alternatives, modifications or changes to the activity must be identified, evaluated, considered and comparatively considered to:

- in terms of negative impacts, firstly avoid a negative impact altogether, or if avoidance is not possible alternatives to better mitigate, manage and remediate a negative impact and to compensate for/offset any impacts that remain after mitigation and remediation; and
- In terms of positive impacts, maximise impacts.

### 1. DETAILS OF THE IDENTIFIED AND CONSIDERED ALTERNATIVES AND INDICATE THOSE ALTERNATIVES THAT WERE FOUND TO BE FEASIBLE AND REASONABLE

**Note: A full description of the investigation of alternatives must be provided and motivation if no reasonable or feasible alternatives exists.**

(a) Property and **location/site** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

A waste to one industry is an input/essential ingredient for another.

The composting facility on the farm Middelburg offers currently the only solution for the handling of the by-products of Robertson Abattoir, one of the largest employment generators in the Langeberg area.

The location is desirable due to the rural character, topography, distance to water course, soil conditions and availability of services and infrastructure, and is also supported by the SDF.

The manufacturing of compost adding such animal by-products is not an established industry in South Africa, and successful overseas examples had to be studied. The operators are, however, eager to learn and strive to operate the compost facility without any detrimental impacts on the environment. The impacts on the immediate environment are already much lower than in the beginning of 2017 when it was initiated.

The establishment of the feedlot is proposed in a viable location. The manure will be used as an

essential component of the composting facility and therefore these two land uses will be interdependent.

The uses applicable in this application are both needed and desirable in this location.

(b) **Activity** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

During 2016 different options were investigated by SAFAM to dispose of the by-products, i.e.:

- Using another service provider to handle the by-products.
- Building and operating a Biogas Plant on site.
- Alkaline Hydrolysis.
- Opening and operating a compost site (PREFERRED OPTION).

Using another service provider was dismissed mainly due to the fact that SAFAM would be held accountable for any issues caused by their by-products even if it was handed over to a licensed operator.

A biogas plant was almost implemented and basic designs were drawn up, but rejected after news form other abattoirs that their biogas systems experience serious operational and reliability problems.

Alkaline hydrolysis was initially considered as it could possibly handle and process the infectious condemned, but due to a lack of local knowledge and experience this method could not be investigated properly.

The compost route was considered from the very start of this work as a serious contender along with the biogas. Research was carried out in house to establish what the requirements would be in terms of land required, type of land, regulatory requirements, processing methodologies, complexity of process etc.

Around October 2016 SAFAM Robertson felt that the composting route was the best option for the treatment of the abattoir by-products in terms of cost effectiveness, sustainability, and ongoing in-house management and control. In addition, this route provides for a needed product that will be used by local farmers.

**ESTABLISHMENT AND OPERATION OF A COMPOST FACILITY (*PREFERRED OPTION*):**

Composting is a managed biological decomposition process that converts organic matter into stable, humus-like material. In the case of mortality composting, the organic matter being converted includes the animal carcass. Composting is a process in which micro-organisms flourish with the proper mixture of bulking agents (e.g. woodchips), animal tissue, water and air.

When done properly, the process consumes tissue, minimizes odours and produces quality finished compost.

The five criteria of a good recipe are:

- Carbon (plant) and Nitrogen (animal) ratios (C:N)
- Moisture Content
- Particle Size
- Oxygen Content
- Temperature
- pH

**Carbon and Nitrogen Ratios (C:N)**

The proper mix of composting materials requires both carbon and nitrogen at a 15:1 to 20:1 ratio. With the proper C:N mix, odour will be minimal and an environment conductive to the growth of micro-organisms will be obtained.

Animal by-products alone will cause the C:N ratio to be out of balance as it will have too high nitrogen level and the by-products will also tend to be wetter, with a variable particle size. In order to achieve the correct C:N ratio, plant material need to be added such as wood chips (sourced from Langeberg Municipality) and sawdust with a high absorbent nature.

**Moisture Content**
Moisture content of the compost mixture should be between 50% and 60%. This will vary depending upon the stage of the compost pile/windrow and where in the pile the sample was taken. Moisture concentrations higher than 60% (when water runs from moisture compost) should be avoided as this can generate odours and increase the chance of leachate from the compost.

**Particle Size & Oxygen Concentration**
Particle size is critical to ensure adequate aeration of the compost pile. The ideal size is between 2,5mm to 10mm with the larger sizes increasing the porosity of the pile allowing for easier airflow in the pile, maintaining oxygen concentrations to optimize microbial growth. As the composting process progresses, the micro-organisms break down the particles, which causes compacting and reduce the airflow. Regular turning of the compost, introducing oxygen back into the pile, reduces the impact of particle size reduction.

**Temperature**
Temperature is both a critical parameter and reliable indicator for successful compost production. Optimal composting temperatures range from between 40-60 degrees centigrade, as this is the range where-in the specific bacteria operate. In order to ensure human and plant pathogens are killed, the compost must be at 55 degrees for a minimum of 72 hours. Five cycles of 3 days on 55 degrees are used to ensure the optimal product.

**pH**
Active composting will only occur within a pH range of 5,5 to 9 as this is the favourable environment of the bacteria. Below a pH of 5,5 the composting process slows down, while a high pH above 8,5 promotes the conversion of nitrogenous compounds to ammonia which is the cause of unfavourable odours. Under normal conditions the pH does not need to be adjusted because of the natural buffering capacity of commonly available components of compost and the normal pH of animal tissue.

Five Standard Operating Procedures (SOPs) have been developed to monitor the successful operation of the composting site (attached):

- SOP 1: Compost Process Flow / Flow diagram
- SOP 2: Removal and Delivery of By-products
- SOP 3: Site Hygiene
- SOP 4: pH and Temperature Testing and Recording
- SOP 5: Pest Control

These were developed in December 2016 and March 2017 and were updated in May 2017. It is a learning curve in South Africa and the current operation has improved to a large extent over the last few months.

Forms that needed to be completed by the workers throughout the process are included as part of the operation EMPr.

**FEEDLOT (*PREFERRED OPTION*)**
The establishment of a feedlot on the proposed site will primarily ensure a consistent supply of lambs for the abattoir. SAFAM Robertson procures lambs from farmers who need to reduce their livestock numbers due to unfavourable environmental conditions. The feedlot will provide capacity for the keeping of these animals until they are in a market ready state. The activity associated with the feedlot is compatible with the activities associated with the compost facility; as such no other activity alternatives were investigated.

The steel store consist of 9 demarcated areas on each side (18 in total) can accommodate 250 lambs each, therefore a total of 4500 lambs on any one time. One of the camps are left empty to

nurse sick lambs. It will be placed in a NW – SE direction to enable the longest hours for the sun to shine through and for the feedlot to stay dry.

Feeding is provided constantly, therefore the lambs do not have to eat all at the same time. The 18 demarcated areas are larger than the steel structure and are lengthened to both sides of the roof. The total sheep feedlot is 6000m$^2$ in extent.

Lambs are bought mostly during winter months from the local farmers when the natural pastures become less and lambs need supplements. These lambs are fed for approximately one month on an intensive basis in the feedlot under controlling circumstances, where-after they are transported to the Robertson Abattoir to be slaughtered.

The operation of the feedlot will remain unchanged from the existing one and will adhere to the existing strict management and monitoring standards. Each lamb will be marked and monitored, dosed as required and transported subject to the requirements of the abattoir. The operation is audited/monitored on a regularly basis to ensure that the feedlot and abattoir adhere to the required standards.

Feeding pills will be delivered by Meadow Feeds and stored in the four silos (two on each side of the steel structure). The feedlot has a semi-automatic self-feeder system. No animal by-products are allowed as feed according to the regulation of the abattoir.

Drinking water is obtained through a pipeline from a borehole that is registered for 14 000m$^3$ per year (registration certificate attached Appendix E2). Ownership is in process of being transferred to the new owner (Applicant).

Considering the above, the composting and feedlot activities are the **PREFERRED ACTIVITY OPTION**.

(c) **Design or layout** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

**Layout Alternative 1 [LA1]: (PREFERRED)**

According to information received from the Municipality, and according to the Provincial Rural Guidelines of May 2009, the application site falls within different Spatial Planning Categories:


- Green: Core 1 area: Critical biodiversity areas / no-go area to the north of the application site (Middelstekloof River)
- Dark purple: Buffer 1 area: Remnants of natural or near natural vegetation: Extensive agriculture
- Light purple: Buffer 2 Areas: Other natural areas, i.e. livestock production as dominant land use:

Activities and uses directly to the primary agricultural enterprise, additional land uses to facilitate diversification and value adding e.g. local product processing, space extensive requirements such as nuisance and buffer requirements such as solid waste disposal sites, feedlots etc.
- Brown: Transformed area / Yellow: Cadastral boundaries (not correct)

The whole application site is already transformed and disturbed and is not consistent with the above.

According to the above guidelines, the compost plant is desirable in this location. Although the feedlot will be located in the area earmarked for "extensive agriculture", it is already disturbed land further than 32m away from the side of the water course and situated between the kraal and compost plant that are all interdependent.

The alignment of the ESKOM line across this area prohibits the feedlot to be located closer to the compost plant.

The proposed layout and storm water run-off plan is the favourable for the following reasons:
- Two entrances with gates, one to the existing composting facility and one to the proposed feedlot and remainder of the farm;
- The most southern access road will be used by the honey suckers (blood trucks) (two-way); the skip trucks with by-products and condemned carcasses will use the road to the western side of the windrows (two-way).
- The last mentioned road will also be used by trucks off-loading wood chips from the Municipality (already chipped) in the north-eastern corner of the application site, as well as the end product (compost) from the windrows to the storing area on the lowest level, near the gate, for easy distribution. The compost will be put in bags to be sold to farmers or be sold in bulk. Because of the high clay content (25%), no hardened surfaces for the storing of the raw or the end products are necessary.
- The internal roads on the Site Plan were created informally over time by moving around on the application site. This may change when the feedlot is in operation and the best practices / logistics between the two interdependent facilities are established.
- Several windrows and bulk pile/s (for whole carcasses) of approximate 1,5m high and 2m wide alongside the south-eastern boundary of the farm and 235m away from the Middelstekloof River; These windrows will rotate/move in the 3,6 ha area allocated as and when the compost is ready and removed.
- Two dams were constructed at the lowest point on the terrain. The north-eastern dam is constructed to catch run-off storm water emanating from the lands and area above the dam, whilst the south-western, smaller dam is for the effluent from the windrows and feedlot. Run off water (only in rainy seasons) from the windrows will be caught by the cut-off weir/barrier on the western side of the windrows from where it will flow with gravity in a channel to the lowest dam. Compacted drainage channels around the feedlot will direct run off water also to the lowest dam. [There is no need for a plastic or concrete lining of the drainage canal according to the soil study.] This water will be re-used when required to wet the windrows on top of the rows.
- After 9 months of operation, very little, if any, run off water was visible in the larger, clean dam. There was some collection of rain water into both the clean and "dirty" dam. No running of water from the compost site to the lower dam was visible at any time. The windrows themselves form an effective barrier for run-off water.
- A 10 meter deep bore hole will be drilled between the catchment dam and the fence of the property to allow quarterly sampling of the ground water if there is any present.
- The whole area including the existing compost facility and the proposed feedlot with dams and area in between is 8.6ha in extent. This whole area will be used due to the interdependence of the two land uses.

Taking all of the above impacting factors into account the proposed layout is the only reasonable and feasible alternative available that would maximise the potential of the property as well as meet the size requirements for each of the proposed activities.

**Layout Alternative 2 [LA2]:**

Although proposed layout LA2 has taken into account the natural landscape, sensitive environments and topography of the site which has highlighted a number of constraints that would

determine and influence the layout of the proposed development.


The proposed layout LA2 is NOT preferred for the following reason:

- The application area has a larger impact on the receiving environment, which would create a larger potential impact on the surrounding sensitive environments.

(d) **Technology** alternatives (*e.g.,* to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

Composting is a managed biological decomposition process that converts organic matter into stable, humus-like material. In the case of mortality composting, the organic matter being converted includes the animal carcass. Composting is a process in which micro-organisms flourish with the proper mixture of bulking agents (e.g. woodchips), animal tissue, water and air.

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Forms that needed to be completed by the workers throughout the process are included as part of the operation EMPr.

**FEEDLOT (*PREFERRED OPTION*)**
The steel store consist of 9 demarcated areas on each side (18 in total) can accommodate 250 lambs each, therefore a total of 4500 lambs on any one time. One of the camps are left empty to nurse sick lambs. It will be placed in a NW – SE direction to enable the longest hours for the sun to shine through and for the feedlot to stay dry.

Feeding is provided constantly, therefore the lambs do not have to eat all at the same time. The 18 demarcated areas are larger than the steel structure and are lengthened to both sides of the roof. The total sheep feedlot is 6000m$^2$ in extent.

Lambs are bought mostly during winter months from the local farmers when the natural pastures become less and lambs need supplements. These lambs are fed for approximately one month on an intensive basis in the feedlot under controlling circumstances, where-after they are transported to the Robertson Abattoir to be slaughtered.

The operation of the feedlot will adhere to strict management and monitoring standards. Each lamb will be marked and monitored, dosed as required and transported subject to the requirements of the abattoir. The operation is audited/monitored on a regularly basis to ensure that the feedlot and abattoir adhere to the required standards.

Feeding pills will be delivered by Meadow Feeds and stored in the four silos (two on each side of the steel structure). The feedlot has a semi-automatic self-feeder system. No animal by-products are allowed as feed according to the regulation of the abattoir.

Drinking water is obtained through a pipeline from a borehole that is registered for 14 000m$^3$ per year (registration certificate attached Appendix E2). Ownership is in process of being transferred to the new owner (Applicant).

(e) **Operational** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

SAFAM Robertson is in the initial stage of composting production and is committed to maintaining a clear record as to how the compost is made and how the site is managed. To ensure that negative impacts are appropriately mitigated a number of Standard Operating Procedures (SOP) have been developed to improve operations and to establish more efficient ways of achieving quality compost.

The following SOP's have been developed and are to be implemented:

1. SAFAM Robertson Compost Flow Diagram (SOP 1) - This SOP describes the process of converting abattoir by-products into compost using a flow diagram and key steps.
2. SAFAM Robertson Compost By-Product Removal (SOP 2) - This SOP describes the removal of by-products from the abattoir to the composting site.
3. SAFAM Site Hygiene (SOP 3) - This SOP covers the hygiene standards at the composting site only.
4. SAFAM pH and Temperature Recording (SOP 4) - This SOP covers the testing of critical process parameters of the windrows and bulk storage areas, especially the whole carcass bulk composting area.

The following data recording sheets have been developed to capture information critical to composting processes:

5. Abattoir By-Product Removal to Composting Site (SAFAM-CP1) - This form captures the contents and quantity of by-product removed each day from the abattoir to the composting facility.
6. SAFAM Compost Batch Record Log (SAFAM-CP2) - Records the contents and quantities added to each windrow of each compost batch (Recipe); the completed log will contain information regarding the checks, process and analysis conducted for that compost batch.
7. Compost Site Hygiene Record (SAFAM-CP3) - This is the form to be completed in support of SOP 3.
8. Windrow Daily Temperature and pH Checks (SAFAM-CP4) - This form is to be completed in support of SOP 4.
9. Fly Treatment Record (SAFAM-CP5) - This form is to record the fly treatment conducted on site to mitigate the nuisance.

The review and improvement of SOPs and the related forms will improve operations of the facility thus reducing the negative impacts associated with the activity. The implementation of strict procedures and protocols will ensure that negative impacts that are effectively mitigated.

The implementation of the existing Standard Operating Procedures (SOPs) for the composting facility as well as the SOPs of the feedlot will mitigate the impacts effectively. These will be monitored regularly. Problems experienced / complaints received will be recorded in a complaints register and addressed when required.

(f) The option of **not implementing** the activity (the '*No-Go*' Option):

The No-Go option will result in the site remaining as is presently, underutilized Agricultural land.

A waste to one industry is an input/essential ingredient for another.

The composting facility on the farm Middelburg offers currently the only solution for the handling of the by-products of Robertson Abattoir, one of the largest employment generators in the Langeberg area.

The location is desirable due to the rural character, topography, distance to water course, soil conditions and availability of services and infrastructure, and is also supported by the SDF.

The manufacturing of compost adding such animal by-products is not an established industry in South Africa, and successful overseas examples had to be studied. The operators are, however, eager to learn and strive to operate the compost facility without any detrimental impacts on the environment. The impacts on the immediate environment are already much lower than in the beginning of 2017 when it was initiated.

The establishment of the feedlot is proposed in a viable location. The manure will be used as an essential component of the composting facility and therefore these two land uses will be interdependent.

The uses applicable in this application are both needed and desirable in this location.

(g) **Other** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

No additional alternatives to avoid negative impacts were considered.

(h) Provide a **summary** of all alternatives investigated and the outcome of each investigation:

**Location alternatives** - A waste to one industry is an input/essential ingredient for another.

The composting facility on the farm Middelburg offers currently the only solution for the handling of the by-products of Robertson Abattoir, one of the largest employment generators in the Langeberg area.

The location is desirable due to the rural character, topography, distance to water course, soil conditions and availability of services and infrastructure, and is also supported by the SDF.

The manufacturing of compost adding such animal by-products is not an established industry in South Africa, and successful overseas examples had to be studied. The operators are, however, eager to learn and strive to operate the compost facility without any detrimental impacts on the environment. The impacts on the immediate environment are already much lower than in the beginning of 2017 when it was initiated.

The establishment of the feedlot is proposed in a viable location. The manure will be used as an essential component of the composting facility and therefore these two land uses will be interdependent.

The uses applicable in this application are both needed and desirable in this location.

**Activity alternatives** -

**ESTABLISHMENT AND OPERATION OF A COMPOST FACILITY (*PREFERRED OPTION*):**

Composting is a managed biological decomposition process that converts organic matter into stable, humus-like material. In the case of mortality composting, the organic matter being converted includes the animal carcass. Composting is a process in which micro-organisms flourish with the proper mixture of bulking agents (e.g. woodchips), animal tissue, water and air.

**FEEDLOT (*PREFERRED OPTION*)**

The establishment of a feedlot on the proposed site will primarily ensure a consistent supply of lambs

for the abattoir. SAFAM Robertson procures lambs from farmers who need to reduce their livestock numbers due to unfavourable environmental conditions. The feedlot will provide capacity for the keeping of these animals until they are in a market ready state. The activity associated with the feedlot is compatible with the activities associated with the compost facility; as such no other activity alternatives were investigated.

Considering the above, the composting and feedlot activities are the **PREFERRED ACTIVITY OPTION**.

**Layout alternatives –** According to the above guidelines, the compost plant is desirable in the proposed location. Although the feedlot will be located in the area earmarked for "extensive agriculture", it is already disturbed land further than 32m away from the side of the water course and situated between the kraal and compost plant that are all interdependent. Taking all of the above impacting factors into account the proposed layout is the only reasonable and feasible alternative available that would maximise the potential of the property as well as meet the size requirements for each of the proposed activities.

**Technology alternatives** - Composting when done properly, the process consumes tissue, minimizes odours and produces quality finished compost.

Five Standard Operating Procedures (SOPs) have been developed to monitor the successful operation of the composting site (attached):

- SOP 1: Compost Process Flow / Flow diagram
- SOP 2: Removal and Delivery of By-products
- SOP 3: Site Hygiene
- SOP 4: pH and Temperature Testing and Recording
- SOP 5: Pest Control

These were developed in December 2016 and March 2017 and were updated in May 2017. It is a learning curve in South Africa and the current operation has improved to a large extent over the last few months.

Forms that needed to be completed by the workers throughout the process are included as part of the operation EMPr.

The operation of the feedlot will adhere to strict management and monitoring standards. Each lamb will be marked and monitored, dosed as required and transported subject to the requirements of the abattoir. The operation is audited/monitored on a regularly basis to ensure that the feedlot and abattoir adhere to the required standards.

**Operational alternatives** - The review and improvement of SOPs and the related forms will improve operations of the facility thus reducing the negative impacts associated with the activity. The implementation of strict procedures and protocols will ensure that negative impacts that are effectively mitigated.

The implementation of the existing Standard Operating Procedures (SOPs) for the composting facility as well as the SOPs of the feedlot will mitigate the impacts effectively. These will be monitored regularly. Problems experienced / complaints received will be recorded in a complaints register and addressed when required.

**The No-Go Option**- The No-Go option will result in the site remaining as is presently, underutilized Agricultural land.

A waste to one industry is an input/essential ingredient for another.

The composting facility on the farm Middelburg offers currently the only solution for the handling of the by-products of Robertson Abattoir, one of the largest employment generators in the Langeberg area.

The location is desirable due to the rural character, topography, distance to water course, soil conditions and availability of services and infrastructure, and is also supported by the SDF.

The manufacturing of compost adding such animal by-products is not an established industry in South Africa, and successful overseas examples had to be studied. The operators are, however, eager to learn and strive to operate the compost facility without any detrimental impacts on the environment. The impacts on the immediate environment are already much lower than in the beginning of 2017 when it was initiated.

The establishment of the feedlot is proposed in a viable location. The manure will be used as an essential component of the composting facility and therefore these two land uses will be interdependent.

(i) Provide a detailed **motivation for not further considering** the alternatives that were found not feasible and reasonable, including a description and proof of the investigation of those alternatives:

A waste to one industry is an input/essential ingredient for another.

The composting facility on the farm Middelburg offers currently the only solution for the handling of the by-products of Robertson Abattoir, one of the largest employment generators in the Langeberg area.

The location is desirable due to the rural character, topography, distance to water course, soil conditions and availability of services and infrastructure, and is also supported by the SDF.

The manufacturing of compost adding such animal by-products is not an established industry in South Africa, and successful overseas examples had to be studied. The operators are, however, eager to learn and strive to operate the compost facility without any detrimental impacts on the environment. The impacts on the immediate environment are already much lower than in the beginning of 2017 when it was initiated.

The establishment of the feedlot is proposed in a viable location. The manure will be used as an essential component of the composting facility and therefore these two land uses will be interdependent.

## 2. PREFERRED ALTERNATIVE

(a) Provide a **concluding statement** indicating the preferred alternative(s), including preferred location, site, activity and technology for the development.

**ESTABLISHMENT AND OPERATION OF A COMPOST FACILITY (*PREFERRED OPTION*):**

Composting is a managed biological decomposition process that converts organic matter into stable, humus-like material. In the case of mortality composting, the organic matter being converted includes the animal carcass. Composting is a process in which micro-organisms flourish with the proper mixture of bulking agents (e.g. woodchips), animal tissue, water and air.

When done properly, the process consumes tissue, minimizes odours and produces quality finished compost.

The five criteria of a good recipe are:

- Carbon (plant) and Nitrogen (animal) ratios (C:N)
- Moisture Content
- Particle Size
- Oxygen Content
- Temperature
- pH

**Carbon and Nitrogen Ratios (C:N)**

The proper mix of composting materials requires both carbon and nitrogen at a 15:1 to 20:1 ratio. With the proper C:N mix, odour will be minimal and an environment conductive to the growth of micro-organisms will be obtained.

Animal by-products alone will cause the C:N ratio to be out of balance as it will have too high nitrogen level and the by-products will also tend to be wetter, with a variable particle size. In order to achieve the correct C:N ratio, plant material need to be added such as wood chips (sourced from Langeberg Municipality) and sawdust with a high absorbent nature.

**Moisture Content**
Moisture content of the compost mixture should be between 50% and 60%. This will vary depending upon the stage of the compost pile/windrow and where in the pile the sample was taken. Moisture concentrations higher than 60% (when water runs from moisture compost) should be avoided as this can generate odours and increase the chance of leachate from the compost.

**Particle Size & Oxygen Concentration**
Particle size is critical to ensure adequate aeration of the compost pile. The ideal size is between 2,5mm to 10mm with the larger sizes increasing the porosity of the pile allowing for easier airflow in the pile, maintaining oxygen concentrations to optimize microbial growth. As the composting process progresses, the micro-organisms break down the particles, which causes compacting and reduce the airflow. Regular turning of the compost, introducing oxygen back into the pile, reduces the impact of particle size reduction.

**Temperature**
Temperature is both a critical parameter and reliable indicator for successful compost production. Optimal composting temperatures range from between 40-60 degrees centigrade, as this is the range where-in the specific bacteria operate. In order to ensure human and plant pathogens are killed, the compost must be at 55 degrees for a minimum of 72 hours. Five cycles of 3 days on 55 degrees are used to ensure the optimal product.

**pH**
Active composting will only occur within a pH range of 5,5 to 9 as this is the favourable environment of the bacteria. Below a pH of 5,5 the composting process slows down, while a high pH above 8,5 promotes the conversion of nitrogenous compounds to ammonia which is the cause of unfavourable odours. Under normal conditions the pH does not need to be adjusted because of the natural buffering capacity of commonly available components of compost and the normal pH of animal tissue.

Five Standard Operating Procedures (SOPs) have been developed to monitor the successful operation of the composting site (attached):

- SOP 1: Compost Process Flow / Flow diagram
- SOP 2: Removal and Delivery of By-products
- SOP 3: Site Hygiene
- SOP 4: pH and Temperature Testing and Recording
- SOP 5: Pest Control

These were developed in December 2016 and March 2017 and were updated in May 2017. It is a learning curve in South Africa and the current operation has improved to a large extent over the last few months.

Forms that needed to be completed by the workers throughout the process are included as part of the operation EMPr.

**FEEDLOT (*PREFERRED OPTION*)**
The establishment of a feedlot on the proposed site will primarily ensure a consistent supply of lambs for the abattoir. SAFAM Robertson procures lambs from farmers who need to reduce their livestock numbers due to unfavourable environmental conditions. The feedlot will provide capacity for the keeping of these animals until they are in a market ready state. The activity associated with the feedlot is compatible with the activities associated with the compost facility; as such no other activity alternatives were investigated.

The steel store consist of 9 demarcated areas on each side (18 in total) can accommodate 250 lambs each, therefore a total of 4500 lambs on any one time. One of the camps are left empty to

nurse sick lambs. It will be placed in a NW – SE direction to enable the longest hours for the sun to shine through and for the feedlot to stay dry.

Feeding is provided constantly, therefore the lambs do not have to eat all at the same time. The 18 demarcated areas are larger than the steel structure and are lengthened to both sides of the roof. The total sheep feedlot is 6000m$^2$ in extent.

Lambs are bought mostly during winter months from the local farmers when the natural pastures become less and lambs need supplements. These lambs are fed for approximately one month on an intensive basis in the feedlot under controlling circumstances, where-after they are transported to the Robertson Abattoir to be slaughtered.

The operation of the feedlot will remain unchanged from the existing one and will adhere to the existing strict management and monitoring standards. Each lamb will be marked and monitored, dosed as required and transported subject to the requirements of the abattoir. The operation is audited/monitored on a regularly basis to ensure that the feedlot and abattoir adhere to the required standards.

Feeding pills will be delivered by Meadow Feeds and stored in the four silos (two on each side of the steel structure). The feedlot has a semi-automatic self-feeder system. No animal by-products are allowed as feed according to the regulation of the abattoir.

Drinking water is obtained through a pipeline from a borehole that is registered for 14 000m$^3$ per year (registration certificate attached Appendix E2). Ownership is in process of being transferred to the new owner (Applicant).

Considering the above, the composting and feedlot activities are the **PREFERRED ACTIVITY OPTION**.

## SECTION F: ENVIRONMENTAL ASPECTS ASSOCIATED WITH THE ALTERNATIVES

**Note**: The information in this section must be DUPLICATED for all the feasible and reasonable ALTERNATIVES.

### 1. DESCRIBE THE ENVIRONMENTAL ASPECTS ASSOCIATED WITH THE PROPOSED DEVELOPMENT AND ITS ALTERNATIVES, FOCUSING ON THE FOLLOWING:

(a) Geographical, geological and physical aspects:

The proposed development is situated at Middelburg Farm located approximately 14km northwest of Robertson, east of the R60. The area is rural with mainly vineyards, orchards, grazing and natural veld. The site is located at the foot of a mountain ridge, adjacent to a tributary of the Vink River. The gradient is uneven with small hills at the foothill of the Langeberg Mountain. The application site itself is already disturbed with a fall of 3.2%. An elevation profile of the property has been included below, indicating the position of the Feedlot and Composting Facility in relation to the receiving environment.

Portion 6 of the farm Middelburg No 10 belongs to Reben Trust and is 758,0308 hectares in extent according to Title Deed No T12255/2013.

The farm consists of the following:

- Store/shed built on a previous foundation near the Middelstekloof River (within 32m from the river and is addressed in a Basic Assessment Report to DEADP);
- Workers house (±70m$^2$);
- Several dams within the Middelstekloof River that were constructed by previous owners. During the last floods approximately nine years ago, most of the embankments of these dams have been damaged/destroyed. The two top dams are registered with BGCMA for 50 000m$^3$ or 7ha water as well as a borehole (14 000m$^3$ to be used for proposed sheep feedlot as agricultural use) and water from the mountain/river (14 000m$^3$ or 2ha per year);
- No water is needed for the compost plant;
- ±15 ha grazing wet by rain water and above-mentioned 9ha water;

- Kraal and weight station for individual livestock; and
- 8.6ha already transformed, application area consisting of bulk pile/s, windrows and two effluent dams. (This area was previously ploughed and planted with pastures and used for grazing purposes.)

The closest residential building is a farmhouse across the road, situated approximately 550m south-west of the application site. The nearest Buitenstekloof Guest Cottage is located approximately 2.36km to the north-east of the site.

The nearest cultivated lands on the neighbouring farm are approximately 550m away.

The proposed action will not have a significant adverse cumulative effect on topography, slopes, and soils as the site is transformed as a result of past and present activities conducted on the site.

The sensitive natural, geographical constraints, and cultural land uses were assessed during the EIA process and the development layout is designed according to the influences of such parameters.

(b) Ecological aspects:

| | | |
|---|---|---|
| Will the proposed development and its alternatives have an impact on CBAs or ESAs?<br>If yes, please explain:<br>Also include a description of how the proposed development will influence the quantitative values (hectares/percentage) of the categories on the CBA/ESA map. | YES | ~~NO~~ |

**Freshwater Ecosystems**

During the site visit, the freshwater ecosystems that were identified were classified into relevant types according to the classification system for inland aquatic ecosystems in South Africa (Ollis *et al.* 2013)[3]. The approximate extent of wetlands was delineated following standard field-based procedures for the identification and delineation of wetlands (after DWAF 2005). The definition of "wetland" adopted for this investigation was that of the National Water Act (Act No. 36 of 1998), whereby a wetland is defined as "*land which is transitional between terrestrial and aquatic systems, where the water table is usually at, or near the surface, or the land is periodically covered with shallow water and which land in normal circumstances supports, or would support, vegetation adapted to life in saturated soil*."

Following this definition and the standard wetland delineation protocols, no wetlands were identified on or adjacent to the proposed feedlot and compost sites. However, a non-perennial river is situated on the northern edge of the proposed impacted area.

A non-perennial river is situated on the northern edge of the proposed site. This river is a tributary of the Vink River. The closest point from the development to the river bank is approximately 44m and the widest 109m. During the site visit, visual observations were made of the potentially affected river systems. Particular note was made of existing impacts to the integrity of the instream and riparian habitat provided by these systems.

Rivers in this longitudinal zone are typically characterised by a moderately steep, cobble-bed or mixed bedrock-cobble bed channel, with a narrow floodplain of sand, gravel or cobble often present adjacent to the river channel. It is presumed that these drainage lines have a naturally ephemeral (episodic) flow regime, only flowing for a short time after relatively major rainfall events.

The study area falls within the Southern Folded Mountains Ecoregion (after Kleynhans *et al*. 2005), near the transition to the Western Folded Mountains Ecoregion (to west) and the Southern Coastal Belt Ecoregion (to south). More specifically, the study area forms part of the lowlands of the Langeberg Mountains, situated relatively close to the Langeberg-West Mountain Catchment conservation area. The physiographical characteristics of the Southern Folded Mountains Ecoregion, in terms of terrain morphology, are typically characterised by a diverse topography of closed hills and mountains with a moderate to high relief (slopes with a gradient of >5% are predominant within the Ecoregion).

[3] Ollis DJ, Snaddon CD, Job NM and Mbona N (2013). Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland Systems. *SANBI Biodiversity Series 22*. South African National Biodiversity Institute, Pretoria.

**Photo 1:** View of the upper reaches and catchment area of the non-perennial river.

The study area for the proposed development is thus somewhat atypical of the Ecoregion within which it falls, being located in a relatively non-mountainous part of the landscape. The rainfall seasonality and the vegetation types that occur within the Southern Folded Mountains Ecoregion are highly variable.

The soils associated with the river are classified as alluvial bottomlands, cobble-bed or mixed bedrock-cobble bed channel, with a narrow floodplain of sand, gravel or cobble often present adjacent to the river channel.

**Photo 2:** View of the soil profile of the non-perennial river next to the proposed feedlot and compost area.

**Photo 3:** View of the soil profile of the non-perennial river next to the proposed feedlot and compost area.

A non-perennial river which is a tributary of the Vink River was identified in the impacted area. This non-perennial river originates in the Langeberg Mountains at an elevation of approximately 700m above mean sea level east of the site and flows in a westerly direction for approximately 5.5km before it reaches the site and meets up with the Vink River approximately 300m west of the site. Two earthen instream storage dams were constructed in the river and 7 roads cross the river before it meets the impacted area.

**Photo 4:** View of one of the roads crossing the non-perennial river next to the proposed feedlot and compost area.

**Conclusions and recommendations:**

Following this definition and the standard wetland delineation protocols, no wetlands were identified on or adjacent to the proposed feedlot and compost sites. However, a non-perennial river is situated on the northern edge of the proposed impacted area.

The study area for the proposed development is thus somewhat atypical of the Ecoregion within which it falls, being located in a relatively non-mountainous part of the landscape. The rainfall seasonality and the vegetation types that occur within the Southern Folded Mountains Ecoregion are highly variable. The potentially affected river reach is characterised by a fairly incised single channel, approximately 10 to 20m wide, which has a bed comprising mostly cobbles and sand.

*Vachellia karoo* is common and the dominant species in the river channel and valleys.

On the northern bank of the river, adjacent to the main channel of the potentially affected reach of the river, there is a floodplain area of approximately 30m in width. This floodplain area is dominated by *Galenia africana*. From the relatively dense growth of shrubs within the floodplain, it is evident that the floodplain does not get inundated nearly as frequently as it would have under natural conditions. The *Galenia africana* is also an indicator species of heavy impact and disturbance most likely as a result of animal grazing and trampling.

On the southern bank of the affected river reach, the river is characterised by a steep bank and an elevated area that creates a berm which will result in the water that is flowing in the river being confined to the channel and if it floods the water will overflow towards the north into the flood plain. All storm and rain water from the impacted areas flow away from the river as a result of this elevated area. No indigenous vegetation exists between the river bank and the feedlot and compost facility.
The overall results were that the relevant reach of the river is in a poor ecological condition, with a PES Category of D ("largely modified") for both the instream and riparian components of the river systems.

In terms of its EIS, the potentially affected reach of the river was rated to be of low/marginal EIS for biotic criteria, but with a low level of confidence due to the absence of biotic data, and of moderate EIS for habitat criteria. The overall EIS rating for the potentially affected reach of the river was that this system is of low-to-moderate ecological importance and sensitivity. Despite the low-to-moderate EIS of the river, it is important to bear in mind that this river forms an important ecological corridor and is a major tributary of the Vink River, which is ecologically important to the Breede River. In addition, the floodplain along the river has been recognised as an Aquatic CBA in the WCBPF and the C.A.P.E. Fine Scale Planning initiative for the Upper Breede Valley. This elevates the conservation importance of the river corridor and implies that it should be protected from any further degradation.

Pollution of the river system due to the possible risk of contaminated storm water from the feedlot and compost facilities entering the river systems generally result in significant impacts and degradation of the freshwater ecological system and functioning.
In the light of the results generated through the application of the WRC Buffer Tool (Macfarlane *et al*. 2014) to the drainage line within the proposed impacted area, the retention of a buffer area of at least 32m in width along the sides of the drainage line is considered to be adequate if the above-mentioned mitigation measures for reducing risk as a result of the operational phase are implemented.

***Source: Freshwater Ecological Impact Assessment, 2018. Eco Impact Legal Consulting.***

**Biodiversity:**
The whole site is currently zoned as Agriculture 1. The site was previously ploughed and planted with pastures and used for grazing purposes. From time to time livestock is placed on the farm to finish it until it reaches slaughter weight. As such the site is completely transformed with no natural area remaining. Vast patches of bare soil are evident in site photographs and aerial images.

According to the Western Cape Biodiversity Spatial Plan 2017 the area identified for the Feedlot has not been identified as a CBA or ESA. However the area identified for the Compost facility has been identified as a Terrestrial CBA. This is however not consistent with the existing state of the site, which has been completely transformed as a result of past and existing activities.

During the site visit, the freshwater ecosystems that were identified were classified into relevant types according to the classification system for inland aquatic ecosystems in South Africa (Ollis *et al.* 2013)[4]. The approximate extent of wetlands was delineated following standard field-based procedures for the identification and delineation of wetlands (after DWAF 2005). The definition of

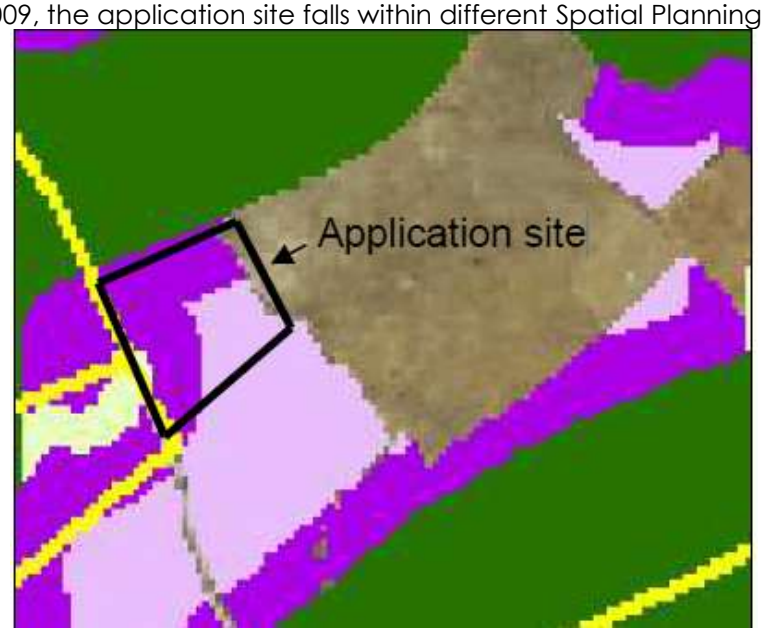
[4] Ollis DJ, Snaddon CD, Job NM and Mbona N (2013). Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland Systems. *SANBI Biodiversity Series 22*. South African National Biodiversity Institute, Pretoria.

"wetland" adopted for this investigation was that of the National Water Act (Act No. 36 of 1998), whereby a wetland is defined as "*land which is transitional between terrestrial and aquatic systems, where the water table is usually at, or near the surface, or the land is periodically covered with shallow water and which land in normal circumstances supports, or would support, vegetation adapted to life in saturated soil*."

Following this definition and the standard wetland delineation protocols, no wetlands were identified on or adjacent to the proposed feedlot and compost sites. However, a non-perennial river is situated on the northern edge of the proposed impacted area.

A non-perennial river is situated on the northern edge of the proposed site. This river is a tributary of the Vink River. The closest point from the development to the river bank is approximately 44m and the widest 109m. During the site visit, visual observations were made of the potentially affected river systems. Particular note was made of existing impacts to the integrity of the instream and riparian habitat provided by these systems.

According to information received from the Municipality, and according to the Provincial Rural Guidelines of May 2009, the application site falls within different Spatial Planning Categories:




- Green: Core 1 area: Critical biodiversity areas / no-go area to the north of the application site (Middelstekloof River)
- Dark purple: Buffer 1 area: Remnants of natural or near natural vegetation: Extensive agriculture
- Light purple: Buffer 2 Areas: Other natural areas, i.e. livestock production as dominant land use: Activities and uses directly to the primary agricultural enterprise, additional land uses to facilitate diversification and value adding e.g. local product processing, space extensive requirements such as nuisance and buffer requirements such as solid waste disposal sites, feedlots etc.
- Brown: Transformed area / Yellow: Cadastral boundaries (not correct)

The whole application site is already transformed and disturbed and is not consistent with the above. According to the above guidelines, the compost plant is desirable in this location. Although the feedlot will be located in the area earmarked for "extensive agriculture", it is already disturbed land further than 32m away from the side of the water course and situated between the kraal and compost plant that are all interdependent.
The alignment of the ESKOM line across this area prohibits the feedlot to be located closer to the compost plant.

| | | |
|---|---|---|
| Will the proposed development and its alternatives have an impact on terrestrial vegetation, or aquatic ecosystems (wetlands, estuaries or the coastline)?<br>If yes, please explain: | YES | ~~NO~~ |
| See above. | | |

| Will the proposed development and its alternatives have an impact on any populations of threatened plant or animal species, and/or on any habitat that may contain a unique signature of plant or animal species?<br>If yes, please explain: | YES | ~~NO~~ |
|---|---|---|
| Breede Alluvium Renosterveld<br>Status 2016: EN<br>Status 2014: Vulnerable (VU)<br>Status 2011: VU<br>Change: more threatened<br>Change Type: VU-EN<br>Change Year: 2016<br>***Source: Ecosystems threat Status, CapeFarmMapper, 07 March 2018.***<br><br>This is however not consistent with the existing state of the site, which has been completely transformed as a result of past and existing activities. | | |
| Describe the manner in which any other biological aspects will be impacted: | | |
| Strict adherence to the Environmental Management Programme must be implemented. | | |
| Will the proposed development also trigger section 63 of the NEM: ICMA? | ~~YES~~ | NO |
| If yes, describe the following:<br>(i) the extent to which the applicant has in the past complied with similar authorisations;<br>(ii) whether coastal public property, the coastal protection zone or coastal access land will be affected, and if so, the extent to which the proposed development proposal or listed activity is consistent with the purpose for establishing and protecting those areas;<br>(iii) the estuarine management plans, coastal management programmes, coastal management lines and coastal management objectives applicable in the area;<br>(iv) the likely socio-economic impact if the listed activity is authorised or is not authorised;<br>(v) the likely impact of coastal environmental processes on the proposed development;<br>(vi) whether the development proposal or listed activity—<br>(a) is situated within coastal public property and is inconsistent with the objective of conserving and enhancing coastal public property for the benefit of current and future generations;<br>(b) is situated within the coastal protection zone and is inconsistent with the purpose for which a coastal protection zone is established as set out in section 17 of NEM: ICMA;<br>(c) is situated within coastal access land and is inconsistent with the purpose for which coastal access land is designated as set out in section 18 of NEM: ICMA;<br>(d) is likely to cause irreversible or long-lasting adverse effects to any aspect of the coastal environment that cannot satisfactorily be mitigated;<br>(e) is likely to be significantly damaged or prejudiced by dynamic coastal processes;<br>(f) would substantially prejudice the achievement of any coastal management objective; or<br>(g) would be contrary to the interests of the whole community;<br>(vii) whether the very nature of the proposed activity or development requires it to be located within coastal public property, the coastal protection zone or coastal access land;<br>(viii) whether the proposed development will provide important services to the public when using coastal public property, the coastal protection zone, coastal access land or a coastal protected area; and<br>(ix) the objects of NEM: ICMA, where applicable. | | |
| NOT APPLICABLE | | |

(c) Social and Economic aspects:

| What is the expected capital value of the project on completion? | R Unknown | |
|---|---|---|
| What is the expected yearly income or contribution to the economy that will be generated by or as a result of the project? | R Unknown | |
| Will the project contribute to service infrastructure? | ~~YES~~ | NO |
| Is the project a public amenity? | ~~YES~~ | NO |
| How many new employment opportunities will be created during the development phase? | Unknown | |
| What is the expected value of the employment opportunities during the development phase? | Unknown | |
| What percentage of this will accrue to previously disadvantaged individuals? | 90% | |
| How will this be ensured and monitored (please explain): | | |
| Audited in terms of the authorizations. | | |
| How many permanent new employment opportunities will be created during the operational phase of the project? | Unknown | |
| What is the expected current value of the employment opportunities during the first 10 years? | R Unknown | |
| What percentage of this will accrue to previously disadvantaged individuals? | 90% | |
| How will this be ensured and monitored (please explain): | | |
| Audited in terms of the authorizations. | | |

| Any other information related to the manner in which the socio-economic aspects will be impacted: |
|---|
| Not Applicable. |

(d) Heritage and Cultural aspects:

| |
|---|
| Notice of Intent to Develop has been submitted to Heritage Western Cape to determine impacts and specialist studies required in terms of cultural and historical aspects potentially to be impacted upon. HWC has commented that no further action would be required.<br><br>However should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the excavation of the activities above all works must be stopped immediately an Heritage Western Cape must be notified without delay.<br>*See Appendix E1 |

## 2. WASTE AND EMISSIONS

(a) Waste (including effluent) management

| Will the development proposal produce waste (including rubble) during the development phase? | YES | ~~NO~~ |
|---|---|---|
| If yes, indicate the types of waste (actual type of waste, *e.g.* oil, and whether hazardous or not) and estimated quantity per type? | | $m^3$ |
| No construction waste will be generated for the development of the compost facility. The area will be shaped and the soil material generated during the construction of the storm water channels and dam will be used on site to construct the storm water management facilities.<br><br>Some builder's rubble will be generated during the erection of the feedlot. This however will be minimal. Builder's rubble generated that cannot be used on site will be collected and disposed of at a licenced waste disposal facility. | | |

| Will the development proposal produce waste during its operational phase? | ~~YES~~ | NO |
|---|---|---|
| If yes, indicate the types of waste (actual type of waste, *e.g.* oil, and whether hazardous or not) and estimated quantity per type? | | $m^3$ |
| Small volumes of operational waste (i.e. beverage, food, etc.) will be generated by the onsite operational personnel. Waste that can be composted will be composted on site. Any other waste will be collected in sealed waste bins and disposed of at a licensed waste disposal site in close proximity weekly or when the bins are full. Organic waste (manure and urine) from the feedlot will be generated. This will all be collected and treated at the onsite compost facility. | | |

| Will the development proposal require waste to be treated / disposed of on-site? | ~~YES~~ | NO |
|---|---|---|
| If yes, indicate the types of waste (actual type of waste, *e.g.* oil, and whether hazardous or not) and estimated quantity per type per phase of the proposed development to be treated/disposed of? | | $m^3$ |
| Small volumes of operational waste (i.e. beverage, food, etc.) will be generated by the onsite operational personnel. Waste that can be composted will be composted on site. Any other waste will be collected in sealed waste bins and disposed of at a licensed waste disposal site in close proximity weekly or when the bins are full. Organic waste (manure and urine) from the feedlot will be generated. This will all be collected and treated at the onsite compost facility. | | |
| If no, where and how will the waste be treated / disposed of? Please explain.<br>Indicate the types of waste (actual type of waste, *e.g.* oil, and whether hazardous or not) and estimated quantity per type per phase of the proposed development to be treated/disposed of? | | $m^3$ |
| Small volumes of operational waste (i.e. beverage, food, etc.) will be generated by the onsite operational personnel. Waste that can be composted will be composted on site. Any other waste will be collected in sealed waste bins and disposed of at a licensed waste disposal site in close proximity weekly or when the bins are full. Organic waste (manure and urine) from the feedlot will be generated. This will all be collected and treated at the onsite compost facility. | | |
| Has the municipality or relevant authority confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal?<br>If yes, provide written confirmation from the municipality or relevant authority.**NA** | ~~YES~~ | ~~NO~~ |
| Will the development proposal produce waste that will be treated and/or disposed of at another facility other than into a municipal waste stream? **NA** | ~~YES~~ | ~~NO~~ |

| | | |
|---|---|---|
| If yes, has this facility confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal?<br>Provide written confirmation from the facility.**NA** | ~~YES~~ | ~~NO~~ |
| Does the facility have an operating license? (If yes, please attach a copy of the licence.)**NA** | ~~YES~~ | ~~NO~~ |

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

| |
|---|
| Describe the measures that will be taken to reduce, reuse or recycle waste: |
| Small volumes of operational waste (i.e. beverage, food, etc.) will be generated by the onsite operational personnel. Waste that can be composted will be composted on site. Any other waste will be collected in sealed waste bins and disposed of at a licensed waste disposal site in close proximity weekly or when the bins are full. Organic waste (manure and urine) from the feedlot will be generated. This will all be collected and treated at the onsite compost facility. |

(b) Emissions into the atmosphere

| | | |
|---|---|---|
| Will the development proposal produce emissions that will be released into the atmosphere? | ~~YES~~ | NO |
| If yes, does this require approval in terms of relevant legislation? | ~~YES~~ | NO |
| If yes, what is the approximate volume(s) of emissions released into the atmosphere? | | $m^3$ |
| Describe the emissions in terms of type and concentration and how these will be avoided/managed/treated/mitigated: | | |
| NOT APPLICABLE | | |

## 3. WATER USE

(a) Indicate the source(s) of water for the development proposal by highlighting the appropriate box(es).

| | | | | | |
|---|---|---|---|---|---|
| ~~Municipal~~ | ~~Water board~~ | Groundwater | ~~River, Stream, Dam or Lake~~ | ~~Other~~ | ~~The project will not use water~~ |

**Note**: Provide proof of assurance of water supply (e.g. Letter of confirmation from the municipality / water user associations, yield of borehole)

| | | |
|---|---|---|
| (b) If water is to be extracted from a groundwater source, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month :**Existing Licensed dam see Appendix E2** | 1163.4 | $m^3$ |

| | | |
|---|---|---|
| (c) Does the development proposal require a water use permit / license from DWS? | YES | ~~NO~~ |
| If yes, please submit the necessary application to the DWS and attach proof thereof to this application as an Appendix. | | |
| Drinking water is obtained through a pipeline from a borehole that is registered for 14 000m3 per year (registration certificate attached in Appendix E2). Ownership is in process of being transferred to the new owner (Applicant).<br><br>This water was analysed in July 2017 and the results are attached in Appendix K2.<br><br>This amount is adequate for the drinking water of the sheep:<br>4500 lambs X 8,5 liter water per lamb per day = 38 250 liter per day or 13 961m3 per year.<br><br>The water will be stored in three water tanks with 10 000 liter capacity each which flows to the water troughs inside the feedlot. | | |

| |
|---|
| (d) Describe the measures that will be taken to reduce water demand, and measures to reuse or recycle water: |
| Two dams were constructed at the lowest point on the terrain. The northeastern dam is constructed to catch run-off storm water emanating from the lands and area above the dam, whilst the south-western, smaller dam is for the effluent from the windrows and feedlot. Run off water (only in rainy seasons) from the windrows will be caught by the cut-off weir/barrier on the western side of the windrows from where it will flow with gravity in a channel to the lowest dam. Compacted drainage channels around the feedlot will direct run off water also to the lowest dam. [There is no need for a plastic or concrete lining of the drainage canal according to the soil study.] |

This water will be re-used when required to wet the windrows on top of the rows.

After 9 months of operation, very little, if any, run off water was visible in the larger, clean dam. There was some collection of rain water into both the clean and "dirty" dam. No running of water from the compost site to the lower dam was visible at any time. The windrows themselves form an effective barrier for run-off water.

A 10 meter deep bore hole will be drilled between the catchment dam and the fence of the property to allow quarterly sampling of the ground water if there is any present.

## 4. POWER SUPPLY

(a) Describe the source of power *e.g.* municipality / Eskom / renewable energy source.

No electricity is required at the composting facility.

An ESKOM power line with transformer traverses the site. An employee of ESKOM was on site and indicated that 1m on each side of the line has to be kept open/vacant for maintenance purposes.

The existing windrows that are located underneath the line are temporary and will not be replaced. Low voltage lights will shine during the night to ensure that the lambs can eat through the night. Floodlights will be used to secure the feedlot during the night.

(b) If power supply is not available, where will power be sourced?

NOT APPLICABLE.

## 5. ENERGY EFFICIENCY

(a) Describe the design measures, if any, that have been taken to ensure that the development proposal will be energy efficient:

Refer to technological and operational alternatives above.

(b) Describe how alternative energy sources have been taken into account or been built into the design of the project, if any:

NOT APPLICABLE.

## 6. TRANSPORT, TRAFFIC AND ACCESS

Describe the impacts in terms of transport, traffic and access.

**Impacts of trucks: dust, noise and obstruction in DR 1377:**

- The Abattoir by-products (blood, "pensmis", and minimal carcasses) are gathered on the Abattoir property in the industrial area of Robertson.
- This is transported in dedicated blood tanks (honey suckers) and skip trucks daily to the application site. The number of trips are/will be:
  - Honey suckers with blood: once per day
  - 8 ton skip trucks (truck with tank on top): approx. every second day
  - No trip on weekends, except in emergency cases
  - Sheep will be transported in livestock trucks to/from the site once a day.
- Most of the trip length will be on tar road (R60 and DR 1384), with only 2km on DR 1377 (gravel) that will create dust.
- The two to three additional trips daily will not have an additional substantial impact if compared to the surrounding environment:
  - The R60 carries many trucks between Robertson and Worcester and the railway line runs adjacent to the road;
  - DR 1384 (tar road) between the R60 and the lime quarry carries many and much heavier trucks to and from the quarry to the lime industry adjacent to the R60;
  - The lime factory/industry itself creates much noise and dust from their 20/25 ton trucks alongside the R60; and

- ❖ DR 1377 (gravel road) between Rooiberg Cellar and Nuy carries many trucks from wine farmers, sheep/cattle farmers, and a brewery on a daily basis.
- The two gates to the application site were placed approximately 20m inside the boundary of the application site to prevent any obstructions by trucks in road DR 1377.

## 7. NUISANCE FACTOR (NOISE, ODOUR, etc.)

Describe the potential nuisance factor or impacts in terms of noise and odours.

**Flies:**

- All by-products are covered immediately on delivery which reduces the numbers of flies to a large extent.
- The composting process will control the spread of diseases through correct management of temperature and ph. No larva/eggs/worms/bacteria can live in the desirable 55°C within the windrows.
- The rows are covered with dry kraal manure from the feedlot that reduce the smell, prevent the attraction of flies and are not favourable for flies to lay eggs as it is too dry and warm for them.
- In addition, the rows are also treated with chemicals such as Neoprene from Coopers which is aimed at killing the eggs and larvae of the flies. Baycidal and Temprid from Bayer are also used to kill the flies and larvae. Quik Bayt is dry crystals which attracts and kills flies on contact and are placed at several points around the site.
- The sheep and manure will attract flies that live in the plants/fynbos in the surrounding area, but will be managed by providing fly traps at the feedlot, similar to the 19+ pheromone fly traps hanging on the fence alongside the composting facility.
- This will be replaced on a regularly basis. In addition, the sheep and manure will be treated as explained above.

**Odours:**

- The balance of PH, temperature, air, moisture are critical parameters to ensure correct fermentation/digestion without causing odour or any other problems in the composting facility. These are monitored by the farm manager on a daily basis. Bemlab results for testing compost samples shows a good quality compost with a desirable C:N ratio.
- Any abattoir product that is brought to the site is covered immediately, except for blood that needs to be soaked for 1 hour before turning and covering.
- Standard operating procedures have been adapted to ensure that no deliveries leave the abattoir after 15:30 so that it can be received and covered before the end of the shift on the farm.
- Blood is brought daily to the application site, in comparison with previously when the tanker was filled before delivery to the application site. The blood is also top up with water at the abattoir that has reduced the smell considerably.
- The manager stays on the farm, approximately 120 meters from the application site and monitors the odours on a daily basis.
- The nearest residential uses within prevailing wind direction are 2km away and will not be adversely affected.
- Three or more official inspections were conducted over the past months by officials from various authorities and none of them have complained about any offensive smells, even though this was one of the aspects they were inspected specifically.

**Other noise impacts on site:**

A compost turner, front loader and tractor on site will contribute to noise, but are all agricultural related implements that are associated with buffer areas.

**Note**: Include impacts that the surrounding environment will have on the proposed development.

## 8. OTHER

**Employment / Security:**

- The application site have two controlled access gates and no unauthorized persons are allowed on site. A site access register will be kept on site.
- Fencing around the facility ensures that no unwanted animals enter the site.

- Security lights will improve the security at the feedlot during the evenings.
- The facility will employ seven permanent workers (two at compost facility, four at feedlot and remaining farm and one Site/Farm manager) that will maintain and secure the facilities.

**Visual:**
The feedlot steel structure (see attached drawing) will be seen from Road R60, similar to the existing stores on Ptn 6 and the neighbouring farm.

The compost facility has an agricultural feel with no negative visual impacts.

**Possible water pollution:**
The soil study indicated that the high clay content of the site will prevent any nutrient contained leaching into the soil. The site also flows towards the required run off collection dams. The windrows are more than 235m from the side of the Middelstekloof River.

The implementation of the existing Standard Operating Procedures (SOPs) for the composting facility as well as the SOPs of the feedlot will mitigate the impacts effectively. These will be monitored regularly. Problems experienced / complaints received will be recorded in a complaints register and addressed when required.

# SECTION G: IMPACT ASSESSMENT, IMPACT AVOIDANCE, MANAGEMENT, MITIGATION AND MONITORING MEASURES

## 1. METHODOLOGY USED IN DETERMINING AND RANKING ENVIRONMENTAL IMPACTS AND RISKS ASSOCIATED WITH THE ALTERNATIVES

(a) Describe the **methodology** used in determining and ranking the nature, significance consequences, extent, duration and probability of potential environmental impacts and risks associated with the proposed development and alternatives.

The assessment criteria were developed based on the Department of Environmental Affair's Integrated Environmental Management Series guideline documents.

| **Criteria** | **Description** | | |
|---|---|---|---|
| **Nature** | a description of what causes the effect, what will be affected, and how it will be affected. | | |
| | **Type** | **Score** | **Description** |
| **Extent (E)** | None (No) | 1 | Footprint |
| | Site (S) | 2 | On site or within 100 m of the site |
| | Local (L) | 3 | Within a 20 km radius of the centre of the site |
| | Regional (R) | 4 | Beyond a 20 km radius of the site |
| | National (Na) | 5 | Crossing provincial boundaries or on a national / land wide scale |
| **Duration (D)** | Short term (S) | 1 | 0 – 1 years |
| | Short to medium (S-M) | 2 | 2 – 5 years |
| | Medium term (M) | 3 | 5 – 15 years |
| | Long term (L) | 4 | > 15 years |
| | Permanent(P) | 5 | Will not cease |
| **Magnitude (M)** | Small (S) | 0 | will have no effect on the environment |
| | Minor (Mi) | 2 | will not result in an impact on processes |
| | Low (L) | 4 | will cause a slight impact on processes |
| | Moderate (Mo) | 6 | processes continuing but in a modified way |
| | High (H) | 8 | processes are altered to the extent that they temporarily cease |
| | Very high (VH) | 10 | results in complete destruction of patterns and permanent cessation of processes. |
| **Probability (P)** the likelihood of the impact actually occurring. Probability is estimated on a scale, and a score assigned | Very improbable (VP) | 1 | probably will not happen |
| | Improbable (I) | 2 | some possibility, but low likelihood |
| | Probable (P) | 3 | distinct possibility |
| | Highly probable (HP) | 4 | most likely |
| | Definite (D) | 5 | impact will occur regardless of any prevention measures |
| **Significance (S)** | Determined through a synthesis of the characteristics described above:<br>**S = (E+D+M) x P**<br>Significance can be assessed as low, medium or high | | |
| **Low: < 30 points:** | The impact would not have a direct influence on the decision to develop in the area | | |
| **Medium: 30 – 60 points:** | The impact could influence the decision to develop in the area unless it is effectively mitigated | | |
| **High: < 60 points:** | The impact must have an influence on the decision process to develop in the area | | |
| **No significance** | When no impact will occur or the impact will not affect the environment | | |

| Status | Positive (+) | | Negative (-) |
|---|---|---|---|
| **The degree to which the impact can be reversed** | Completely reversible (R) | 90-100% | The impact can be mostly to completely reversed with the implementation of the correct mitigation and rehabilitation measures. |
| | Partly reversible (PR) | 6-89% | The impact can be partly reversed providing that mitigation measures as stipulated in the EMP are implemented and rehabilitation measures are undertaken |
| | Irreversible (IR) | 0-5% | The impact cannot be reversed, regardless of the mitigation or rehabilitation measures taking place |
| **The degree to which the impact may cause irreplaceable loss of resources** | Resource will not be lost (R) | 1 | The resource will not be lost or destroyed provided that mitigation and rehabilitation measures as stipulated in the EMP are implemented |
| | Resource may be partly destroyed (PR) | 2 | Partial loss or destruction of the resources will occur even though all management and mitigation measures as stipulated in the EMP are implemented |
| | Resource cannot be replaced (IR) | 3 | The resource cannot be replaced no matter which management or mitigation measures are implemented. |
| **The degree to which the impact can be mitigated** | Completely mitigatable (CM) | 1 | The impact can be completely mitigated providing that all management and mitigation measures as stipulated in the EMP are implemented |
| | Partly mitigatable (PM) | 2 | The impact cannot be completely mitigated even though all management and mitigation measures as stipulated in the EMP are implemented. Implementation of these measures will provide a measure of mitigatibility |
| | Un-mitigatable (UM) | 3 | The impact cannot be mitigated no matter which management or mitigation measures are implemented. |

(b) Please describe any gaps in knowledge.

EAP is only knowledgeable with regards to the environmental and ecosystems aspects.

(c) Please describe the underlying assumptions.

In undertaking the investigation and compiling this report, the following has been assumed:

- The information provided by the Client/Applicant is accurate and unbiased;
- The scope of this investigation is to assess the direct and cumulative environmental impacts associated with the development; and
- Should the proposed project be authorised, the applicant will incorporate the recommendations and mitigation measures outlined in this BAR, the EMPr and the EA into the detailed design and construction contract specifications and operational management system for the proposed project.

(d) Please describe the uncertainties.

None at this stage.

(e) Describe adequacy of the assessment methods used.

Based on the EAP's assessment information was provided to address the concerns and assess the impacts of the proposed development on the environment.

Information as provided by the project planner (UMIZA), Specialists and as collected by the EAP during site surveys etc. has been used by the planning team to inform the current development proposals.

## 2. IDENTIFICATION, ASSESSMENT AND RANKING OF IMPACTS TO REACH THE PROPOSED ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE WITHIN THE SITE

**Note**: In this section the focus is on the identified issues, impacts and risks that influenced the identification of the alternatives. This includes how aspects of the receiving environment have influenced the selection.

(a) List the identified impacts and risks for each alternative.

| | |
|---|---|
| Alternative LA1: PREFERRED ALTERNATIVE | **DEVELOPMENT PHASE- ALTERNATIVE LA1 - PREFERRED**<br>• Construction activities can affect the underlying geological layers on site to some extent (Medium significance before and after mitigation)<br>• Impact of construction activities on surface and underground water pollution |

| | |
|---|---|
| | (Medium significance before mitigation low significance after mitigation)<br>• Compaction of soil (Medium significance before and after mitigation)<br>• Increase in storm water / waste water run-off (Low significance before and after mitigation)<br>• Impact on sensitive environments (rivers, wetlands etc) (Low significance before and after mitigation)<br>• Increased jobs (Low significance before and after mitigation)<br>• Traffic Impacts (Low significance before and after mitigation)<br>• Noise due to construction machinery (Low significance before and after mitigation)<br>• The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)<br>• Visual impact of construction (Low significance before and after mitigation)<br><br>**OPERATIONAL PHASE- ALTERNATIVE LA1 - PREFERRED**<br>• Maintenance activities can affect the underlying geological layers on site to some extent (Low significance before and after mitigation)<br>• Impact of maintenance activities on surface and underground water pollution (High significance before mitigation low significance after mitigation)<br>• Emissions and impact on air quality (Medium significance before mitigation low significance after mitigation)<br>• Compaction of soil (Medium significance before and after mitigation)<br>• Increase in storm water / waste water run-off (Low significance before and after mitigation)<br>• Impact on Fauna (Low significance before and after mitigation)<br>• Impact on sensitive environments (rivers, wetlands etc ) (Medium significance before mitigation low significance after mitigation)<br>• Increased jobs (Low significance before and after mitigation)<br>• Traffic Impacts (Low significance before and after mitigation)<br>• Noise due to construction machinery (Low significance before and after mitigation)<br>• Flies (Medium significance before mitigation low significance after mitigation)<br>• Odours (Medium significance before mitigation low significance after mitigation)<br>• The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)<br>• Visual impact (Medium-high significance before mitigation low significance after mitigation)<br><br>**DECOMMISSIONING AND CLOSURE PHASE- ALTERNATIVE LA1 - PREFERRED**<br>• Decommissioning activities can affect the underlying geological layers on site to some extent (Low significance before and after mitigation)<br>• Impact of construction activities on surface and underground water pollution (High significance before mitigation low significance after mitigation)<br>• Compaction of soil (Low significance before and after mitigation)<br>• Impact on sensitive environments (rivers, wetlands etc) (Low significance before and after mitigation)<br>• Traffic Impacts (Low significance before and after mitigation)<br>• Noise due to construction machinery (Low significance before and after mitigation)<br>• The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)<br>• Visual impact of decommissioning (Low significance before and after |

| | |
|---|---|
| | mitigation) |
| Alternative LA2: | **DEVELOPMENT PHASE- ALTERNATIVE LA2**<br>• Construction activities can affect the underlying geological layers on site to some extent (Medium significance before and after mitigation)<br>• Impact of construction activities on surface and underground water pollution (Medium significance before mitigation low significance after mitigation)<br>• Compaction of soil (Medium significance before and after mitigation)<br>• Increase in storm water / waste water run-off (Medium significance before and after mitigation)<br>• Impact on sensitive environments (rivers, wetlands etc) (Low significance before and after mitigation)<br>• Increased jobs (Low significance before and after mitigation)<br>• Traffic Impacts (Low significance before and after mitigation)<br>• Noise due to construction machinery (Low significance before and after mitigation)<br>• The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)<br>• Visual impact of construction (Low significance before and after mitigation)<br><br>**OPERATIONAL PHASE- ALTERNATIVE LA2**<br>• Maintenance activities can affect the underlying geological layers on site to some extent (Low significance before and after mitigation)<br>• Impact of maintenance activities on surface and underground water pollution (High significance before mitigation low significance after mitigation)<br>• Emissions and impact on air quality (Medium significance before mitigation low significance after mitigation)<br>• Compaction of soil (Medium significance before and after mitigation)<br>• Increase in storm water / waste water run-off (Medium significance before and after mitigation)<br>• Impact on Fauna (Low significance before and after mitigation)<br>• Impact on sensitive environments (rivers, wetlands etc ) (Medium significance before mitigation low significance after mitigation)<br>• Increased jobs (Low significance before and after mitigation)<br>• Traffic Impacts (Low significance before and after mitigation)<br>• Noise due to construction machinery (Low significance before and after mitigation)<br>• Flies (Medium significance before mitigation low significance after mitigation)<br>• Odours (Medium significance before mitigation low significance after mitigation)<br>• The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)<br>• Visual impact (Medium-high significance before mitigation low significance after mitigation)<br><br>**DECOMMISSIONING AND CLOSURE PHASE- ALTERNATIVE LA2**<br>• Decommissioning activities can affect the underlying geological layers on site to some extent (Low significance before and after mitigation)<br>• Impact of construction activities on surface and underground water pollution (High significance before mitigation low significance after mitigation)<br>• Compaction of soil (Low significance before and after mitigation)<br>• Impact on sensitive environments (rivers, wetlands etc) (Low significance before and after mitigation) |

| | |
|---|---|
| | • Traffic Impacts (Low significance before and after mitigation)<br>• Noise due to construction machinery (Low significance before and after mitigation)<br>• The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)<br>• Visual impact of decommissioning (Low significance before and after mitigation) |
| No-go Alternative: | The No-Go option will result in the site remaining as is presently. |

(b) Describe the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed; may cause irreplaceable loss of resources; and can be avoided, managed or mitigated.

The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. (The EAP has to select the relevant impacts identified in blue in the table below for each alternative and repeat the table for each impact and risk).

**Note**: The EAP may decide to include this section as Appendix J to the BAR.

**SEE IMPACT TABLES INCLUDED AS APPENDIX J**

(c) Provide a summary of the site selection matrix.

**Layout Alternative 2 [LA2]:**

Although proposed layout LA2 has taken into account the natural landscape, sensitive environments and topography of the site which has highlighted a number of constraints that would determine and influence the layout of the proposed development.


The proposed layout LA2 is NOT preferred for the following reason:

- The application area has a larger impact on the receiving environment, which would create a larger potential impact on the surrounding sensitive environments.

(d) Outcome of the site selection matrix.

**Layout Alternative 1 [LA1]: (PREFERRED)**

According to information received from the Municipality, and according to the Provincial Rural Guidelines of May 2009, the application site falls within different Spatial Planning Categories:


- Green: Core 1 area: Critical biodiversity areas / no-go area to the north of the application site (Middelstekloof River)
- Dark purple: Buffer 1 area: Remnants of natural or near natural vegetation: Extensive agriculture
- Light purple: Buffer 2 Areas: Other natural areas, i.e. livestock production as dominant land use: Activities and uses directly to the primary agricultural enterprise, additional land uses to facilitate diversification and value adding e.g. local product processing, space extensive requirements such as nuisance and buffer requirements such as solid waste disposal sites, feedlots etc.
- Brown: Transformed area / Yellow: Cadastral boundaries (not correct)

The whole application site is already transformed and disturbed and is not consistent with the above.

According to the above guidelines, the compost plant is desirable in this location. Although the feedlot will be located in the area earmarked for "extensive agriculture", it is already disturbed land further than 32m away from the side of the water course and situated between the kraal and compost plant that are all interdependent.

The alignment of the ESKOM line across this area prohibits the feedlot to be located closer to the compost plant.

The proposed layout and storm water run-off plan is the favourable for the following reasons:

- Two entrances with gates, one to the existing composting facility and one to the proposed feedlot and remainder of the farm;
- The most southern access road will be used by the honey suckers (blood trucks) (two-way); the skip trucks with by-products and condemned carcasses will use the road to the western side of the windrows (two-way).
- The last mentioned road will also be used by trucks off-loading wood chips from the Municipality (already chipped) in the north-eastern corner of the application site, as well as the end product (compost) from the windrows to the storing area on the lowest level, near the gate, for easy distribution. The compost will be put in bags to be sold to farmers or be sold in bulk. Because of the high clay content (25%), no hardened surfaces for the storing of the raw or the end products are necessary.
- The internal roads on the Site Plan were created informally over time by moving around on the application site. This may change when the feedlot is in operation and the best practices /

logistics between the two interdependent facilities are established.

- Several windrows and bulk pile/s (for whole carcasses) of approximate 1,5m high and 2m wide alongside the south-eastern boundary of the farm and 235m away from the Middelstekloof River; These windrows will rotate/move in the 3,6 ha area allocated as and when the compost is ready and removed.
- Two dams were constructed at the lowest point on the terrain. The north-eastern dam is constructed to catch run-off storm water emanating from the lands and area above the dam, whilst the south-western, smaller dam is for the effluent from the windrows and feedlot. Run off water (only in rainy seasons) from the windrows will be caught by the cut-off weir/barrier on the western side of the windrows from where it will flow with gravity in a channel to the lowest dam. Compacted drainage channels around the feedlot will direct run off water also to the lowest dam. [There is no need for a plastic or concrete lining of the drainage canal according to the soil study.] This water will be re-used when required to wet the windrows on top of the rows.
- After 9 months of operation, very little, if any, run off water was visible in the larger, clean dam. There was some collection of rain water into both the clean and "dirty" dam. No running of water from the compost site to the lower dam was visible at any time. The windrows themselves form an effective barrier for run-off water.
- A 10 meter deep bore hole will be drilled between the catchment dam and the fence of the property to allow quarterly sampling of the ground water if there is any present.
- The whole area including the existing compost facility and the proposed feedlot with dams and area in between is 8.6ha in extent. This whole area will be used due to the interdependence of the two land uses.

Taking all of the above impacting factors into account the proposed layout is the only reasonable and feasible alternative available that would maximise the potential of the property as well as meet the size requirements for each of the proposed activities.

## 3. SPECIALIST INPUTS/STUDIES, FINDINGS AND RECOMMENDATIONS

**Note:** Specialist inputs/studies must be attached to this report as **Appendix G** and must comply with the content requirements set out in Appendix 6 of the EIA Regulations, 2014 (as amended). Also take into account the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "*One Environmental Management System*" and the EIA Regulations, 2014, any subsequent Circulars, and guidelines available on the Department's website (**http://www.westerncape.gov.za/eadp**).

Provide a summary of the findings and impact management measures identified in any specialist report and an indication of how these findings and recommendations have been included in the BAR.

**Freshwater Ecological Impact Assessment - *Eco Impact Legal Consulting, 15 February 2018***

**the findings as well as the conclusions and recommendations in the freshwater ecological assessment have been incorporated in the relevant sections in the BAR as well as in the EMPr to mitigate potential negative impacts on the freshwater environments associated with the development.*

**Conclusion and Recommendations:**

Following this definition and the standard wetland delineation protocols, no wetlands were identified on or adjacent to the proposed feedlot and compost sites. However, a non-perennial river is situated on the northern edge of the proposed impacted area.

The study area for the proposed development is thus somewhat atypical of the Ecoregion within which it falls, being located in a relatively non-mountainous part of the landscape. The rainfall seasonality and the vegetation types that occur within the Southern Folded Mountains Ecoregion are highly variable. The potentially affected river reach is characterised by a fairly incised single channel, approximately 10 to 20m wide, which has a bed comprising mostly cobbles and sand. *Vachellia karoo* is common and the dominant species in the river channel and valleys.

On the northern bank of the river, adjacent to the main channel of the potentially affected reach of the river, there is a floodplain area of approximately 30m in width. This floodplain area is dominated by *Galenia africana*. From the relatively dense growth of shrubs within the floodplain, it is evident that the floodplain does not get inundated nearly as frequently as it would have under natural

conditions. The *Galenia africana* is also an indicator species of heavy impact and disturbance most likely as a result of animal grazing and trampling.

On the southern bank of the affected river reach, the river is characterised by a steep bank and an elevated area that creates a berm which will result in the water that is flowing in the river being confined to the channel and if it floods the water will overflow towards the north into the flood plain. All storm and rain water from the impacted areas flow away from the river as a result of this elevated area. No indigenous vegetation exists between the river bank and the feedlot and compost facility.

The overall results were that the relevant reach of the river is in a poor ecological condition, with a PES Category of D ("largely modified") for both the instream and riparian components of the river systems.

In terms of its EIS, the potentially affected reach of the river was rated to be of low/marginal EIS for biotic criteria, but with a low level of confidence due to the absence of biotic data, and of moderate EIS for habitat criteria. The overall EIS rating for the potentially affected reach of the river was that this system is of low-to-moderate ecological importance and sensitivity. Despite the low-to-moderate EIS of the river, it is important to bear in mind that this river forms an important ecological corridor and is a major tributary of the Vink River, which is ecologically important to the Breede River. In addition, the floodplain along the river has been recognised as an Aquatic CBA in the WCBPF and the C.A.P.E. Fine Scale Planning initiative for the Upper Breede Valley. This elevates the conservation importance of the river corridor and implies that it should be protected from any further degradation.

Pollution of the river system due to the possible risk of contaminated storm water from the feedlot and compost facilities entering the river systems generally result in significant impacts and degradation of the freshwater ecological system and functioning.

In the light of the results generated through the application of the WRC Buffer Tool (Macfarlane *et al*. 2014) to the drainage line within the proposed impacted area, the retention of a buffer area of at least 32m in width along the sides of the drainage line is considered to be adequate if the above-mentioned mitigation measures for reducing risk as a result of the operational phase are implemented.

**Soil Study - *AVS, 2015***

**the findings as well as the conclusions and recommendations in soil study have been incorporated in the relevant sections in the BAR as well as in the EMPr to mitigate potential negative impacts on associated with the development.*

**Recommendations - Soil and drainage:**

The soil classification and analyses show that the area is not suited for intensive agriculture. Even farming with extensive crops e.g. pastures is unlikely to be successful. The main reason for this is the high salt content of the soils, and the inability to leach the salts from the profile.

Leaching/reclamation of soils can only be done if enough water is available and when there is good drainage, so that the leached salts can be removed from the profile.

The rainfall is low (277 mm/yr) and no water for irrigation is available. Furthermore will the high clay content prevent salts from leaching out of the profile.

Leaching of salts from a profile must be a controlled exercise, to prevent the contamination of the groundwater and of lower lying soils in the landscape.

Compaction of the topsoil as required for the proposed activities would further reduce the likelihood of salts leaching from the profile to contaminate the groundwater.

The run-off from the terrain must be managed and collected in order to prevent possible pollution of lower lying areas.

The compaction will also prevent the nutrients and salts from the manure and urine to penetrate the soil and contaminate the groundwater.

The run-off can be collected in a dam to be constructed at the lowest point on the terrain. From here the water can be recycled and used to wet the composting heaps.

## 4. ENVIRONMENTAL IMPACT STATEMENT

Provide an environmental impact statement of the following:

(i) A summary of the key findings of the EIA.

Positive:

- Employment opportunities (construction and operational)

Negative:

- Disturbance to subsurface geological layers
- Surface and ground water pollution
- Compaction of soil
- Increase in storm water / waste water run-off
- Human/Wildlife interactions
- Emissions and air quality
- Impact on sensitive environments (rivers, wetlands etc)
- Increase in traffic
- Impact on planning policies
- Noise
- flies
- Odours
- Impact of the proposed development on archaeological, paleontological and heritage remains
- Visual/sense of place

The No-Go option will result in the site remaining as is presently.

| | | |
|---|---|---|
| (ii) Has a map of appropriate scale been provided, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers? | YES | ~~NO~~ |

(iii) A summary of the positive and negative impacts that the proposed development and alternatives will cause in the environment and community.

**ALTERNATIVE LA1 - PREFERRED**

**DEVELOPMENT PHASE- ALTERNATIVE LA1 - PREFERRED**

- Construction activities can affect the underlying geological layers on site to some extent (Medium significance before and after mitigation)
- Impact of construction activities on surface and underground water pollution (Medium significance before mitigation low significance after mitigation)
- Compaction of soil (Medium significance before and after mitigation)
- Increase in storm water / waste water run-off (Low significance before and after mitigation)
- Impact on sensitive environments (rivers, wetlands etc) (Low significance before and after mitigation)
- Increased jobs (Low significance before and after mitigation)
- Traffic Impacts (Low significance before and after mitigation)
- Noise due to construction machinery (Low significance before and after mitigation)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)
- Visual impact of construction (Low significance before and after mitigation)

**OPERATIONAL PHASE- ALTERNATIVE LA1 - PREFERRED**

- Maintenance activities can affect the underlying geological layers on site to some extent (Low significance before and after mitigation)
- Impact of maintenance activities on surface and underground water pollution (High significance before mitigation low significance after mitigation)
- Emissions and impact on air quality (Medium significance before mitigation low significance after mitigation)

- Compaction of soil (Medium significance before and after mitigation)
- Increase in storm water / waste water run-off (Low significance before and after mitigation)
- Impact on Fauna (Low significance before and after mitigation)
- Impact on sensitive environments (rivers, wetlands etc ) (Medium significance before mitigation low significance after mitigation)
- Increased jobs (Low significance before and after mitigation)
- Traffic Impacts (Low significance before and after mitigation)
- Noise due to construction machinery (Low significance before and after mitigation)
- Flies (Medium significance before mitigation low significance after mitigation)
- Odours (Medium significance before mitigation low significance after mitigation)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)
- Visual impact (Medium-high significance before mitigation low significance after mitigation)

**DECOMMISSIONING AND CLOSURE PHASE- ALTERNATIVE LA1 - PREFERRED**

- Decommissioning activities can affect the underlying geological layers on site to some extent (Low significance before and after mitigation)
- Impact of construction activities on surface and underground water pollution (High significance before mitigation low significance after mitigation)
- Compaction of soil (Low significance before and after mitigation)
- Impact on sensitive environments (rivers, wetlands etc) (Low significance before and after mitigation)
- Traffic Impacts (Low significance before and after mitigation)
- Noise due to construction machinery (Low significance before and after mitigation)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)
- Visual impact of decommissioning (Low significance before and after mitigation)

**ALTERNATIVE LA2**

**DEVELOPMENT PHASE- ALTERNATIVE LA2**

- Construction activities can affect the underlying geological layers on site to some extent (Medium significance before and after mitigation)
- Impact of construction activities on surface and underground water pollution (Medium significance before mitigation low significance after mitigation)
- Compaction of soil (Medium significance before and after mitigation)
- Increase in storm water / waste water run-off (Medium significance before and after mitigation)
- Impact on sensitive environments (rivers, wetlands etc) (Low significance before and after mitigation)
- Increased jobs (Low significance before and after mitigation)
- Traffic Impacts (Low significance before and after mitigation)
- Noise due to construction machinery (Low significance before and after mitigation)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)
- Visual impact of construction (Low significance before and after mitigation)

**OPERATIONAL PHASE- ALTERNATIVE LA2**

- Maintenance activities can affect the underlying geological layers on site to some extent (Low significance before and after mitigation)
- Impact of maintenance activities on surface and underground water pollution (High significance before mitigation low significance after mitigation)
- Emissions and impact on air quality (Medium significance before mitigation low significance after mitigation)
- Compaction of soil (Medium significance before and after mitigation)
- Increase in storm water / waste water run-off (Medium significance before and after mitigation)
- Impact on Fauna (Low significance before and after mitigation)
- Impact on sensitive environments (rivers, wetlands etc ) (Medium significance before mitigation low significance after mitigation)

- Increased jobs (Low significance before and after mitigation)
- Traffic Impacts (Low significance before and after mitigation)
- Noise due to construction machinery (Low significance before and after mitigation)
- Flies (Medium significance before mitigation low significance after mitigation)
- Odours (Medium significance before mitigation low significance after mitigation)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)
- Visual impact (Medium-high significance before mitigation low significance after mitigation)

**DECOMMISSIONING AND CLOSURE PHASE- ALTERNATIVE LA2**

- Decommissioning activities can affect the underlying geological layers on site to some extent (Low significance before and after mitigation)
- Impact of construction activities on surface and underground water pollution (High significance before mitigation low significance after mitigation)
- Compaction of soil (Low significance before and after mitigation)
- Impact on sensitive environments (rivers, wetlands etc) (Low significance before and after mitigation)
- Traffic Impacts (Low significance before and after mitigation)
- Noise due to construction machinery (Low significance before and after mitigation)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (Low significance before and after mitigation)
- Visual impact of decommissioning (Low significance before and after mitigation)

## 5. IMPACT MANAGEMENT, MITIGATION AND MONITORING MEASURES

(a) Based on the assessment, describe the impact management, mitigation and monitoring measures as well as the impact management objectives and impact management outcomes included in the EMPr. The EMPr must be attached to this report as Appendix H.

The key mitigation measure is impact avoidance. Where adverse impacts cannot reasonably be prevented, construction should be managed through the effective implementation of the Construction EMP with a strong emphasis on post-construction rehabilitation. Please refer to the EMP for more details on the mitigation and management measures.

The implementation of the existing Standard Operating Procedures (SOPs) for the composting facility as well as the SOPs of the feedlot will mitigate the impacts effectively. These will be monitored regularly. Problems experienced / complaints received will be recorded in a complaints register and addressed when required.
*See Appendix H - EMP for details

(b) Describe any provisions for the adherence to requirements that are prescribed in a Specific Environmental Management Act relevant to the listed activity or specified activity in question.

Also note that the following activities trigger water uses in terms of the National Water Act, 1998 (Act 36 of 1998):

1. Section 21.C. impeding or diverting the flow of water in a watercourse;
2. Section 21.I. altering the bed, banks, course or characteristics of a watercourse;
3. Section 21.G. disposing of waste in a manner which may detrimentally impact on a water resource.

(c) Describe the ability of the applicant to implement the management, mitigation and monitoring measures.

The applicant is ultimately responsible for the implementation of the EMP and the financial cost of all environmental control measures. In accordance with the requirements of the EMP, the applicant must ensure that any person acting on their behalf complies with the conditions / specifications contained in this EMP. In addition, an Environmental Control Officer would be appointed as the on-site implementing agent and would have the responsibility to ensure that their responsibilities are executed in compliance with the EMP. Thus, the applicant has the ability to implement the

recommended management, mitigation, and monitoring measures, as appropriate.

(d) Provide the details of any financial provisions for the management of negative environmental impacts, rehabilitation and closure of the proposed development.

Not applicable.

(e) Provide the details of any financial provisions for the management of negative environmental impacts, rehabilitation and closure of the proposed development.

Not applicable.

(f) Describe any assumptions, uncertainties, and gaps in knowledge which relate to the impact management, mitigation and monitoring measures proposed.

EAP is only knowledgeable with regards to the environmental impacts, biodiversity and ecosystems aspects.

GAPs include scientific consensus on emissions and odours emitted.

In undertaking the investigation and compiling this report, the following has been assumed:

- The information provided by the client is accurate and unbiased;
- The scope of this investigation is to assess the direct and cumulative environmental impacts associated with the development; and
- Should the proposed project be authorised, the applicant will incorporate the recommendations and mitigation measures outlined in this BAR, the EMP and the EA into the detailed design and construction contract specifications and operational management system for the proposed project.

## SECTION H: RECOMMENDATIONS OF THE EAP AND SPECIALISTS

| | | |
|---|---|---|
| (a) In my view as the appointed EAP, the information contained in this BAR and the documentation attached hereto is sufficient to make a decision in respect of the listed activity(ies) applied for. | YES | ~~NO~~ |

| | | |
|---|---|---|
| (b) If the documentation attached hereto is sufficient to make a decision, please indicate below whether, in your opinion, the listed activity(ies) should or should not be authorised: | | |
| Listed activity(ies) should be authorised: | YES | ~~NO~~ |
| Provide reasons for your opinion | | |
| All possible impacts on the environment have been assessed and can be mitigated and managed. The assessment did not lead to any fatal flaws if the development is approved, provided that the facility is operated in terms of all relevant applicable legislation and the EMPr management activities implemented. | | |
| (c) Provide a description of any aspects that were conditional to the findings of the assessment by the EAP and Specialists which are to be included as conditions of authorisation. | | |
| • The relevant water use licences must be obtained from the department of water and sanitation.<br>• The monitoring and management requirements that will be captured in the Water Use Authorization issued by the Department of Water and Sanitation to protect water resource.<br>• All zoning and consent use applications to be obtained from Langeberg Municipality, and the conditions set out therein in terms of the land use change application must be adhered to.<br>• A Waste Management Licence as applied for must be obtained in conjunction with the issuing of the EA | | |
| (d) If you are of the opinion that the activity should be authorised, please provide any conditions, including mitigation measures that should in your view be considered for inclusion in an environmental authorisation. | | |
| Recommended that the EA prescribe that:<br>• Should any heritage artefacts be exposed during construction that all activities be stopped, and Heritage Western Cape contacted before any further action being permitted.<br>• The project implementation process should be subject to standard Environmental Management Programme prescripts and conditions under supervision of a competent and diligent ECO, during its construction and decommissioning phases. That the facility be audited on yearly bases by an external environmental auditor during operations.<br>• The relevant water use licences must be obtained from the department of water and sanitation.<br>• The relevant Waste Management Licence as applied for in conjunction with the EA application must be obtained. | | |
| (e) Please indicate the recommended periods in terms of the following periods that should be specified in the environmental authorisation: | | |

| | | |
|---|---|---|
| i. | the period within which commencement must occur; | 5 years |
| ii. | the period for which the environmental authorisation is granted and the date on which the development proposal will have been concluded, where the environmental authorisation does not include operational aspects; | 10 years |
| iii. | the period for which the portion of the environmental authorisation that deals with non-operational aspects is granted; and | 10 years |
| iv. | The period for which the portion of the environmental authorisation that deals with operational aspects is granted. | Unlimited |

## SECTION I: APPENDICES

The following appendices must be attached to this report:

| APPENDIX | | | Confirm that Appendix is attached |
|---|---|---|---|
| **Appendix A:** | **Locality map** | | X |
| **Appendix B:** | **Site development plan(s)** | | X |
| | **A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;** | | X |
| **Appendix C:** | **Photographs** | | X |
| **Appendix D:** | **Biodiversity overlay map** | | X |
| **Appendix E:** | **Permit(s) / license(s) from any other Organ of State, including service letters from the municipality.** | | X |
| | **Appendix E1:** | | X |
| **Appendix F:** | **Public participation information: including a copy of the register of I&APs, the comments and responses report, proof of notices, advertisements and any other public participation information as is required in Section C above.** | | X |
| **Appendix G:** | **Specialist Report(s)** | | X |
| **Appendix H :** | **EMPr** | | X |
| **Appendix I:** | **Additional information related to listed waste management activities (if applicable)** | | X |
| **Appendix J:** | **If applicable, description of the impact assessment process followed to reach the proposed preferred alternative within the site.** | | X |
| **Appendix K:** | **Any Other (if applicable).** | | X |

## ORIGINAL DECLARATIONS TO BE PROVIDED WITH THE SUBMISSION OF THE FINAL BASIC ASSESSMENT REPORT.