

**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**

**PROJECT TITLE**

<b>EXPANSION AND WASTE LICENSE APPLICATION FOR THE GROENFONTEIN KLAPMUTS COMPOST FACILITY ON REMAINDER FARMS GROENFONTEIN ANNEX 716 PORTION 54 AND PORTION 56, PAARL</b>
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**February 2019**

<b>REPORT TYPE CATEGORY</b>	<b>REPORT REFERENCE NUMBER</b>	<b>DATE OF REPORT</b>
Pre-Application Basic Assessment Report (if applicable) <sup>1</sup>	WL0091/17/PRE-BAR	25 May 2018
Draft Basic Assessment Report <sup>2</sup>	WL0008/19/DBAR	25 February 2019
Final Basic Assessment Report <sup>3</sup> or, if applicable Revised Basic Assessment Report <sup>4</sup> <del>(what is not applicable)</del>	WL0008/19/REVISED DBAR	04 June 2019

**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/B4/23/1354/17
File reference number (EIA):	16/3/3/1/B4/23/1005/19
NEAS reference number (EIA):	
File reference number (Waste):	19/2/5/7/B4/23/WL0091/17
NEAS reference number (Waste):	19/2/5/3/B4/23/WL0008/19
File reference number (Air Quality):	
NEAS reference number (Air Quality):	
File reference number (Other):	
NEAS reference number (Other):	

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

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## 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

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

	Definition	Reference
Animal Manure	A by-product of animal excreta which is biodegradable in nature and could further be used for fertilisation purposes.	<b>National Environmental Management: Waste Act (Act No. 59 of 2008) : GN 718 19(1)</b>
Compost	A stabilised, homogenous, fully decomposed substance of animal or plant origin to which no plant nutrients have been added and that is free of substances or elements that could be harmful to man, animal, plant or the environment.	<b>Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act (Act No. 36 of 1947): GNR 732 of 10 September 2012 -Regulations Regarding Fertilizers</b>
Compostable Organic Waste	A carbon-based material of animal or plant origin (that is defined as waste in terms of the South African gazetted National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008:)) that naturally enhances fertility of soil through a natural degradation process but excludes human made organic chemicals and naturally occurring organic chemicals	<b>National Organic Waste Composting Strategy, 2013</b>

	<p>which have been refined or concentrated by human activity.</p> <p>"Organic Waste" will generally comprise materials that can be accepted for disposal at a licensed municipal general waste landfill facility (i.e. excludes infectious, poisonous, health-care and hazardous organic wastes)".</p>	
Garden Waste	<p>NOTE: The NEM: Waste Act does not list a definition for "Garden Waste". For the purposes of this report, "garden waste" is meant as organic biodegradable waste material generated from the likes of a typical garden.</p> <p>Reference to "Green Waste" in this report typically refers to "Garden Waste".</p>	<b>None</b>
Organic Waste*	<p>"Organic Waste" is categorised as, "garden waste, food waste and wood waste."</p> <p>PLEASE NOTE: For the purposes of this project, waste of biological origin which can be broken down, in a reasonable amount of time, into its base compounds by micro-organisms and other living things and/or by other forms of treatment, regardless of what those compounds may be, have also been considered as "organic waste" and are referenced in this study.</p>	<b>National Environmental Management: Waste Act (Act No. 59 of 2008): GNR 625 - National Waste Information Regulations</b>

## DETAILS OF THE APPLICANT

Applicant / Organisation / Organ of State:	Boland Organic Supplies (Pty) Ltd		
Contact person:	Mr. SP Visser		
Postal address:	PO Box 272, Moorreesburg		
Telephone:	021 971 1404	Postal Code:	7310
Cellular:	082 553 3240	Fax:	022 433 1440
E-mail:	<a href="mailto:pietervisser@tiptrans.co.za">pietervisser@tiptrans.co.za</a>		

## 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 Can.Sci.Nat (Biological Sciences) 100126/12		
Contact Person (if not author):	Lauren Abrahams		
Postal address:	PO Box 45707, Claremont		
Telephone:	021 671 1660	Postal Code:	7735
Cellular:	0662109892	Fax:	021 671 9976
E-mail:	<a href="mailto:admin@ecoimpact.co.za">admin@ecoimpact.co.za</a>		
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.

**\*Curriculum Vitae of EAP included in Appendix K1.**

## EXECUTIVE SUMMARY OF THE BASIC ASSESSMENT REPORT:

The proposed development is for the expansion of an existing composting facility located on Farm Groenfontein Annex 716 Portion 56.

The existing facility is operating under an existing Environmental Authorisation please refer to Appendix K4 for a copy of the Authorisation. The facility is currently operating in terms of the following:

- Current extent of the composting area (in hectares or m<sup>2</sup>):  
±1.36ha currently being used
- Tonnage of compost produced (per month / annum):  
Figures are based on sales for the period from Jan 2018 – Jan 2019:
  - Chicken manure: 1,267 m<sup>3</sup>/month
  - Compost: 538 m<sup>3</sup>/month
  - Waste Manure: 426 m<sup>3</sup>/month

The proposed activity is for the expansion and licensing of a compost facility to recycle and treat organic waste to produce compost on approximately 4.7ha.

### **Composting activity:**

Composting of organic waste is done using the turned windrow method. It is proposed to expand the existing footprint of the composting activity by 3ha; this would allow the facility to treat general and organic waste with a capacity in excess of 10 tons but less than 100 tons.

The facility will be expanded to accept mixed compostable organic waste for composting by turned windrow method. The facility intends to accept approximately 200m<sup>3</sup> of organic waste per day which would equate to 4000m<sup>3</sup> of compostable organic waste to be accepted per month.

Please take note that for the purpose of this report “**compostable organic waste**” is defined as: A carbon-based material of animal or plant origin (that is defined as waste in terms of the South African gazetted National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008:) that naturally enhances fertility of soil through a natural degradation process but excludes human made organic chemicals and naturally occurring organic chemicals which have been refined or concentrated by human activity.

“Organic Waste” will generally comprise materials that can be accepted for disposal at a licensed municipal general waste landfill facility (i.e. excludes infectious, poisonous, health-care and hazardous organic wastes)”.  
**National Organic Waste Composting Strategy, 2013.**

### **Stormwater management:**

#### **Current dams capacity:**

The existing two dams (located on Portions 54 and 56 respectively) have a combined storage capacity of ±6600m<sup>3</sup>.

#### **Proposed dam and capacity:**

It is envisaged that the existing dams will be reshaped, and the walls merged in order to create a single dam with a smaller footprint. This will provide more economical usage of the available land.

- The proposed dam with a 3m high wall will have a capacity of ±13 800m<sup>3</sup> including a spare capacity of ±15%.
- If the wall is raised to 3.5m the storage capacity will increase to ±15 600m<sup>3</sup> with a spare capacity of ±30%.

In order to limit the runoff to the dams a cut-off drain will be constructed on the southern boundary of Portion 56. Runoff from the adjacent property will then be intercepted and directed towards the watercourse described above. This will reduce the catchment area of stormwater crossing the properties to ±13ha.

**\*Refer to the Stormwater Management Plan in Appendix K2 for details.**

## **SUMMARY OF ALTERNATIVES**

**Location alternative:** The proposal is for the expansion of an existing composting facility (currently operating under the threshold requiring authorisation in terms of NEMA and NEMWA). As such no location alternative adjacent to the existing activity that is reasonable and or feasible exists.

**Activity alternative:** The proposal is for expansion of an existing compost facility currently operating under the thresholds in terms of NEMA and NEMWA requiring authorisation. As such no other reasonable or feasible activity alternative exists for the proposed activity.

**Layout alternative:** The layout for the composting facility follows the generic guide towards deciding on a suitable layout for the composting facility. The layout is highly dependent on the compost process adopted, land use area, volume of feedstock and topography, etc. The proposed layout of all the various operational areas of the composting facility such as the waste unloading and sorting, composting, maturing, sieving and bagging of the compost, including storage space for compost and recyclables has not been defined at this stage. However, the layout would be in line with the typical layout as included in the 3110: National Organic Waste Composting Strategy: Draft Guideline Document for Composting.

**Technology alternative:** Composting involves the aerobic (in the presence of oxygen) decomposition of organic matter and although carbon dioxide is also produced during this decomposition process, no methane is produced. Composting of organic material is therefore environmentally more beneficial than sending the waste to landfill. The preferred technology alternative for the **EXPANSION** is composting using the turned windrow method (Medium

Technology). The reasons as why this is the best practical and reasonable technology alternative are as follows:

- The facility would be considered to fall in the category: Medium Technology – the facility intends to accept mixed compostable organic waste including but not limited to primary sewage sludge, manure, and in some cases animal waste (carcasses, abattoir waste, etc).
- Low capital costs
- Low operational and maintenance costs
- Unskilled labour required (dependant on size of compost pile)
- Skilled labour required - dependant on size of the compost pile
- Windrow turning can be done manually (workforce) or by machine
- Produces fair to good product (based on inputs)

Based on the above investigation and summary **NONE** of the other technology alternatives would be reasonable and feasible in terms of this application. As such no alternative other than the preferred alternative and the no-go option will be assessed in Section F of this report.

**Operational alternative:** Operational activities relating to the management of a successful composting facility is guided by best practice techniques. This is largely driven through minimising the potential environmental and social impacts generated as a direct result of the facilities operations.

Poor environmental management of composting and related organics processing facilities can typically result in one or more of the following environmental problems:

- air quality impacts, namely odours and particulate matter,
- potential hazards, such as fire and explosions,
- water and soil pollution,
- the presence of vermin in excessive numbers,
- excessive levels of noise from equipment (such as shredders and traffic),
- wind-blown litter,
- nuisances arising from particulate matter from delivery trucks and earthmoving equipment, and
- production of contaminated organic products.

This is mitigated through the implementation of best practice techniques as well as through the applicable environmental legislation and authorisations that may be required for the operation of the facility. It is through these processes that operational controls to minimise the negative effects of the activities associated with the proposal.

The operational EMP in Appendix H will provide the management framework to mitigate negative impacts as a result of the activity.

**No-Go option:** The no-go option would result in the current composting activities to continue operating under the existing thresholds.

By not approving the proposed expansion would result in organic waste being sent to landfill. This is not in line with the Municipalities Integrated Waste Management Plan which encourages the diversion of waste from landfills through processes such as composting. The no-go option would not respond to the National stance as manifested in the National Waste Management Strategy (2011) nor the National Organic Waste Composting Strategy (2013). The National Waste Management Strategy promotes composting as one of the approaches towards achieving the objectives of the waste management hierarchy, amongst other measures. This National Organic Waste Composting Strategy (NOWCS) has been initiated by the Department of Environmental Affairs (DEA) with the aim to develop and promote the diversion of organic waste from landfill sites for soil beneficiation and other uses through composting.

## **SUMMARY OF IMPACTS**

### **Positive:**

- Expansion of an existing composting facility;
- Diversion of organic waste from landfill;



- Job creation;

**Negative:**

- Nuisance - noise, traffic, odours, tourism, pests
- Emissions - dust, bio-aerosols, odours, exhaust emissions
- Surface water pollution
- Ground water pollution
- Soil pollution
- Stormwater/waste water runoff
- Compaction of Soil

**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 EMP, MMP management activities implemented.

## SECTION A: PROJECT INFORMATION

### 1. ACTIVITY LOCATION

Location of all proposed sites:	Portions 54 & 56 of Farm Groenfontein No 716, Paarl are located $\pm$ 3.0km northwest of Klappmuts off Divisional Road 1104. (See Locality Map in Appendix A)
Farm / Erf name(s) and number(s) (including Portions thereof) for each proposed site:	Remainder Farms Groenfontein Annex 716 Portion 54; Portion 56, Paarl.
Property size(s) in m <sup>2</sup> for each proposed site:	Farm Groenfontein Annex 716/54 = 4.49ha Farm Groenfontein Annex 716/56 = 6.61ha
Development footprint size(s) in m <sup>2</sup> :	Approximately 4.7 ha
Surveyor General (SG) 21 digit code for each proposed site:	Farm Groenfontein Annex 716/54 = C05500000000071600054 Farm Groenfontein Annex 716/56 = C05500000000071600056

### 2. PROJECT DESCRIPTION

(a) Is the project a new development? If "NO", explain:

YES

NO

The proposed development is for the expansion of an existing composting facility located on Farm Groenfontein Annex 716 Portion 56.

The existing facility is operating under an existing Environmental Authorisation please refer to Appendix K4 for a copy of the Authorisation. The facility is currently operating in terms of the following:

- Current extent of the composting area (in hectares or m<sup>2</sup>):  
 $\pm$ 1.36ha currently being used
- Tonnage of compost produced (per month / annum):  
Figures are based on sales for the period from Jan 2018 – Jan 2019:
  - Chicken manure: 1,267 m<sup>3</sup>/month
  - Compost: 538 m<sup>3</sup>/month
  - Waste Manure: 426 m<sup>3</sup>/month

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

The proposed activity is for the expansion and licensing of a compost facility to recycle and treat organic waste to produce compost on approximately 4.7ha.

#### **Composting activity:**

Composting of organic waste is done using the turned windrow method. It is proposed to expand the existing footprint of the composting activity by 3ha; this would allow the facility to treat general and organic waste with a capacity in excess of 10 tons but less than 100 tons.

The facility will be expanded to accept mixed compostable organic waste for composting by turned windrow method. The facility intends to accept approximately 200m<sup>3</sup> of organic waste per day which would equate to 4000m<sup>3</sup> of compostable organic waste to be accepted per month.

Please take note that for the purpose of this report "**compostable organic waste**" is defined as: A carbon-based material of animal or plant origin (that is defined as waste in terms of the South African gazetted National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008:)) that naturally enhances fertility of soil through a natural degradation process but excludes human made organic chemicals and naturally occurring organic chemicals which have been refined or concentrated by human activity.

"Organic Waste" will generally comprise materials that can be accepted for disposal at a licensed municipal general waste landfill facility (i.e. excludes infectious, poisonous, health-care and

hazardous organic wastes)”.  
**National Organic Waste Composting Strategy, 2013.**

**Stormwater management:**

Current dams capacity:

The existing two dams (located on Portions 54 and 56 respectively) have a combined storage capacity of ±6600m<sup>3</sup>.

Proposed dam and capacity:

It is envisaged that the existing dams will be reshaped, and the walls merged in order to create a single dam with a smaller footprint. This will provide more economical usage of the available land.

- The proposed dam with a 3m high wall will have a capacity of ±13 800m<sup>3</sup> including a spare capacity of ±15%.
- If the wall is raised to 3.5m the storage capacity will increase to ±15 600m<sup>3</sup> with a spare capacity of ±30%.

In order to limit the runoff to the dams a cut-off drain will be constructed on the southern boundary of Portion 56. Runoff from the adjacent property will then be intercepted and directed towards the watercourse described above. This will reduce the catchment area of stormwater crossing the properties to ±13ha.

**\*Refer to the Stormwater Management Plan in Appendix K2 for details.**

**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
(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.	Unlimited

**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.
12	The development of- ii) Infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs (a) within a watercourse;	The combining of the two existing dams (located on Portions 54 and 56 respectively). The proposed combined dam with a 3m high wall will have a capacity of <b>±13 800m<sup>3</sup></b> including a spare capacity	Expansion

		of ±15%. If the wall is raised to 3.5m the storage capacity will increase to <b>±15 600m³</b> with a spare capacity of ±30%.	
19	The Infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;	The combining of the two existing dams (located on Portions 54 and 56 respectively). The proposed combined dam with a 3m high wall will have a capacity of <b>±13 800m³</b> including a spare capacity of ±15%. If the wall is raised to 3.5m the storage capacity will increase to <b>±15 600m³</b> with a spare capacity of ±30%.	Expansion (MMP – Operational)
28	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development: <del>(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or</del> (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare	The expansion of an existing composting facility that will have the capacity to treat in excess of 10 tons but less than 100 tons of general waste.	Expansion and Operational
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.
NA			

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

Category A Listed Activity No(s):	Describe the relevant <u>Category A</u> 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
3(3)	The recycling of general waste at a facility that has an operational area in excess of 500m², excluding recycling that takes place as an integral part of an internal manufacturing process within the same premises.	The expansion of an existing composting facility that will have the capacity to treat in excess of 10 tons but less than 100 tons of general waste.
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 expansion of an existing composting facility that will have the capacity to treat in excess of 10 tons but less than 100 tons of general waste.
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 expansion of an existing composting facility that will have the capacity to treat in excess of 10 tons but less than 100 tons of general waste.

**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.
NA		

(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 Provide brief description below:	YES	NO
No additional buildings are required for the proposed facility expansion.		
Infrastructure (e.g., roads, power and water supply/ storage) Provide brief description below:	YES	NO
Existing internal roads will provide for sufficient movement at the facility.		
Processing activities (e.g., manufacturing, storage, distribution) Provide brief description below:	YES	NO
Not Applicable.		
Storage facilities for raw materials and products (e.g., volume and substances to be stored) 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. The bulking agents will be stored in a demarcated area within the development footprint. No animal by-product will be stockpiled.		
Storage and treatment facilities for effluent, wastewater or sewage: Provide brief description below:	YES	NO
<p><u>Existing Dams:</u> The existing two dams (located on Portions 54 and 56 respectively) have a <b>CURRENT</b> combined storage capacity of ±6600m<sup>3</sup>.</p> <p><u>Proposed Dam Alteration:</u> It is envisaged that the existing dams will be reshaped and the walls merged in order to create a single dam with a smaller footprint. This will provide more economical usage of the available land.</p> <ul style="list-style-type: none"> <li>• The proposed dam with a 3m high wall will have a capacity of ±13 800m<sup>3</sup> including a spare capacity of ±15%.</li> <li>• If the wall is raised to 3.5m the storage capacity will increase to ±15 600m<sup>3</sup> with a spare capacity of ±30%.</li> </ul> <p><u>Stormwater:</u> In order to limit the runoff to the dams a cut-off drain will be constructed on the southern boundary of Portion 56. Runoff from the adjacent property will then be intercepted and directed towards the watercourse described above. This will reduce the catchment area of stormwater crossing the properties to ±13ha.</p>		
Storage and treatment of solid waste Provide brief description below:	YES	NO
Not Applicable.		
Facilities associated with the release of emissions or pollution. Provide brief description below:	YES	NO
<p>Possible odorous emissions associated with the biological decomposition process of organic waste to produce compost may be emitted. The compost facility will operate in terms of best practice measures intend to minimise or avoid offensive odours.</p> <p>Hydrogen sulphide and ammonia as gaseous emissions, which could be associated with the activity and might negatively affect the receptor community and the environment. In order to ensure the above-mentioned odorous emissions from this proposed activity is not harmful to the health and well-being of people, passive fence line monitoring for these pollutants may be required by the relevant authority. The applicant must ensure that best practice is implemented to ensure the control of odorous emissions.</p> <p>The National Ambient Air Quality Standards in terms of Section 9(1) of the Air Quality Act as promulgated in the Government Notice 1210 of 2009 does not make provision for limit values as odour indicators, aimed to reduce the detrimental effect on the environment, including health,</p>		

social conditions, economic conditions, ecological conditions or cultural heritage. Although South Africa do not have guidelines for controlling and managing odours, various odour thresholds and guidelines have been published internationally in the determination of the odour impact

The applicant must follow best available techniques (BAT) to avoid offensive odours at the compost facility.

Other activities (e.g., water abstraction activities, crop planting activities) – 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	716/25 = <b>43.64ha</b> 716/54 = <b>4.49ha</b> 716/56 = <b>6.61ha</b>	ha
(b) Size of the facility: Indicate the size of the facility where the development proposal is to be undertaken	4.7	ha
(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)	Composting area (windrows) to be expanded by 3ha.	ha
(d) Size of the activity: Indicate the physical size (footprint) of the development proposal	4.7	ha
(e) For linear development proposals: Indicate the length (L) and width (W) of the development proposal	(L)	m
	(W)	m
(f) For storage facilities: Indicate the volume of the storage facility	Retention dam = 13800	m <sup>3</sup>
(g) For sewage/effluent treatment facilities: Indicate the volume of the facility (Note: the maximum design capacity must be indicated)	Retention dam = 13800	m <sup>3</sup>

### 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?	m	

(c) Describe the type of access road planned:

Not Applicable.

**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).

Portions 54 & 56 of Farm Groenfontein No 716, Paarl are located ±3.0km northwest of Klapmuts off Divisional Road 1104.

Portion 56 is currently partially used for the manufacturing of compost. The only buildings are a

vacant shed and a small office building being used by the compost staff. An earth dam is situated in the north western corner of the property.

Portion 54 is not being used for any activity and the two existing sheds are vacant. There is an earth dam on the north western boundary. Both sites have an even grade of  $\pm 2\%$  from south east to north west and drains towards the two dams respectively. The unused portions of the land are covered in grass and a number of trees on Portion 54.

Coordinates of all the proposed activities on the property or properties (sites):	<b>Latitude (S):</b> (deg.; min.; sec)			<b>Longitude (E):</b> (deg.; min.; sec.)		
	<b>33°</b>	<b>47'</b>	<b>09.76"</b>	<b>18°</b>	<b>50'</b>	<b>16.88"</b>

**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).

NA

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

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).

NA

For linear activities:	<b>Latitude (S):</b> (deg.; min.; sec)			<b>Longitude (E):</b> (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:	<p>The scale of the locality map must be at least 1:50 000. 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.</p> <p>The map must indicate the following:</p> <ul style="list-style-type: none"> <li>• an accurate indication of the project site position as well as the positions of the alternative sites, if any;</li> <li>• road names or numbers of all the major roads as well as the roads that provide access to the site(s)</li> <li>• a north arrow;</li> <li>• a legend;</li> <li>• a linear scale;</li> <li>• the prevailing wind direction (during November to April and during May to October); and</li> <li>• 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).</li> </ul> <p>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.</p> <p>Coordinates must be provided in degrees, minutes and seconds using the Hartebeesthoek94; WGS84 co-ordinate system.</p>
Site Plan:	<p>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:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The property boundaries and numbers of all the properties within 50m of the site must be indicated on</li> </ul>

	<p>the site plan.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The position of each element of the application as well as any other structures on the site must be indicated on the site plan.</li> <li>• 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 <u>must</u> be indicated on the site plan.</li> <li>• Servitudes and an indication of the purpose of each servitude must be indicated on the site plan.</li> <li>• Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): <ul style="list-style-type: none"> <li>○ Watercourses / Rivers / Wetlands - including the 32 meter set back line from the edge of the bank of a river/stream/wetland;</li> <li>○ Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable);</li> <li>○ Ridges;</li> <li>○ Cultural and historical features;</li> <li>○ Areas with indigenous vegetation (even if degraded or infested with alien species).</li> </ul> </li> <li>• Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted.</li> <li>• North arrow</li> </ul> <p>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.</p> <p>The GIS shape file for the site development plan(s) must be submitted digitally.</p>
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## 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
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### 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
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(b) Provide a description of the location in the landscape.

The sites have an even grade of  $\pm 2\%$  from south east to north west and drains towards the two dams respectively. The unused portions of the land are covered in grass and a number of trees on Portion 54. No geological investigation was carried out on site, but visual observations indicate that the general geology is made up of clayey material.

### 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
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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	Dolomite	Other (describe)
Provide a description.						
<p><b><u>Soils and Geology:</u></b>  Land Type: Db60  Soil: Prisma-cutanic and/or pedocutanic diagnostic horizons dominant, B horizons mainly not red  Geology: Mainly greywacke and phyllite of the Moorreesburg Formation and conglomerate, grit and sandstone of the Franschoek Formation, both Malmesbury Group; occasional alluvium, Quaternary quartz sand of the Springfontein Formation and ferricrete.  *Source: ENPAT. CapeFarmMapper. 28/05/2018. <a href="https://gis.elsenburg.com/apps/cfm/#">https://gis.elsenburg.com/apps/cfm/#</a></p> <p><b><u>Soil Clay and Depth:</u></b>  Symbol: CA  Class: Soils with a strong texture contrast  Description: Soils with a marked clay accumulation, strongly structured and a non-reddish colour. In addition one or more of vertic, melanic and plinthic soils may be present  Depth: &gt;= 450 mm and &lt; 750 mm  Clay: &lt; 15%  *Source: Department of Agriculture, Forestry and Fisheries. CapeFarmMapper. 28/05/2018. <a href="https://gis.elsenburg.com/apps/cfm/#">https://gis.elsenburg.com/apps/cfm/#</a></p> <p><b><u>Soil Erodibility:</u></b>  Erodibility: High  Erodibility Factor: 0.58  *Source: SA Atlas of Climatology and Agrohydrology (R.E. Schulze, 2009). CapeFarmMapper. 28/05/2018. <a href="https://gis.elsenburg.com/apps/cfm/#">https://gis.elsenburg.com/apps/cfm/#</a></p> <p><b><u>Geotechnical Information:</u></b>  The whole area is underlain by a firm to stiff weathered shale. Detailed descriptions have been included in the Geotechnical Report in Appendix G2.</p> <p><b><u>Foundation indicator tests:</u></b>  The results of indicator tests on four samples are attached .</p> <p>The clayey gravelly sand sample from TH 1 was obtained at a depth of about 200 mm. The fines in the sample can be classified as a clayey silt with no plasticity (NP) and no linear shrinkage. According to the unified soil classification it can be classified as a silty sand (SM)</p> <p>The clayey sandy silt sample from TH 2 was obtained at a depth of about 600 mm. The fines in the sample can be classified as a clayey silt with high plasticity (PI = 21.6) and high linear shrinkage of 10.2%. It falls on the A line of the plasticity chart, with classification of</p>						

**CL-ML** The activity of the clay is medium

The clayey sandy silt sample from TH 5 was obtained at a depth of about 900 mm. The fines in the sample can be classified as a clayey silt with medium to low plasticity (PI = 9.8) and low linear shrinkage of 3.3%. It falls on the A line of the plasticity chart, with classification of **CL-ML**. The activity of the clay is low.

The silty gravelly sand sample from TH 7 was obtained at a depth of about 1.7 m. The fines in the sample can be classified as a clayey silt with medium to low plasticity (PI = 7.4) and low linear shrinkage of 3.1%. It falls just above the A line of the plasticity chart, with classification of **CL**. The activity of the clay is low.

Permeability Tests:

The permeability test results on three samples from the test holes are attached. According to the results the permeability of all the samples are very low. All the samples were tested at Proctor density which represents the in situ density.

A mixture of the topsoil at TH 1 and TH 2 were also tested.

A summary of the test results are as follows

Sample	Depth (mm)	Proctor Density kg/m <sup>3</sup>	Moisture Content %	Permeability m/s
TH1&2	200	1993	8.5	7.665E-10
TH 2	500	1773	11.6	3.346E-9
TH 7	1200	1834	14.2	3.492E-10

**\*Source: Geotechnical Report, Appendix G2.**

**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.

The existing earthen dam located in the north western corner of portion 716/54 is identified as an artificial wetland <sup>1</sup>.

A non-perennial tributary of the Klapmuts river runs adjacent to the western boundary of portions 716/54 and 716/56.

**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)
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<sup>1</sup> This layer codes Wetland Freshwater Priority Areas (FEPAs), wetland ecosystem types and wetland condition on a national scale. The delineations were based largely on remotely-sensed imagery and therefore did not include historic wetlands lost through drainage, ploughing and concreting. Irreversible loss of wetlands is expected to be high in some areas, such as urban centres. In addition, there are many gaps in wetlands as remote sensing does not detect all wetlands. [Source: CapeFarmMapper (23/05/2018 <https://gis.elsenburg.com/apps/ctm/#>)]

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](mailto: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				
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)				

The existing earthen dams located on portion 54 and 56 respectively has been classified as follows in terms of the western cape biodiversity spatial plan 2017:  
Feature: River, Wetland, Watercourse  
Category 1: ESA2: Restore from other land use

Northern half of portion 54 is classified as a CBA: Terrestrial. The CBA makes up 13.2% of the proposed development area and consists predominantly of grass and a clustering of trees.

According to the western cape biodiversity spatial plan 2017 the ecosystems usually found within this region can be made up of Swartland Alluvium Fynbos, Swartland Granite Renosterveld, Swartland Silcrete Renosterveld or a combination thereof. Based on the vegetation left on site (grasses area and clustering of trees) it is not likely that what is present on site would be of significant value in preserving the ecosystem.

- (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 <sup>2</sup> )	Description and additional comments and observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing/harvesting regimes, etc.)
	0%      0m <sup>2</sup>	NA

Natural			
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	0m <sup>2</sup>	NA
Degraded (includes areas heavily invaded by alien plants)	0%	0m <sup>2</sup>	NA
Transformed (includes cultivation, dams, urban, plantation, roads, etc.)	100%	4.7ha	Portion 56 is currently partially used for the manufacturing of compost. The only buildings are a vacant shed and a small office building being used by the compost staff. An earth dam is situated in the north western corner of the property. Portion 54 is not being used for any activity and the two existing sheds are vacant. There is an earth dam on the north western boundary. Both sites have an even grade of ± 2 % from south east to north west and drains towards the two dams respectively. The unused portions of the land are covered in grass and a number of trees on Portion 54.

- (c) Complete the table to indicate:
- the type of vegetation present on the site, including its ecosystem status; and
  - 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	13.2% of the proposed development has the following Ecosystems Threat Status Name: Swartland Alluvium Fynbos Status 2016: CR Status 2014: Critically Endangered (CR) Status 2011: CR
	Endangered	NA
	Vulnerable	NA
	Least Threatened	NA

Aquatic Ecosystems						
Wetland (including rivers, depressions, channelled and unchannelled 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 existing earthen dams located on portion 54 and 56 respectively has been classified as follows in terms of the western cape biodiversity spatial plan 2017:

Feature: River, Wetland, Watercourse

Category 1: ESA2: Restore from other land use

It is not the intention for the proposed development to negatively impact on the existing functioning of these two earthen dams. It is proposed that the two dams be consolidated into one dam and that a 3m earthen dam wall be erected on the dam's western boundary. This will allow for sufficient capacity within the dam for the stormwater runoff from the properties and the activities proposed to be conducted on these properties. The dam is expected to have a combined capacity of approximately 13800m<sup>3</sup> sufficient for a catchment of 13ha with the implementation of the cut-off drain established on the southern boundary of portion 53 to limit runoff on the property from

adjacent properties.

Northern half of portion 54 is classified as a CBA: Terrestrial. The CBA makes up 13.2% of the proposed development area and consists predominantly of grass and a clustering of trees. The CBA falls within an ecosystem which historically consists of Swartland Alluvium Fynbos (CR). It is however not likely that this classification is consistent with the current vegetation (grass and clustering of trees) on the property. The conservation / biodiversity significance of the vegetation present is considered to be low.

A site visit was again conducted on 16 February 2019. This is not the correct time of the year to do a botanical survey, but taking in consideration the status of the area, the time of year is deemed appropriate to do a survey. There is no natural vegetation present on the site. The area is disturbed with heaps of soil and overgrown with (Kikuyu grass) *Pennisetum clandestinum*. It is clear in the pictures below that the area is transformed and disturbed with no remnants of natural vegetation or ecological functioning left on the mapped CBA areas. The site survey and assessment revealed that the proposed area does not qualify as a CBA area and that it was incorrectly mapped as a CBA due to current status of the area.





## 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):				

(a) Provide a description.

Portion 56 is currently partially used for the manufacturing of compost. The only buildings are a vacant shed and a small office building being used by the compost staff. An earth dam is situated in the north western corner of the property. Portion 54 is not being used for any activity and the two existing sheds are vacant. There is an earth dam on the north western boundary. Both sites have an even grade of  $\pm 2\%$  from south east to north west and drains towards the two dams respectively. The unused portions of the land are covered in grass and a number of trees on Portion 54.

## 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):				

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

The nearest residential area is located in the town of Klapmuts approximately 3.2km northeast from the proposed development. Industrial enterprises can be located on the outskirts of the town of Klapmuts with commercial and other areas scattered throughout the town.

Agri-Industries in relation to the proposed development:

- Astral Operations (Nulaid) is located approximately 1.5km southwest;
- Keibeas Piggeies is located 3.9km west;
- Zandam Poultry is located 3.9km northwest;
- Zandam Piggery is located 3.6km northwest;

JN Briers Louw Nature Reserve is located 2.3km north of the proposed development.

A Land Use Map indicating the proposed development area with a 5km buffer as well as a 2km buffer has been included in Appendix D.

## 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.).

Drakenstein Local Municipality is a Category B municipality and is situated in the Cape Winelands District of the Western Cape, and is approximately 60km east of the Cape Town Central Business District.

The Municipality is strategically located on the national road and railway routes to the rest of South Africa and effectively forms the gateway to the City of Cape Town. The Drakenstein Municipality covers an area of 1,538 km<sup>2</sup> and comprises of the towns of Paarl, Wellington, Saron, Gouda, Hermon, Mbekweni and Simondium.

It is a strong economic centre of the region, with a strong agricultural, tourism, light manufacturing industry and business services base and has recorded positive economic growth over the period 2001 to 2009.

The Drakenstein Municipality stretches from just south of the N1 freeway including Simondium in the



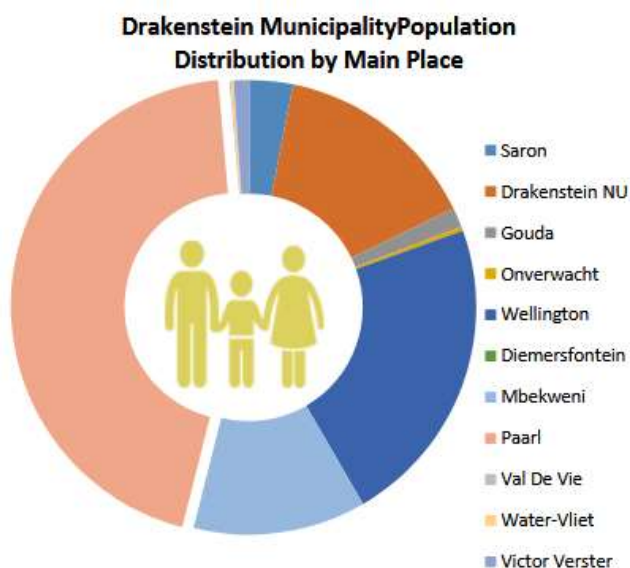
south up to and including Saron in the north. The Klein Drakenstein, Limiet and Saron Mountain range from its eastern edge and the agricultural area immediately to the west of the R45 its western border. Paarl and Wellington are the main urban centres in the Municipality located in close proximity to the N1 in the south with smaller rural settlements at Saron and Gouda in the north and Hermon in the mid-west.

### Paarl

In the Drakenstein Municipal Jurisdictional Area Paarl, fondly known as the “Pearl of the Cape”, is the major centre. Paarl is nestled in a fertile valley, along the banks of the Bergrivier. It is traditionally a farming town with many well maintained and attractive Cape Dutch houses, beautiful gardens and streets lined with old oak trees. Paarl has the longest main road (±10km) in South Africa, lined with fascinating examples of architectural history. Here you can find scenic drives, hiking trails and the Paarl wine route, with its many wine tasting opportunities and excellent restaurants. The Paarl Rock itself is popular for rock climbers.

### Demographic Trends

The Drakenstein Municipality has the largest proportion of persons among municipalities in the Cape Winelands District Municipal (CWDM) Area at 31.9%. It is the second most densely populated municipality with 163 persons living within a km<sup>2</sup>, following behind Stellenbosch which has 187 living within a km<sup>2</sup>. The Census 2011 data provided by Statistics South Africa (Stats SA) indicates that the greatest proportion of the population in the municipality, with 44.6% of the 251,262 people residing in Paarl. The second most populous area is Wellington with 22.1%, followed by Drakenstein Non-Urban (NU) with 14.7% and then Mbekweni with 12.3%.



Source: Statistics SA: Census 2011

Figure 2.3: Population by main place

Main Place	Percentage
Diemersfontein	0.0
Val De Vie	0.1
Water-Vliet	0.2
Onverwacht	0.3
Victor Verster	1.1
Gouda	1.4
Saron	3.1
Mbekweni	12.3
Drakenstein Non-Urban	14.7
Wellington	22.1
Paarl	44.6

Table 2.1: Population by main place

### Key Economic Activities

The Community Survey of 2007 highlighted that the biggest specified employment contributors in 2007 were:

Key Economic Activities	%
Agriculture, hunting, forestry and fishing	16.7
Manufacturing	15.1
Community, Social and Personal Services	13.4
Wholesale and retail trade	11.1
Unspecified	19.8
Not adequately defined	5.8



The Municipal Economic Review & Outlook Report (MERO 2015) reports that, from a sectoral perspective, the financial and business services sector was the fastest growing sector in the region, both in terms of GDP growth (6,7 percent) and employment creation (4,0 percent) over the period 2010 – 2013. Other sectors that grew above or equal to average during the 2000 – 2013 period are the construction sector (6,5 percent), wholesale and retail catering and accommodation sector (5,2 percent), transport storage and communication (5,8 percent) and the community, social and personal services sectors (3,7 percent).

In terms of providing services in the abovementioned objectives the Unit achieved the following:

- Establishment of Red Tape Reduction Steering Committee and the development of a LED Charter to mainstream LED throughout the organisation
- Development of informal trading markets in Paarl CBD and Arendsnes
- Creation of 1,000 work opportunities through the EPWP and CWP Projects and
- Establishment of LTO as vehicle to develop tourism in the Drakenstein.

### Major Natural Resources

Major Natural Resources	Relevance to community
Berg River and tributaries	Important irrigation ,recreation and tourism feature
Paarl Mountain Reserve	Significant tourist and cultural asset
Arboretum	Scientific research and recreation
Several mountain Ranges	Water provision, recreation, contribution towards agriculture
Agriculture	Major employer of low skilled labour, export and local markets are serviced. Contributes towards local economy.

The Cape Winelands District economy has firm agricultural origins, the importance of which continues today and is reflected in the fact that one fifth of the region's work force is employed in this sector. Over the years, this sector has developed strong backward and forward linkages with manufacturing and services industries and the contemporary growth vehicle appears to be agri-tourism, reaching into all Cape Winelands District municipal areas.

The direct tourism linkage to agriculture is not high (4% of inputs into the tourism sector derives from agriculture), but the indirect value tourism has for the wine industry is related to the exposure local wines get to international markets and the marketing aspect of the tourism industry. The restaurant and tourist activity on wine farms also supplements the income of wine farmers and this in turn may be transferred to the agricultural sector. Also the presence of wine farms in the Cape Winelands District is a major attraction for tourism and this will boost expenditure on hotels and restaurants in the District which may be unrelated to the wine industry.

### Socio Economic Indicators

The socio-economic information for the Municipal Area is as follows:

Housing Backlog	Unemployment Rate (%)	Households with No Income (%)	People older than 14 years illiterate (%)	HIV/AIDS Prevalence (%)
22,748	23	52.7	26	HIV: 8,151

### Service delivery challenges

The following challenges are experienced by the municipality:

#### Environment

- Increasing number of illegal activities by inhabitation of Drakenstein leading to degradation of the environment.
- Lack of co-ordination between Departments in Drakenstein in ensuring the protection of the environment.
- Limited capacity for environmental education and awareness.

#### Infrastructure and Backlogs

- The major challenges within Waste Services are the limited airspace available at the Drakenstein
- Landfill Facility at Wellington and also the limited hydraulic load at the Wellington Wastewater Treatment Works. This will however be addressed in the 2015/16 and future financial years.
- The lack of highly qualified skilled personnel is also a concern especially at the landfill facility, wastewater treatment, potable water treatment, municipal plumbing, operations and technical staff.
- Delays in Environmental approvals.

#### **Housing**

- Delays in implementation of Housing Projects due to community dynamics.
- The condition of rental stock requires urgent attention. Funding and sufficient budget, however, remain a challenge link to the low rental collection rates;
- Illegal electricity connections by in informal settlements still continues to cause financial losses
- Farm worker evictions is reaching critical levels for which the Municipality has to seek financial support from other spheres of government in order to provide emergency housing to meet the demand
- The difficulties posed by the Prevention of Illegal Evictions Act hinders the Municipality in its efforts to evict illegal occupants
- Impatient applicants on the waiting list who fail to accept the allocation processes are also a problem;
- Limited funding available to increase housing delivery continues to impact roll-out.
- Absence of sufficient land and bulk services capacity;
- Increase in erection of informal dwellings (linked to the lack of capacity to effectively monitor the erection);

#### **Governance and capacity**

- Ever increasing legislative requirements and compliance requirements.
- Retention and attraction of scarce skills technical personnel.
- Protracted procurement processes.
- Motivating staff to live by the Batho Pele Principles.

#### **Safety and Security**

- Law Enforcement: Rendering a 24 hour security service to municipal premises.
- Visible Traffic and Law Enforcement throughout the Municipal Area.
- Traffic and Licence capacity
- Fire and Rescue capacity
- Disaster Management

#### **Social and Community Development**

- Food security
- Youth
- Early Childhood Development
- Lack of play parks, libraries and other amenities.
- Substance Abuse

#### **Issues relating to waste management within the Municipality as identified in the IDP:**

The municipality has embarked on a vigorous Waste Minimization program to divert green waste and builders' rubble from the landfill site and a dedicated facility has been constructed for this purpose. Gibb consulting engineers has been appointed to conduct a conditional assessment on all main sewers in Drakenstein with the view of future planning and maintenance.

Green aztecas, however prone to vandalism, are placed throughout the municipal area as receptacles for glass. Additional receptacles for other recyclable commodities such as plastics, paper, cooking oil, electronic waste and motor oil are available at the Wellington drop-off area (Wellington landfill site, Interpace) and Material Recovery Facility (Paarl Refuse Transfer station, Distillery Street).

DP 40.12: Municipality to find alternative ways to divert waste from landfill, include recycling, waste minimisation and composting.

**Yes. The municipality has a waste minimisation programme in place which includes certain wards and schools.**

**\*Source: Drakenstein Municipality Integrated Development Plan (IDP)2016/17 Revision**

## 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 000m<sup>2</sup> 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 000m<sup>2</sup> 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:	Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), is applicable to the proposed development as the expansion of the site exceeds 10 000m <sup>2</sup> in extent.			
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:	The development will not impact on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999.			
Will any building or structure older than 60 years be affected in any way?	YES	NO	UNCERTAIN	
If YES or UNCERTAIN, explain:	No building or structure older than 60 years will be impacted in any way.			
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:	No archaeologically significant resources were found during the foot survey. The site is ploughed and planted.			

**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 Management Act, 1998 (Act No. 107 of 1998) [NEMA] and relevant regulations	Western Cape Department of Environmental Affairs and Development Planning	Environmental Authorisation Application	In Process
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	Section 21 Application.	In Process
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 [FFARSRA] 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

(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.

<b>LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS</b>	<b>Describe how the proposed development complies with and responds:</b>
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 (EMP's)	Western Cape Department of Environmental 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

**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.

- 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— (i) illiteracy; (ii) disability; or (iii) any other disadvantage.	YES	EXEMPTION	N/A
<b>If you have indicated that "EXEMPTION" is applicable to any of the above, proof of the exemption decision must be appended to this report.</b>			
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.			

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

### Pre-Application BAR Phase

State Department / Organ of State	Date request was sent:	Date comment received:	Support / not in support
Cape Winelands District Municipality	08/06/2018	-	NA
CapeNature	08/06/2018	06/07/2018	Support with conditions
DEA&DP: Air Quality Management	08/06/2018	26/06/2018	Support with conditions
DEA&DP: Development Management (Competent Authority - EA Application)	08/06/2018	05/07/2018	Support with conditions
DEA&DP: Pollution and Chemical Management	08/06/2018	11/07/2018	Support with conditions
DEA&DP: Waste Management	08/06/2018	05/07/2018	Support with conditions

(Competent Authority - WML Application)			
Department of Agriculture, Western Cape	08/06/2018	05/10/2018	Support with conditions
Department of Agriculture, National Department	08/06/2018	-	NA
Department of Health	08/06/2018	-	NA
Department of Water and Sanitation	08/06/2018	23/10/2018	Support with conditions
Heritage Western Cape	08/06/2018	-	NA
Drakenstein Local Municipality	08/06/2018	-	NA

### **Draft BAR Phase**

<b>State Department / Organ of State</b>	<b>Date request was sent:</b>	<b>Date comment received:</b>	<b>Support / not in support</b>
Cape Winelands District Municipality	04/03/2019	-	NA
CapeNature	04/03/2019	27/03/2019	Support with conditions
DEA&DP: Air Quality Management	01/03/2019	26/03/2019	Support
DEA&DP: Development Management (Competent Authority - EA Application)	01/03/2019	27/03/2019	Support with conditions
DEA&DP: Pollution and Chemical Management	01/03/2019	-	NA
DEA&DP: Waste Management (Competent Authority - WML Application)	01/03/2019	29/03/2019	Support with conditions
Department of Agriculture, Western Cape	04/03/2019	-	NA
Department of Agriculture, National Department	04/03/2019	18/03/2019 02/04/2019	Support with conditions
Department of Health	04/03/2019	25/03/2019	NA
Department of Water and Sanitation	04/03/2019	-	NA
Heritage Western Cape	04/03/2019	-	NA
Drakenstein Local Municipality	04/03/2019	29/03/2019	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**).

### **REGISTRATION PERIOD**

#### **Heritage Western Cape**

You are hereby notified that, since there is no reason to believe that the proposed expansion and waste management license application for the Groenfontein Klapmuts Compost Facility located on Farm Groenfontein Annex 25/716, 54/716 and 56/716, Paarl, will impact on heritage resources, no further action under Section 28 of the National Heritage Resources Act (Act 25 of 1999) is required.

#### **DEADP: Development management**

Please note the following pertaining to the Nol:

Having considered the information contained in the Nol, the Department concurs that the proposed development will constitute listed activities as defined in terms of the NEMA EIA Regulations, 2014 (as amended). However, since the proposal will be the expansion of an existing facility, Activity 43 of Government Notice No. 327 of 7 April 2017 will be applicable and not Activity 8 of Government Notice No. 327 of 7 April 2017.

#### **DEA&DP: Waste Management**

The Department has the following comments on the NOI:

1. A detailed description of the area that will be used for the composting (geology, slope, current use, distance to water sources, distance to communities, etc.), needs to be included in the next phase of the application.
2. According to page 7 of the NOI, no emissions are expected. However, the odours arising from composting facilities can become a nuisance to surrounding communities. On page 20 of the NOI a map was included and the legend of the map includes a marking for "Allotment Township". Kindly clearly indicate if this is an existing township, the planned proximity of this township to the proposed composting area, as well as the major wind direction in the area.
3. Page 7 of the NOI states that a Water Use Authorisation is required for the collecting and handling of waste in a manner which may have a detrimental impact on a water resource. Kindly indicate what water resource is being referred to, as well as the proximity of the water resource in relation to the composting facility and how the water resource will be impacted on.

#### **Drakenstein Heritage Foundation**

We note that Groenfontein is an historical farm. Application should indicate position of historical buildings/ fabric.

#### **PRE-APPLICATION PERIOD**

##### **DEADP: AIR QUALITY MANAGEMENT**

- 1.1. Dust and noise may be generated during the construction phase of the project.
- 1.2. In this regard, the operation must comply with the following:
  - National Environmental Management: Air Quality Act (NEM: AQA). National Dust Control Regulations (Notice 827 of 2013);
  - Western Cape Noise Control Regulations (PH 200/2013).
- 1.3. The D: AQM is aware that the composting process generates a certain level of odour and this could possibly lead to complaints being received 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."

- 1.4. The proposed Standard Operating Procedures (SOP's) mentioned in the Pre- Application BAR should be instituted and maintained in the daily operational production process. The EMP should include, but not be limited to the following considerations related to the abovementioned SOP's
  - The composting facility lies 3.2 km away from the residential area of Klappmuts, therefore it is important to mitigate measures to reduce odours resulting in nuisance conditions.
  - High temperatures may pose a fire risk, therefore the windrows and bulk storage areas should be monitored for temperature spikes.
  - Hydrogen sulphide and ammonia ratios must be at the required level as to abate potential odour release.

#### ***Manner in which the comments were incorporated:***

- 1.1. The impact of noise and dust during the construction phase of the project has been assessed in the Impact tables of Appendix J and included in the BAR. Mitigation measures for noise and dust have been included in the construction phase of the EMPr.
- 1.2. Noted. As above.
- 1.3. Best practice measures have been included under the Operational phase of the EMPr (Goal 5).
- 1.4. Mitigation measures to mitigate odours have been included in the operation EMPr (Goal 5). A complaints register must be kept and maintained. All complaints must be investigated and acted upon.

Measuring of temperature of windrows have been included in Operational Data Specification to ensure that risk of fire is reduced as a result of bulk stockpiling / windrows.

The Operational Data Specification has been included as an annexure to the EMPr.



## **DEADP: DEVELOPMENT MANAGEMENT**

1. This Department's comments are as follows:

- 1.1. Based on Google Earth imagery the composting facility has been operational since before 2005. Please confirm when the existing facility was established and what the current footprint of the composting facility is.
- 1.2. Be advised that the National Department of Environmental Affairs confirmed in a response to an enquiry that composting is not considered to fall within the ambit of an agri-industrial activity, as defined in either Activity 8 or 43 of GN No. 327 of the NEMA EIA Regulations, 2014 (as amended) and is therefore not applicable to the proposed development.
- 1.3. According to the information provided, the dam in the north-western corner of the site is classified as a wetland. If the wetland is a watercourse, as defined in terms of the NEMA EIA Regulations, 2014 (as amended), the proposed alterations to the dam will trigger the listed activities indicated below. In addition to the above, it was also indicated that a cut-off drain will be constructed along the southern boundary of the site, which will intercept runoff from the adjacent properties towards the watercourse. If the drain will be located within 32m of the watercourse or within a watercourse, it might also trigger the following listed activities:

- **Activity 12 of GN No. 327**

The development of-

(i) dams or weirs, where the dam or weir, including infrastructure, and water surface area, exceeds 100 square metres; or

**(ii) Infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs**

**(a) within a watercourse;**

(b) in front of a development setback; or

(c) If no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; -

excluding-

(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;

(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;

(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;

(dd) where such development occurs within an urban area;

(ee) where such development occurs within existing roads, road reserves or railway lines; or

(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.

- **Activity 19 of GN No. 327**

**The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;**

but excluding where such infilling, depositing, dredging, excavation, removal or moving -

a) will occur behind a development setback;

b) is for maintenance purposes undertaken in accordance with a maintenance management plan;

c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;

d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or

e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.

- 1.4. If Activity 19 of GN No. 327 is triggered, and future maintenance related work may be required, the Department recommends that a Maintenance Management Plan ("MMP") forms a component of the Environmental Management Programme ("EMP"). Should the Department agree to the proposed MMP, future maintenance work specified within the MMP would not require an Environmental Authorisation prior to the undertaking thereof. Please refer to the attached document. Please be advised that the MMP relates to the

- forementioned listed activity only.
- 1.5. Since the proposed expansion is in close proximity to a watercourse, the distance / buffer area between the watercourse and the development must be clearly indicated on a layout plan.
  - 1.6. Comment from the following key stakeholders must be included in the Final BAR:
    - 1.6.1. A comment from the Department of Agriculture since the site will be expanded onto agricultural land.
    - 1.6.2. A comment from the Department of Water and Sanitation ("DWS"). Please be advised that in terms of the Standard Operating Procedure between this Department and the Department of Water and Sanitation, which came into effect on 1 July 2017, the Environmental Assessment Practitioner must submit a written water use application request to the Department of Water and Sanitation to determine whether or not a General Authorisation or WULA in terms of the National Water Act, 1998 (Act No. 36 of 1998) is required. In terms of the Agreement for the One Environmental System (section 50A of the NEMA and sections 41 (5) and 163A of the NWA) the processes for a WULA and for an EIA must be aligned and integrated with respect to the fixed and synchronised timeframes, as prescribed in the EIA Regulations, 2014 (as amended), as well as the 2017 WULA Regulations.
  - 1.7. It was noted that the preferred technology alternative is composting using the turned windrow method. Please indicate whether this is the Low Technology alternative or the Medium Technology alternative since both refer to the turned windrows as examples of composting methods. You are also required to provide motivations why the other technology alternatives are not preferred.
  - 1.8. Further to the above, although different technology alternatives were included under Section E of the Draft BAR, these were not included in the Impact Tables attached as Appendix J. The Impacts Tables must be repeated for each identified alternative to ensure a comparative assessment.

**Manner in which the comments were incorporated:**

- 1.1. Please be advised that the facility does have an existing Environmental Authorisation - please refer to Appendix K4 for a copy of the Authorisation. The facility is currently operating in terms of the following:
  - Current extent of the composting area (in hectares or m<sup>2</sup>):  
+/- 1.36ha currently being used
  - Tonnage of compost produced (per month / annum):  
Figures are based on sales for the period from Jan 2018 – Jan 2019
    - Chicken manure: 1,267 m<sup>3</sup>/month
    - Compost: 538 m<sup>3</sup>/month
    - Waste Manure: 426 m<sup>3</sup>/month
- 1.2. Noted. As such the listed activity will be excluded from the application.
- 1.3. As the artificial wetland is considered a watercourse the proposed activity will trigger Listed activity 12 and 19 in Listing Notice 1.
- 1.4. As listed activity 19 is triggered an MMP will be included as part of the operational EMP. This will be submitted on the DEADP template provided and submitted with the Draft BAR.
- 1.5. Watercourses and buffers are clearly indicated on the map provided in Appendix D.
- 1.6. Comment from the Department of Agriculture (Western cape) was received to which they have indicated that they have no objection to the expansion (their comment has been captured as part of this comments and responses report).  
Comment from the Department of Water and Sanitation has been received to which they have indicated the water uses associated with the application. An application has been lodged on eWULAs which has been included in Appendix E2 of the BAR (their comment has been captured as part of this comments and responses report).
- 1.7. The application is for the EXPANSION of an existing composting facility currently implementing composting by turned windrow (low technology). The facility intends to accept mixed

"compostable organic waste" including but not limited to primary sewage sludge, manure, and in some cases animal waste (carcasses, abattoir waste, etc). As such the turned windrow method implemented at the EXPANDED facility would be considered to fall within both Low Technology as well as Medium Technology due to the organic waste accepted at the facility.

Additional motivations have been added to the technology alternatives – it must be noted that alternatives are based upon the National Organic Waste Composting Strategy, 2013.

- 1.8. Technology alternatives are discussed, however as this is an EXPANSION application based on the existing operation of the current activities at the facility. Changing the facilities entire operation is not reasonable or feasible in terms of this application.

#### **DEADP: WASTE MANAGEMENT**

- 1.1. Kindly provide a more detailed description of the current composting facilities occurring on site. Kindly include details on when the composting at the facility started, what is currently being composted, what is the current size of the operations in terms of quantities being composted, as well as the physical size of the operation.
- 1.2. It is not clear from the application what types of organic waste will be composted. Kindly clarify what will be composted, the expected quantities to be composted, as well as where the materials will be sourced and how it will be transported to the Facility, in the draft BAR to be submitted.
- 1.3. Page 14 states that the Facility is near a tributary of the non-perennial Klipmuts River. Page 31 states that there is a concern about the proximity of the facility to this River and that a Water Use License would be required to authorise the expansion of this Facility. Kindly obtain comment from the Department of Water and Sanitation on this proposed development and include proof of submission of the Water Use License Application in the draft BAR.
- 1.4. On page 35, it is stated that no geological investigation was carried out on site. However, on page 54, the report states that storing feedstock and compost on a bunded and hard foundation, would reduce groundwater intrusion by leachate generated by the activity. Kindly note, that the composting operation will have to take place on an impermeable surface. It will be the onus of the applicant to prove to the Department that the ground at the Facility is suitable to prevent pollution of ground water. It is recommended that a soil specialist be appointed to provide this clarity to the Department.
- 1.5. According to the Waste Management License Application Additional Information Annexure, the site has a b+ climatic water balance, which means there is an increased probability leachate will be generated. Will groundwater be monitored? Should boreholes be installed, kindly indicate where the boreholes will be placed.
- 1.6. On various occasions in the document it is mentioned that the existing dams will be merged, and the volume of the dam will increase. Are these dams lined in any way? Are there any plans to have them lined?
- 1.7. According to page 53 of the Report, there is a possibility that chipping of wood might occur on site.  
Kindly note, as the operational area of the facility is greater than 1000m<sup>2</sup>, the chipping of wood will need to adhere to the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA) '*National Norms and Standards for the Sorting, Shredding, Grinding, Crushing, Screening or Baling of General Waste*', as contained in Government Notice (GN) No. 1093 of 11 October 2017.
- 1.8. Regarding the section on Record Keeping on page 14 of the Environmental Management Programme (EMPr), kindly include records of the amounts of incoming waste, waste processed at the Facility and waste and compost removed from Facility.
- 1.9. Kindly note that empty pesticide containers might still contain residual pesticide and as such, these empty containers are considered hazardous waste. Kindly ensure that these containers are appropriately stored, prior to its disposal at a registered licenced waste management facility, capable of handling such waste.
- 1.10. On page 5 of the Waste Management License Application Additional Information Annexure, two different waste quantities to be treated are mentioned. Kindly clarify the amount of waste expected to be treated at the Facility.
- 1.11. Page 10 of the Waste Management License Application Additional Information Annexure refers

to a Soil Study that was attached to the Report as Appendix G3. No such appendix, or Soil Study has been included in the pre-application BAR received.

**Manner in which the comments were incorporated:**

- 1.1. Please be advised that the facility does have an existing Environmental Authorisation - please refer to Appendix K4 for a copy of the Authorisation. The facility is currently operating in terms of the following:
  - Current extent of the composting area (in hectares or m<sup>2</sup>):  
+/- 1.36ha currently being used
  - Tonnage of compost produced (per month / annum):  
Figures are based on sales for the period from Jan 2018 – Jan 2019
    - Chicken manure: 1,267 m<sup>3</sup>/month
    - Compost: 538 m<sup>3</sup>/month
    - Waste Manure: 426 m<sup>3</sup>/month
- 1.2. The Facility intends to accept mixed organic waste including but not limited to primary sewage sludge, manure, and in some cases animal waste (carcasses, abattoir waste, etc). Details regarding the organic waste intended to be accepted at the facility have been included in the WML Annexure A in Appendix I of the BAR.
- 1.3. Comment from the Department of Water and Sanitation has been received, dated 23/10/2018, to which they have indicated the water uses associated with the application. An application has been lodged on eWULAA's which has been included in Appendix E2 of the BAR (their comment has been captured as part of this comments and responses report).
- 1.4. Based on a desktop investigation the facility falls within an area with a land type: Db60, which is described as B horizon not red and is classed as prisma-cutanic and/or pedocutanic diagnostic horizons dominant. The soil is classed as soils with a strong texture contrast and are described as soils with a marked clay accumulation, strongly structured and a non-reddish colour. In addition one or more vertic, melanic and plinthic soils may be present. The soils depth ranges: >=450mm and <750mm; with a clay content of <15%. These soils have a high erodibility with an erodibility factor of 0.58.  
The appointed engineer whom designed the stormwater plan was also of the opinion that the soils are indicative of clayey consistency. According to the DWS guidelines for leachate control the following is required in terms of limiting or preventing leachate: "A designed lining system, which ensures low-permeability limit the movement of leachate into groundwater. Liners are made from low-permeability soils (typical clays) or synthetic materials (e.g. plastic)." Soils with sufficient clay content would therefore be suitable lining to prevent leachate from penetrating to groundwater and causing contamination. The applicant to apply an additional clay layer to areas for composting this should render the composting areas impermeable.
- 1.5. Please refer to the climatic water balance located in Appendix K3. Take note that the calculation is conservative as it ignores run-off and thus assumes that all precipitation will infiltrate. The calculation also ignores the moisture storage capacity of the waste body or the cover.  
It must also be noted that the proposed activity is for the composting of organic waste through the method of turned windrows. A stormwater management plan and cut off drains to manage runoff on the proposed development area is included in Appendix K2 of the BAR. Based on the specific site factors, including the physical geomorphological features and topography as well as the management of runoff on site it is not expected that significant leachate will be generated through the operations conducted at the facility.
- 1.6. The dam will have a clay lining.
- 1.7. Noted. Should an operational area exceed 1000m<sup>2</sup> the applicant will comply with the Norms and Standards applicable to the activity. This has been included in the operational EMPr.
- 1.8. The section dealing with record keeping has been amended as per the Departments comments.
- 1.1. Pest control containers are handled as per the requirements of NEMWA and the applicable by-law. This has been included in the relevant sections of the EMPr.
- 1.2. This has been amended.
- 1.3. This was erroneously included in the document and has been amended.

**CAPENATURE**

1. According to the Western Cape Biodiversity Spatial Plan (BSP) of 2017 terrestrial Critical

Biodiversity Areas (CBAs) mapped on portions 54 (north and north eastern section of the property), portion 25 (small area near the boundary with portion 54) and a thin strip along the north eastern boundary of portion 56. The desired management objective for CBAs is that they are maintained in a natural or near-natural state with no further loss of habitat. Degraded areas should be rehabilitated, and only low impact biodiversity sensitive land uses are appropriate. This is correctly reflected in the report.

2. The majority of the proposed expansion area does not coincide with the mapped CBAs and thus it is not opposed. However, there is a strip of proposed expansion area which runs along the north eastern boundary of the existing development which does coincide with the CBA (as indicated in Appendix D1 in the Biodiversity Map of your report). It is recommended that this section of the proposed expansion to be omitted from the development footprint in order to allow for the CBA to remain intact.
3. The mapped vegetation for the area, if it were in a natural state, is Swartland Silcrete Renosterveld (Critically Endangered) across most of portion 56; Swartland Alluvium Fynbos (Critically Endangered) covering the north and eastern sections of portion 54 and Swartland Granite Renosterveld (Critically Endangered) which runs along the north western boundary of portion 56 and the south western boundary of portion 54. Portion 25 is mapped as a mix of these 3 Critically Endangered vegetation types. It is reflected in the report that the actual state of vegetation on site is largely transformed by previous and currently land-use however please provide clarity as to whether a botanical survey was done; given that the indigenous vegetation that would naturally occur in this area is listed as critically endangered it is important to provide more thorough information on the current status of the vegetation on site.
4. In relation to the stormwater management component of this application, it is noted that the proposed combining of the two existing dams will create a single dam with a smaller footprint. This is not opposed.
5. In relation to water runoff and the potential for water pollution, it is noted that the design layout has provided for channels along downslope boundaries and for run off to be kept separate from the natural water course. If implemented correctly this should avoid impacts on indigenous aquatic biota in the natural water course.
6. Rehabilitation of all eroded areas and regular and ongoing control of invasive alien species is required across all properties and not just limited to the immediate area of the development footprint.

**Manner in which the comments were incorporated:**

A site visit was again conducted on 16 February 2019. This is not the correct time of the year to do a botanical survey, but taking in consideration the status of the area, the time of year is deemed appropriate to do a survey. There is no natural vegetation present on the site. The area is disturbed with heaps of soil and overgrown with (Kikuyu grass) *Pennisetum clandestinum*. It is clear in the pictures below that the area is transformed and disturbed with no remnants of natural vegetation or ecological functioning left on the mapped CBA areas. The site survey and assessment revealed that the proposed area does not qualify as a CBA area and that it was incorrectly mapped as a CBA due to current status of the area.



**DEADP: POLLUTION AND CHEMICALS MANAGEMENT**

1. The proposed mitigation measures as proposed in this application must be implemented, maintained and adhered to during construction and implementation phases to prevent soil and water contamination;
2. The following phrase is misleading, and clarity is sought:  
"The existing two dams have a **combined** storage capacity of  $\pm 6600\text{m}^3$ ."  
The BAR indicates a combined storage is  $\pm 13\,200\text{m}^3$  and not  $\pm 6600\text{m}^3$ . Please clarify.

***Manner in which the comments were incorporated:***

1. Noted.

2. The current combined capacity of the dams is approximately  $\pm 6600\text{m}^3$ . The proposed combined capacity once the dams are merged will have a capacity of  $\pm 13\ 800\text{m}^3$  (if a 3m dam wall is erected) or  $\pm 15\ 600\text{m}^3$  (if a 3.5m dam, wall is erected).

#### **DEPARTMENT OF WATER AND SANITATION**

This Department has perused the abovementioned document and has the following comments:

- A Section 21 (g) disposing of waste in a manner which may detrimentally impact on a water resource; water use authorisation must be obtained prior to the proposed compositing activity.
- A Section 21 (e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1); water use activity must be applied for should the waste (dirty storm water) water be used on the property for irrigation purposes on the farm or on neighbouring farms. This authorisation must be approved prior to the activity going ahead.
- The proposed activity will happen within the 500 m from the boundary of a wetland. It therefore triggers water uses in terms of Section 21 (c) impeding or diverting the flow of water in a watercourse AND (i) altering the bed, banks, course and characteristics of a water course of the National Water Act, 1998 (Act 36 of 1998).
- The Risk Matrix (Appendix A) submitted by yourselves indicates that the impact of the activity will not be low but Medium. Therefore, kindly advise your client to apply for and obtain a Water Use Authorisation from this Department prior to commencing with any of the activities, as per Government Gazette No. 40229 in Government Notice 509 dated 28 August 2016.
- You are hereby advised to arrange for a water use authorisation pre-application meeting with the Department to advise on the water use authorisation process. Please note that as from January 2018, this Department ONLY accepts electronic water use applications.
- Water use applications can be submitted by <http://www.dwa.gov.za/projects.aspx> and then click on e-wulaas.

#### ***Manner in which the comments were incorporated:***

Noted. A Pre-application enquiry was lodged on the eWULAA platform on the 20 December 2018. We await further instruction / correspondence from the Department in terms of the pending enquiry.

#### **WESTERN CAPE DEPARTMENT OF AGRICULTURE – LAND USE MANAGEMENT**

In principal the Western Cape Department of Agriculture has no objection against the proposed application.

#### ***Manner in which the comments were incorporated:***

Noted.

#### **DRAFT PERIOD**

##### **Western Cape Department of Health: Community Based Services: Environmental Health**

No nuisances (odors, fly breeding, etc.) or health hazards may occur at any time during the construction phase or thereafter;

The compost facility must be designed, constructed and operated in such a way that no pollution (water, ground and air) occurs;

The transportation of material to be composted must be done in such a way that no nuisance or pollution of the environment and/or any water sources occurs;

The procedures and mitigation measures, as outlined in the EMP, must be strictly adhered to during the construction as well as the operational phase;

Any further requirements of the applicable Municipal Health Services authority (Cape Winelands District Municipality: Environmental Health section) must be adhered to.

#### ***Manner in which the comments were incorporated:***

The Departments comments have been incorporated in to the EMP for which must be adhered to strictly.

#### **Cape Nature**

Cape Nature comment on 6 July 2018 submitted in response to the Pre-Application BAR has been correctly reflected in this, the Draft BAR, however response to the point about the CBA status of the site is not correct.

The Biodiversity Spatial Plan (BSP) Map status of a site (e.g., Critical Biodiversity Area, Ecological Support Area, etc.) cannot be decided on an unofficial basis, nor can it be determined on a site by site basis unless reported to Cape Nature for verification by a qualified scientist.

This is because the status of an area is determined using a systematic biodiversity planning methodology that considers not only the province as a whole, but the amount of each biodiversity feature that remains intact (or restorable) relative to pre-determined targets (amounts) for biodiversity representation and persistence. The change in status of one area therefore affects the status of other areas, and areas that are in degraded condition or in an isolated location may still be required for meeting targets, hence their classification as "critical".

In addition, typically there are a number of features or reasons that inform the CBA status. It is not only vegetation cover (as indicated in the response) that informs the BSP status of an area.

In this case there are numerous reasons for the CBA status of the site including water resource protection, wetland protection as well as the protection of threatened vegetation types (as listed in detail in the comment of 6<sup>th</sup> July 2018). While it is noted that there is not natural vegetation remaining on site – as confirmed in the comments and responses table – it is important to understand that the reasons behind the CBA are not only related to vegetation but to other factors (in this case water resource protection) too. For this reason, as per our comment of 6<sup>th</sup> July 2018, it is recommended that the layout plan include alternatives that do not impact the CBA area of the site.

***Manner in which the comments were incorporated:***

Email to CapeNature from EAP 03/04/19:

Good afternoon Philippa,

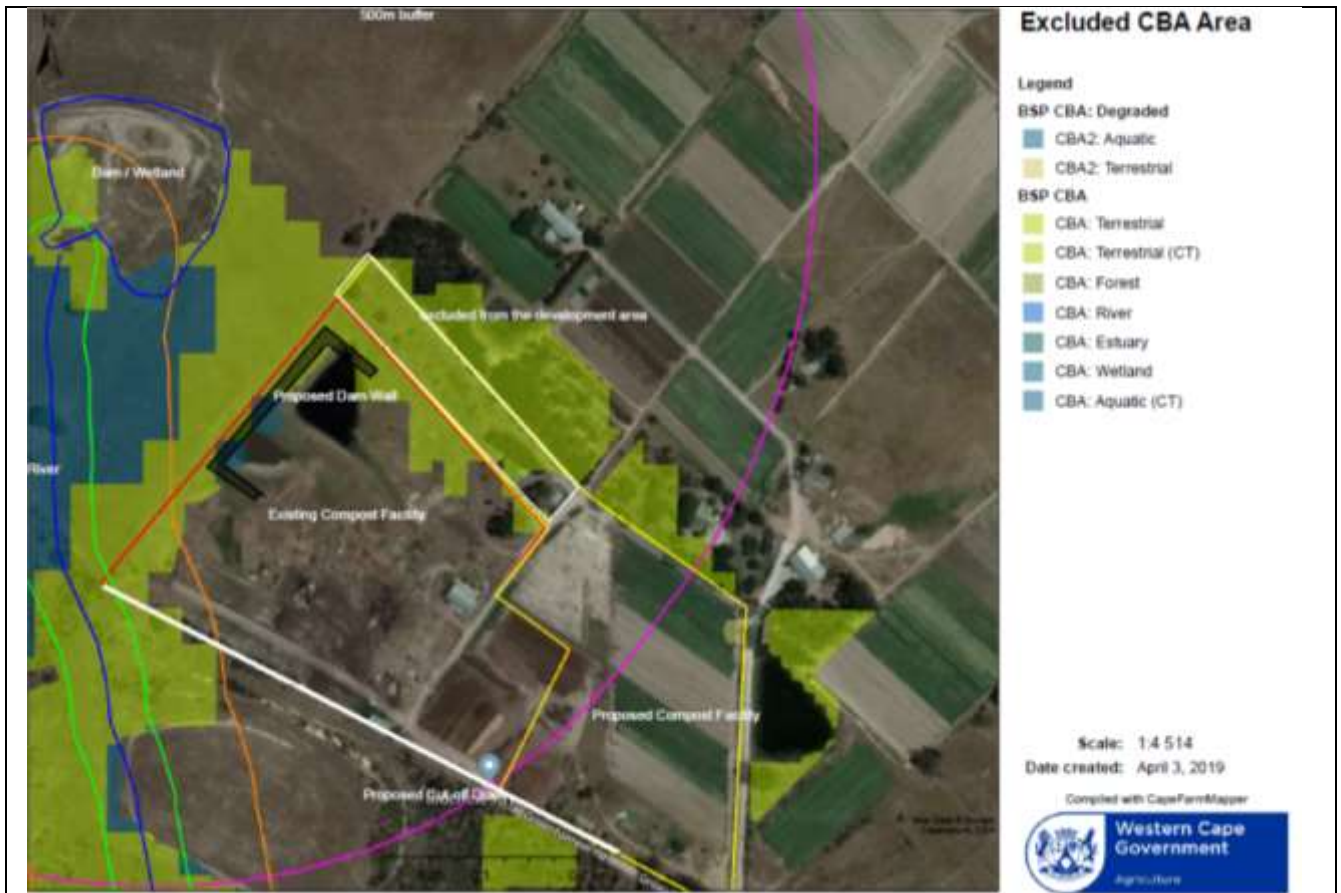
I trust this email finds you well.

I refer to CapeNature's comments dated 27 March 2019 (attached for ease of reference).

We take note of the reasons provided as to the categorization of the CBA's on the property. In response to the comment please find attached map which proposes to exclude the CBA area which falls within the development area on Groenfontein Annex 54/716. Please see attached map indicating the excluded area highlighted by the white polygon.

Please advise if CapeNature is in support of the proposed layout change to mitigate the potential affect on the CBA located on the property.





Kind regards.

Response from CapeNature 04/04/19:

Dear Lauren,

Thank you for the communication below and the attached map. I confirm that the proposed layout change which now excludes the CBA is accepted.

Kind regards.

Response from EAP to CapeNature 04/04/19:

Dear Phillipa,

Thank you for your email and the confirmation therein. Please note the correspondence will be reflected in the Final BAR for submission to the Department.

Kind regards.

Response from CapeNature to EAP 04/04/19:

Dear Lauren,

Yes, that is fine for the correspondence below to be included along with the map indicating the CBA and the now reduced footprint that excludes the CBA.

Kind regards.

**DEADP: Development Management**

1. This Department's comments are as follows:

- 1.1. Based on the information provided the proposed development also includes the expansion of structures and/or infrastructure within 32m of a watercourse. If the following listed activity is applicable, it must be included in the list of activities applied for:

### **Activity 48 of Listing Notice 1**

The expansion of:

- (i) infrastructure of structures where the physical footprint is expanded by 100 square metres or more; or
- (ii) dams or weirs, where the dam or weir, including infrastructure and water surface area, is expanded by 100 square metres or more;

where such expansion occurs –

- (a) within a watercourse;
- (b) in front of a development setback; or
- (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;

excluding –

- (aa) the expansion of infrastructure or structures within existing ports of harbours that will not increase the development footprint of the port or harbor;
- (bb) where such expansion activities are related to the development of a port or harbor, in which case activity 26 in Listing Notice 2 of 2014 applies;
- (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which that activity applies;
- (dd) where such expansion occurs within an urban area; or
- (ee) where such expansion occurs within existing road, road reserves or railway line reserves.

- 1.2. The comment from Cape Nature dated 6 July 2018 recommended that a section of the proposed development, which coincide with the Critical Biodiversity Area ("CBA") should be omitted from the development footprint in order to allow for the CBA TO REMAIN. Based on a subsequent site survey it is motivated that the specified area does not contain any indigenous vegetation and therefor does not qualify as a CBA. A final comment from Cape Nature to confirm that the potential botanical impacts have been adequately addressed must be included in the final BAR.
- 1.3. The Draft BAR includes a number of illegible images and poorly printed pages. This must be rectified in the final BAR. BAR and Environmental Management Programme, respectively to the Department application for Environmental authorisation being refused.
- 1.4. Be advised that an original signed and dated applicant declaration is required to be submitted with the final BAR to this Department for decision making. It is important to note that by signing this declaration, the applicant is confirming that they are aware and have taken cognisance of the contents of the report submitted for decision-making. Furthermore, through signing this declaration, the applicant is making a commitment that they are both willing and able to implement the necessary mitigation, management and monitoring measures recommended within the report with respect to this application.
- 1.5. In addition to the above, please ensure that original signed and dated Environmental assessment Practitioner declaration is also submitted with the final BAR for decision-making.

### ***Manner in which the comments were incorporated:***

1. Responses:
  - 1.1. The listed activity will be added to the application and the BAR. The amended Application will be submitted with the revised BAR
  - 1.2. Please see correspondence in the comment above.
  - 1.3. My apologies for the state that the document was received by the Department.
  - 1.4. The signed Declarations by ALL relevant persons will be provided in the Final BAR submitted for decision. The applicant signing the Declaration is fully aware / cognisant of the contents of ALL the submitted reports and the commitment in carrying out the mitigation, management and monitoring thereof.
  - 1.5. The signed EAP declaration will be provided in the Final BAR for decision.

### **DEADP: Waste Management**

1. The Sub-Directorate has the following comments on the BAR:
  - 1.1. The entire document was printed in black and white ink, except for a few images or layouts that were printed in colour. The black and white images were of poor quality, due to an ink problem, and therefore served no purpose, as the information being conveyed was not visible. This issue persisted in the appendices, including the Environmental Management Programme (EMPr). Kindly ensure that the document, i.e. the final BAR with appendices, is

- properly printed so that information it contains is legible.
- 1.2. The EMPr was very detailed, though it was too arbitrary and not very practical to implement. The arbitrary matters can be dealt with in the BAR, but the EMPr needs to be a document that governs the management and operation of the site where the listed activities will be undertaken. Therefore, specific measures need to be referred to in the EMPr.
  - 1.3. The project description in the EMPr is too brief and too arbitrary. It is noted that a more detailed project description was provided in the waste Management Licence (WML). Additional information Annexure. Kindly ensure that the EMPr is updated to include all the details of the project that was included in various section of the WML additional Information annexure.
  - 1.4. The Operational and Data Specifications document provided in annexure B of the EMPr is supported. However, it should be amended to address the control of vectors, such as flies and vermin, and the immediate covering of organic compostable waste. If immediate covering of such waste is not done, it could lead to suitable breeding grounds for vectors being provided and could result in scavenging birds feeding on the abattoir waste, etc.
  - 1.5. Please also indicate whether there will be a need to store compostable organic waste temporarily. The 200m<sup>3</sup> compostable waste referred to in the document is quite substantial and may lead to nuisance conditions being formed.
  - 1.6. This Sub-Directorate kindly requests that a process flow be included in the final BAR. The process flow should indicate each step at which the waste material is interacted with, from the time that the waste is transported to the composting facility until the compost is produced and waste is disposed of. A detailed overview of the waste management strategy is required. The various waste types must be included in the process flow. The process flow must also be included in the EMPr.
  - 1.7. The Site Development Plan must be presented more clearly, and the requested process flow should explain the different stages of the process according to the Site Development Plan. It is further requested that the Site Development Plan be overlaid on a map (e.g. Google Earth or ArcGIS Earth).
  - 1.8. It is recommended that the applicability of the following government notices be included in the EMPr:
    - Waste Information Regulations, 2012;
    - Waste Classification and Management Regulations, 2013; and
    - National Norms and Standards for the storage of waste, 2013.
  - 1.9. The BAR does not provide the engineer's drawings for embankment and cut-off drain that will be constructed, albeit the layout plan showing the cut-off drain and the raised dam wall as provided. Please ensure that the details cross sections of the dam wall and cut off trench are appended to the BAR. The engineer must also provide guidance on the specifications of the clay layer that will be placed on the ground surface where the compost activity will be undertaken.
  - 1.10. It is not clear why trial pits were not done to determine immediate soil characterisation of the site where the composting activity will be undertaken. The engineer's interpretation of trial pit results in this instance is requested. The classification of the soil and its permeability is thus being requested.
  - 1.11. From ArcGIS Earth it was apparent that, at the south western corner of the site, the topography is sloped towards the existing dam. The engineer has proposed to raise the dam's wall, which may prevent runoff from entering the dam. The department kindly request clarity about the expected flow of storm water and contaminated runoff at this part of the site.
  - 1.12. In many instances in the report, an approximation of the estimated quantities was 200m<sup>3</sup> per day, equated to 4000m<sup>3</sup> per month. This implies an average of 20 working days per month. The EMPr specifies that the facility will be open on Saturdays, which is a slight contradiction to the above, for which clarity is sought. Please note however, that the composting processing is lengthy, and that biological process of composting continues even when the Facility is closed. A more accurate quantification of waste managed daily is requested for the sake of clarity.
  - 1.13. Kindly note that there is currently a draft for Norms and Standards for Composting being compiled by the National Department of Environmental Affairs. When these Norms and Standards are gazetted, composting may possibly, no longer be a listed activity and the Norms and Standards would then need to be adhered to.

**Manner in which the comments were incorporated:**

1. Responses to comments:
  - 1.1. I sincerely apologise for the state that the document was received I shall ensure that the Final Report submitted for decision will be in an appropriate standard to ensure that all the information contained therein is legible.
  - 1.2. The EMPr has been amended to incorporate site specific mitigation requirements relating to operational specification of the facility to ensure that the EMPr can be used as an implementing document for the management of the facility which covers all operations of the facility.
  - 1.3. The project description has been amended to include all the details included in the WML Annexure A report.
  - 1.4. The Operational and Data Specifications document has been updated to include the vectors as indicated in the department's comments.
  - 1.5. Materials as referred to in the SDP will be stored at the facility, all raw materials are stored in accordance with the Operational and Data Specifications document to reduce nuisance associated with the activity.
  - 1.6. A process flow has been included in the BAR (Appendix K5) and EMPr.
  - 1.7. The process flow and SDP have been aligned to represent operational activities at the facility. The SDP has been overlaid on a map. Please see Appendix B.
  - 1.8. The EMPr has been amended to include the notices as indicated in the Department's comment.
  - 1.9. Please refer to the diagram in Appendix B2. Please also refer to the geotechnical report included in Appendix G2.
  - 1.10. A geotechnical investigation has been carried out for the facility which has been incorporated into the BAR. The report can be found in Appendix G2.
  - 1.11. The dam has been designed in accordance with the findings as per the stormwater management plan in Appendix D3.
  - 1.12. The operational times have been amended accordingly.
  - 1.13. Noted, once these have been promulgated it shall be taken into account accordingly.

**Drakenstein Municipality**

The Environmental Management division would like to register as an I&AP for the BAR process of the above-mentioned application. The Draft BAR was sent to the city Manager's office, who delegated the application to the Solid Waste Division for comment. However, one of the Environmental Management Division's functions is to obtain integrated comment from different line departments internally for EIAs and BARs.

The Environmental Management division received a copy of the DBAR from Solid Waste on 28 March 2019, which was after the deadline for submission of comments. Although Solid Waste provided their comments on the DBAR, this division would like to comment on the FBAR and would like to request that a copy be sent to our office in future. Alternatively we can be notified of the next public participation period via e-mail with a link to download the FBAR.

**Manner in which the comments were incorporated:**

Email from EAP to Ms. Cindy Winter [date: 01/04/2019]:

Good day there Cindy,

I refer to your email below.

Please take note that we have already conducted two rounds of commenting on the application as required by the legislation (Pre-application phase and the Draft Phase). I can afford you until the end of the week (05 April 2019) to submit your comments on the Draft BAR. The Final BAR is not subject to commenting and will be submitted to the department for decision within the legal timeframes stipulated for this application.

Should we receive your comments after the Final BAR is submitted to the Department we will forward the comments to the Department for inclusion in the Final BAR.

I trust the above is in order. Please feel free to contact me should you require any additional information

#### **DAFF: Land Use and Soil Management**

The Department of Agriculture, Fisheries & Forestry Directorate: Land Use and Soil Management administer and implement the Conservation of Agricultural Resources Act, (CARA) 43 of 1983). The Act is regarded as one of the principal Acts governing the protection of agricultural natural resources. The main aim of the Act is to control the utilization of natural agricultural resources includes the protection, recovery as well as the reclamation thereof.

The objectives of CARA are to provide for the conservation of the natural agricultural resources by the maintenance of the production potential of the land, by combating and prevention of erosion and weakening or destruction of the water resources, and by protecting the vegetation and combating weeds and invader plants.

During the enlargement and construction phase of the compost facility, soil erosion impacts will be possible along access routes the facility. Soil erosion may also be associated with decommissioning of the smaller structures (forms part of construction phase of the project) by implementing relevant erosion and sedimentation control, top soil conservation and rehabilitation works in affected areas and immediate rehabilitation and stabilization of any observed erosion as per specifications. The land owner must protect all areas susceptible to erosion by all means.

The compost facilities should be covered with appropriate indigenous vegetation upon completion of the proposed activity to prevent any form of erosion. Furthermore, immediate rehabilitation and stabilization of any observed erosion as per relevant specification is necessary.

It is also stated that the area have the alien plants, such plants need to be controlled and removed annually (on going clearing programs) as they can cause damage to the surrounding n natural vegetation. According to Conservation of Agricultural Resources Act, (Act 43 of 1983) methods of controlling alien plants are as follow:

- Uprooting, felling, cutting or burning
- Treatment with a weed killer that is registered for use in connection with such plants in accordance with the directions for the use of such
- Biological control carried out in accordance with the stipulations of the Agricultural Pests Act, (Act no 36 of 1983)
- Any other method of treatment recognized by the executive officer that has its object the control of plants concerned
- Combination of one or more methods mentioned above, and any action taken to control alien plants shall be executed with caution and in a manner that will cause least possible damage to the environment.

Therefore, this Department encourages the applicant to take responsibility that the above mentioned conditions are adhered to. However, the Department reserves the right to revise its initial comments and request further information from you based on any new or revised information received.

#### ***Manner in which the comments were incorporated:***

- The management of soil erosion has been included in the construction EMPr please see Objective C16.
- Please refer to the mitigation measures to be implemented in the rehabilitation/ closure phase of the EMPr.
- The methods as provided has been included in the management actions of Goal 14 in the Operational EMPr.
- Noted with thanks.

#### **DEADP: Waste Management**

1. Based on the review of the BAR, the following comments about the listed activities applied for are applicable:



- 1.1 The Category A waste listed activity No. 3(3) which states: "the recycling that takes place as an integral part of an internal manufacturing process within the same premises", must be included in the list of activities applied for.
- 1.2 The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) defines "recycle" as a process where waste is reclaimed for further use and the processing of that separated material as a product or raw material. The impacts for this listed activity has been identified and have already been assessed in the BAR. Therefore, only minor changes to the BAR are required.

**Manner in which the comments were incorporated:**

The listed activity has been added to the BAR as well as to the WML Application.

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.

**Heritage Western Cape**

However should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately and Heritage Western Cape must be notified without delay.

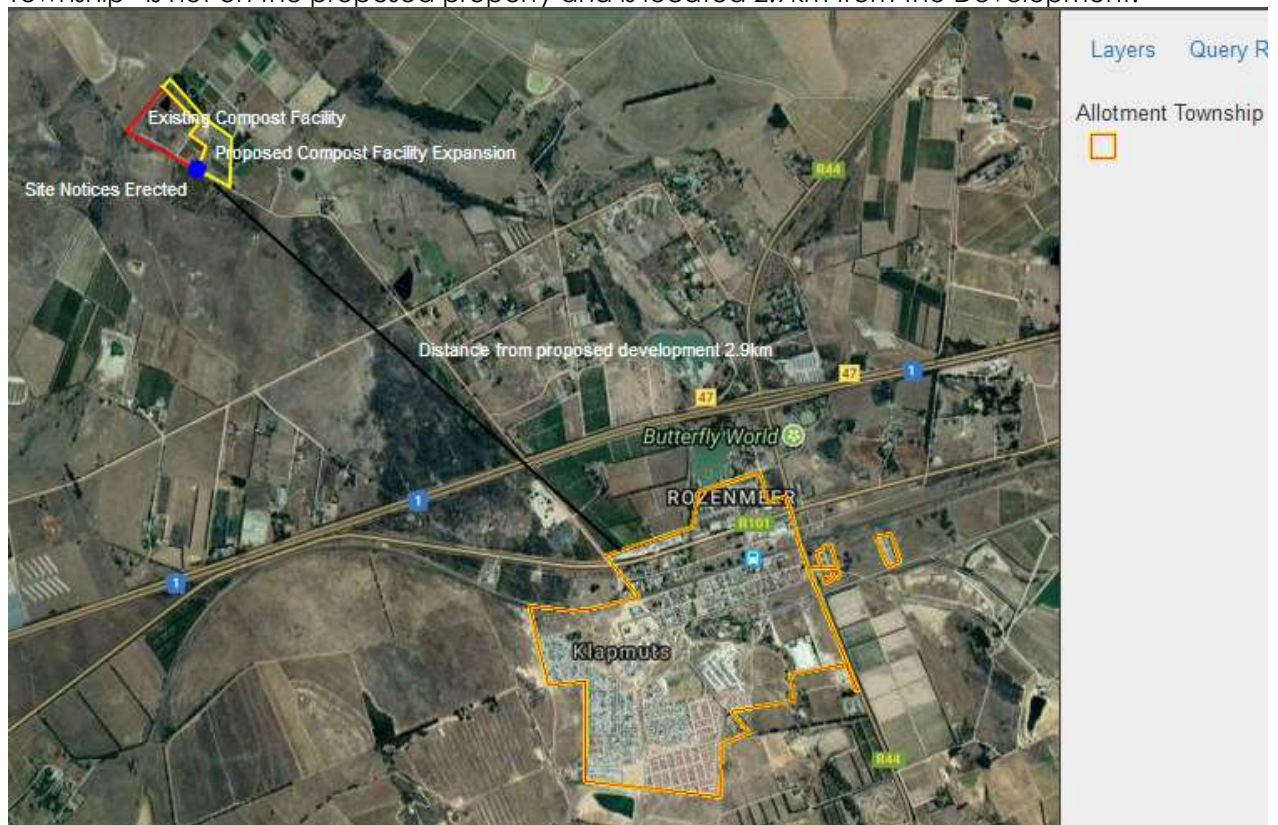
**DEADP: Development management**

The BAR has been amended to include listed Activity 43 of Government Notice No. 327 of 7 April 2017 and exclude Activity 8 of Government Notice No. 327 of 7 April 2017.

**DEA&DP: Waste Management**

1. A detailed description of the proposed composting area has been included in the Basic Assessment Report.
2. Odours as a result of the composting activity has been assessed in Appendix J of the BAR. Mitigation measures to reduce odours resulting in nuisance has been included in the Operation phase of the EMP in Appendix H.

When making the map submitted with the NoI, the EAP used CapeFarmMapper and ticked the layer for "towns". The legend includes "Allotment Township" as can be seen below the "Allotment Township" is not on the proposed property and is located 2.9km from the Development.



3. Please refer to section B part 4 of the BAR as well as to the Impact tables in Appendix J detailing

the potential impacts the activity may pose on the adjacent water resource.

### **Drakenstein Heritage Foundation**

Noted. No historical buildings/fabric is located within the proposed development footprint.

### **DEADP: Air Quality Management**

- Dust and noise during the construction phase must comply with the following:
  - National Environmental Management: Air Quality Act (NEM: AQA). National Dust Control Regulations (Notice 827 of 2013);
  - Western Cape Noise Control Regulations (PH 200/2013).
- The facility must investigate best practice measures to minimise or avoid offensive odours.
  - The EMP should include, but not be limited to the following considerations related to the abovementioned SOP's
  - The composting facility lies 3.2 km away from the residential area of Klapmuts, therefore it is important to mitigate measures to reduce odours resulting in nuisance conditions.
  - High temperatures may pose a fire risk; therefore the windrows and bulk storage areas should be monitored for temperature spikes.
  - Hydrogen sulphide and ammonia ratios must be at the required level as to abate potential odour release.

### **DEADP: Development Management**

An MMP must be included as part of the operational EMP.

### **DEADP: Waste Management**

Composting to take place on an impermeable surface.

If the operational area for wood chipping at the facility is greater than 1000m<sup>2</sup>, the chipping of wood will need to adhere to the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA) 'National Norms and Standards for the Sorting, Shredding, Grinding, Crushing, Screening or Baling of General Waste', as contained in Government Notice (GN) No. 1093 of 11 October 2017.

### **CapeNature**

Rehabilitation of all eroded areas and regular and ongoing control of invasive alien species is required across all properties and not just limited to the immediate area of the development footprint.

#### **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](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
A consent use zoning on Agriculture 1 is already in existence. The expansion area may need to be incorporated in to the existing approval.			
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, reuse.  The facility is in line with RC32 in terms of the recovery of recyclable items.			
(b) Urban edge / edge of <b>built environment</b> 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 <b>IDP and SDF</b> ?).	YES	NO	Please explain
The municipality has embarked on a vigorous Waste Minimization program to divert green waste and builders' rubble from the landfill site and a dedicated facility has been constructed for this purpose. Gibb consulting engineers has been appointed to conduct a conditional assessment on all main sewers in Drakenstein with the view of future planning and maintenance.  Green aztecas, however prone to vandalism, are placed throughout the municipal area as receptacles for glass. Additional receptacles for other recyclable commodities such as plastics, paper, cooking oil, electronic waste and motor oil are available at the Wellington drop-off area (Wellington landfill site, Interpace) and Material Recovery Facility (Paarl Refuse Transfer station, Distillery Street).  DP 40.12: Municipality to find alternative ways to divert waste from landfill, include recycling, waste minimisation and composting. <i>Yes. The municipality has a waste minimisation programme in place which includes certain wards</i>			



and schools.			
(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
In line with the EMF adopted for the area.			
(e) Any <b>other</b> 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.			
<p>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.</p> <p>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.</p> <p><b>*Draft National Standards for Organic Waste Composting (Notice 68 of 2014)</b></p> <p>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.</p> <p><b>* Waste Minimisation Guideline for Municipalities, 2015 (DEADP:WC)</b></p>			
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
A consent use zoning on Agriculture 1 is already in existence. The expansion area may need to be incorporated in to the existing approval.			
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.			
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
<p>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.</p> <p><u>Objective 9: Minimise consumption of scarce environmental resources – waste recycling</u></p> <p>A number of policies have been compiled under this objective relating to waste management, which reads as follows:</p> <p>RC32: All municipalities should follow an integrated hierarchical approach to waste management i.r.o. avoidance, reduction and reuse.</p> <p>The Municipality has included as part of their IDP the following objective:</p>			

DP 40.12: Municipality to find alternative ways to divert waste from landfill, include recycling, waste minimisation and composting. Yes. The municipality has a waste minimisation programme in place which includes certain wards and schools.			
6. Are the necessary <b>services</b> 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 <b>Appendix E</b> .)	YES	NO	Please explain
No services are required for the activity.			
7. Is this project provided for in the <b>infrastructure planning</b> 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 <b>Appendix E</b> .)	YES	NO	Please explain
No services are required for the activity.			
8. Is this project part of a <b>national programme</b> to address an issue of national concern or importance?	YES	NO	Please explain
South Africa takes the management of organic waste seriously and considers it a high priority waste. The Department of Environmental Affairs have developed a National Organic Waste Strategy with the intention to divert this waste from landfills and manage them more appropriately, through composting.			
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
A consent use zoning on Agriculture 1 is already in existence. The expansion area may need to be incorporated in to the existing approval.			
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 DWS is to be submitted. The effect of the activity on the watercourse is assessed as part of the application. Please refer to the stormwater management plan submitted in Appendix K with this report.			
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
Please refer to Section F parts 7 and 8 for details.			
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 <b>cumulative impacts</b> (positive and negative) of the proposed land use associated with the development proposal and associated listed activity(ies) applied for, be?			
<u>Positive impacts:</u> <ul style="list-style-type: none"> <li>• Waste Management solution for diverting organic waste from landfills;</li> <li>• The compost facility meets goals and objectives in terms of minimisation, recycling and reuse through the composting of abattoir by-products;</li> <li>• The compost facility provides a sustainably waste management alternative for the disposal of organic waste;</li> </ul> <u>Negative impacts:</u> See Section F.			
14. Is the development the <b>best practicable environmental option</b> for this land/site?	YES	NO	Please explain
A consent use zoning on Agriculture 1 is already in existence. The expansion area may need to be incorporated in to the existing approval.			

15. What will the benefits be to society in general and to the local communities?	Please explain
<p>The expansion of the facility would allow for the treatment of organic waste in excess of 10 tons but less than 100 tons. This would allow for more organic waste to be diverted from landfill to the composting facility. This will benefit the Municipality in decreasing the pressure on the already limited capacity available at the landfill sites that accepts this kind of waste in the Municipal region.</p> <p>Persons residing in the Municipality would be less inclined to illegally dump this kind of waste if a facility is available for the disposal thereof.</p>	
16. Any <b>other</b> need and desirability considerations related to the proposed development?	Please explain
No. See above.	
17. Describe how the <b>general objectives of Integrated Environmental Management</b> as set out in Section 23 of the NEMA have been taken into account:	
<ul style="list-style-type: none"> <li>• The general principles as set out in Section 2 of NEMA are implemented as described below in 18.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> </ul>	
18 Describe how the <b>principles of environmental management</b> as set out in Section 2 of the NEMA have been taken into account:	
<p>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.</p>	

## 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:

The proposal is for the expansion of an existing composting facility (currently operating under the threshold requiring authorisation in terms of NEMA and NEMWA). As such no location alternative adjacent to the existing activity that is reasonable and or feasible exists.

Please see below map indicating the current composting activity in relation to adjacent property:



The full map with legend can be found in Appendix D of the BAR.

The watercourse is located to the west of the existing facility. Private property is located south of the property which is also a CBA (see the biodiversity map in Appendix D). North of the property is a CB and north of that is agricultural property (crops of lettuce). The only reasonable and feasible expansion is to the east of the existing facility currently used for the cultivation of crops (lettuce).

- (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:

The proposal is for expansion of an existing compost facility currently operating under the thresholds in terms of NEMA and NEMWA requiring authorisation.

Diversion of organic waste from landfill and the alternative treatments thereof, such as composting reduces dependence on landfilling waste, as well as the associated risk of greenhouse gas emissions. It reduces the risk of methane and other gases impacting on the surrounding land, and reduces the risk of organic compounds and other contaminants possibly polluting groundwater. Recovery and processing of organics can produce beneficial soil amendments (such as composts and fertilizers) for improving South African soil profiles, increasing soil organic carbon levels, preventing soil erosion and reducing water demand for growing plants and crops.

The development of the National Waste Management Strategy (2011) was an important milestone in facilitating the implementation of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008). The National Waste Management Strategy promotes composting as one of the approaches towards achieving the objectives of the waste management hierarchy, amongst other measures. This National Organic Waste Composting Strategy (NOWCS) has been initiated by the Department of Environmental Affairs (DEA) with the aim to develop and promote the diversion of organic waste from landfill sites for soil beneficiation and other uses through composting.

It is with this motivation that no other activity alternative is considered in terms of this expansion proposal.

- (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:

The layout for the composting facility follows the generic guide towards deciding on a suitable layout for the composting facility. The layout is highly dependent on the compost process adopted, land use area, volume of feedstock and topography, etc.

In terms of the 3110: National Organic Waste Composting Strategy: Draft Guideline Document for Composting - the following must be taken into consideration in order to obtain a suitable layout for windrow composting facilities:

1. The exact layout of facility and location of the settling pond will depend on the shape and slope of the site.
2. Layout and levels to be such that the facility is free-draining throughout i.e. no ponding of leachate / runoff to occur on or around working areas.
3. Channels to be provided along downslope boundaries of site (and / or along other suitable alignments) to catch all leachate / runoff from the site and carry it to the settling / runoff collection pond. Erosion-protection to be provided in the form of grass-blocks, hand-packed stone lining, etc.
4. Settling / runoff collection pond to have a volumetric capacity of at least 0.01 m x site area, with a freeboard of 0.5m above this volume. Pond to have a durable multi-layer impermeable lining.
5. Overflow from the settling-pond (for e.g. during periods of high rainfall) to flow into stormwater inlet(s) leading to the municipal stormwater system (where applicable).
6. Outside stormwater to be prevented from flowing onto the site (including through the entrance gate) by means of soil berms. Erosion-protection to be provided to berm (and uphill face in particular) by means of vegetation, hand-packed stone facing, etc.

**The proposed layout conforms to the above guideline in the following ways:**



1. Both sites have an even grade of  $\pm 2\%$  from south east to north west and drains towards the two dams respectively. The unused portions of the land are covered in grass and a number of trees on Portion 54.
2. No geological investigation was carried out on site, but visual observations indicate that the general geology is made up of clayey material.
3. Stormwater runoff: The mean average rainfall for the area is  $\pm 555\text{mm}$  with an associated runoff volume of  $\pm 112\,000\text{m}^3$ . The two portions fall within a relatively small catchment area of  $\pm 18\text{ha}$  which drains to a natural, but currently dry, water course to the west. (Please see Appendix D2)
4. Runoff Management: Due to the nature of compost manufacturing and the potential pollution of water courses all runoff across the sites have to be retained on the properties. In order to limit the runoff to the dams a cut-off drain will be constructed on the southern boundary of Portion 53. Runoff from the adjacent property will then be intercepted and directed towards the watercourse described above. This will reduce the catchment area of stormwater crossing the properties to  $\pm 13\text{ha}$ . The existing two dams have a combined storage capacity of  $\pm 6600\text{m}^3$ . It is envisaged that the existing dams will be reshaped and the walls merged in order to create a single dam with a smaller footprint. This will provide more economical usage of the available land. (See Appendix D3) The proposed dam with a 3m high wall will have a capacity of  $\pm 13\,800\text{m}^3$  including a spare capacity of  $\pm 15\%$ . If the wall is raised to 3.5m the storage capacity will increase to  $\pm 15\,600\text{m}^3$  with a spare capacity of  $\pm 30\%$ . In order to manage the volume of water in the dam and to prevent overtopping the water will be used in the composting process. It can also be made available to the adjacent vegetable farm for irrigation purposes or carted away by tanker for the same purpose.
5. Portions 54 & 53 of Farm 716 fall within a relative small catchment area. The existing earth dams will be reconstructed to provide the required capacity to intercept and store stormwater runoff that crosses the two portions. Water collected in the dam will be used in the composting process and could also be made available to adjacent farms for irrigation purposes.
6. See elevation profiles of the proposed development area in relation to the layout requirements as indicated below:

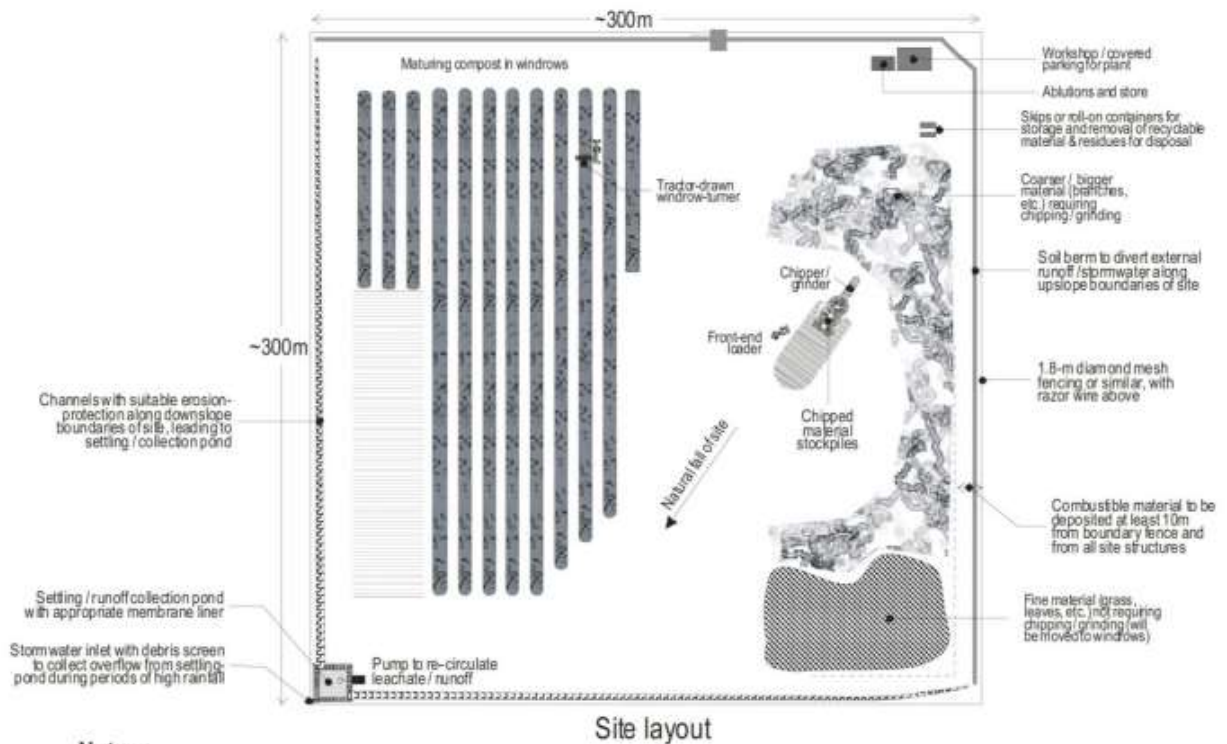




This clearly shows that the proposed design and layout conforms to the prescribed requirements in terms of the guideline.

The proposed layout of all the various operational areas of the composting facility such as the waste unloading and sorting, composting, maturing, sieving and bagging of the compost, including storage space for compost and recyclables has not been defined at this stage. However the layout would be in line with the typical layout as included in the 3110: National Organic Waste Composting Strategy:

## Processing facilities P2: Composting - small-scale windrows without screening Guideline Schematics



### Notes:

1. Exact layout of facility and location of settling pond will depend on shape and slope of site.
2. Layout and levels to be such that facility is free-draining throughout, i.e. no ponding of leachate / runoff to occur on or around working areas.
3. Channels to be provided along downslope boundaries of site (and / or along other suitable alignments) to catch all leachate / runoff from the site and carry it to the settling / runoff collection pond. Erosion-protection to be provided in the form of grass-blocks, hand-packed stone lining, etc.
4. Settling / runoff collection pond to have a volumetric capacity of at least 0.01m x site area, with a freeboard of 0.5m above this volume. Pond to have a durable multi-layer impermeable lining.
5. Overflow from settling-pond (for e.g. during periods of high rainfall) to flow into stormwater inlet(s) leading to the municipal stormwater system (where applicable).
6. Outside stormwater to be prevented from flowing onto the site (including through the entrance gate) by means of soil berms. Erosion-protection to be provided to berm (and uphill face in particular) by means of vegetation, hand-packed stone facing, etc.

Gauteng Department of Agriculture, Conservation and Environment 2009



- (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 involves the aerobic (in the presence of oxygen) decomposition of organic matter and although carbon dioxide is also produced during this decomposition process, no methane is produced. Composting of organic material is therefore environmentally more beneficial than sending the waste to landfill.

The following table provides a summary of composting technologies:

Issue/ criteria	Minimal Technology	Low Technology	Medium Technology	High Technology
<b>Examples of composting methods used at different levels of technology</b>	Static Piles (No air)	Compost bins or barrels, turned windrows, and vermicomposting (worm boxes or windrows)	Aerated static piles (forced aeration), turned windrows, drum-type composters, and mechanised "continuous flow" worm systems	Turned or agitated bays or beds (forced aeration), box-type in-vessel units (forced aeration), and "Dutch tunnels" (forced aeration)
<b>Potential input waste type</b>	Garden waste, wood waste, manures, food waste and fruit waste.	<b>Windrows:</b> Garden waste, wood waste, manures, fruit waste. <b>Vermicomposting:</b> Food and garden waste.	Mixed organics (food and garden waste) and possibly primary sewage sludge, manure, and in some cases (Aerated Static Pile systems {ASP}) animal waste (carcasses, abattoir waste, etc).	Mixed organics (food and garden waste) and possibly primary sewage sludge, manure and animal waste (carcasses, abattoir waste, etc).
<b>Output product</b>	Lower-grade Compost, soil conditioner	Compost, soil conditioner	Compost, soil conditioner of a high calorific value from the process.  Output product from ASP systems can be high-quality Bio-Organic Fertilizers (BOF) if treated with the right microbial and nutrient mixes.	High-quality & high-demand Compost, soil conditioner of a high calorific value from the process, biogas.  Output product from high-tech systems can be high-quality Bio-Organic Fertilizers (BOF) if treated with the right microbial and nutrient mixes.
<b>Capital costs</b>	Minimal	Low, depending on any structural requirements	Medium	High
<b>O&amp;M costs</b>	Minimal	Low	Medium	High

<b>Key process controls</b>	<p>Key control elements in the processing are: pH, oxygen, moisture content, temperature control, carbon: nitrogen ratio.</p> <p>Regarding moisture content: low technology processes may involve simple watering of windrows or piles, by hand. Larger volumes and / or higher-technologies would start using automated systems (sprinklers, etc). This is all dependent on climate and location of operations.</p> <p>The shape of the windrow and/ or pile also plays a key part in the control of moisture and other key elements.</p>			
<b>Plant (mechanical) Types</b>	Manual labour (if small operation) Front-end loader (bigger operations).	Grinder, loader, screen.	Grinder, loader, screen, blowers, compost turner, or other specialised compost system equipment.	Grinder, mixer, loader, screen, conveyor, blowers, compost bays, in-vessel unit and handling equipment or other specialised compost system equipment.
<b>Skill required for operation</b>	Generally more labour intensive per cubic metre of compost produced. Less skilled staff required.	As for "minimal technology" except may require more skilled personnel depending on size of operation.	Less manual labour, higher number of skilled personnel who also need to have specific knowledge of mechanical equipment	Extensive and specific, certain systems become automated
<b>Labour and/or employment opportunity (in relation to cubic metre of compost produced)</b>	The larger the pile, the larger the unskilled/ low-skilled workforce required	The larger the pile, the larger the unskilled/ low-skilled workforce required	Less manual labour, higher number of skilled personnel who also need to have specific knowledge of mechanical equipment.	Less than other processes

<p><b>Description of technologies</b></p>	<p>A compost pile provides the simplest form of composting. Starting at a minimum size of about one cubic metre to generate and retain heat, compost piles have been known to become quite large. Static piles have no forced aeration i.e. they use passive ventilation. The addition of water may be required if water content is not sufficient.</p>	<p><b>Windrow:</b> As the volume of materials being processed increases, it becomes prudent to make additional piles, often side-by-side, until you have created a long row. Hence, a “windrow” is an elongated compost pile, designed to allow for better air flow. Materials need to be physically turned in order to introduce air into the process. Turning can be manual, i.e. spades, or with the use of a compost ‘turning’ machine. The addition of water may be required if water content is not sufficient.</p> <p><b>Vermicomposting:</b> “Vermicomposting” refers to the controlled degradation, or composting, of organic wastes, primarily by earthworm consumption.</p> <p><b>Compost bins / barrels:</b> This refers to an aerated bin containing layers of carbons, kitchen scraps, garden waste and soil left to decompose.</p>	<p><b>Aerated static piles:</b> Includes the use of aeration systems to push or pull air through the piles (by applying a positive or negative pressure).</p> <p><b>Windrows:</b> As with the low technology windrows, bigger facilities require bigger turning machines to move the piles. If utilising a forced aeration system turning may not be necessary; however if passively ventilated, turning is required. The addition of water may be required if water content is not sufficient.</p> <p><b>Drum-type composting:</b> Cylindrical drums are sometimes chosen as part of a composting system for their ability to mix and tumble, and thus aerate, composting materials, like clothes in a tumble dryer.</p> <p><b>Mechanised “continuous flow” worm systems:</b> An enclosed horizontal reactor is about 2 to 3 metres high, feeds in the compost at one end and out at the other end. It may use pressure or vacuum-induced aeration, which is set in the floor of the reactor.</p>	<p><b>Agitated bays:</b> Agitated bay composting reactors are long concrete channels or bays with an aerated perforated floor and rails on top of the walls. Aeration is provided in multiple zones along the length of the bays. Each zone is aerated by a dedicated blower located in the aisles along the side of the channels. The blowers are controlled based on temperature readings from sensors for each zone in the bays, and by a baseline timer. A mechanical agitator rides on rails along the sides of the bays to mix and ‘fluff’ the decomposing material on a daily schedule. The agitators are designed so they gradually move the compost from the start of the bay to the finish.</p> <p><b>“In-vessel” composting:</b> Involves composting in enclosed structures or containers. Being enclosed, these systems offer a high level of odour, nuisance, pest, and leachate control. Exhaust air from these systems is typically treated in a bio-filter.</p> <p><b>Box-type in-vessel units (forced aeration):</b> Because many in-vessel systems are “batch” processes, meaning you compost a boxful at a time, facilities often find they require the use of two or preferably three units.</p>
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				<p><b>“Dutch tunnels” (forced aeration):</b> Involves a closed metal container. This composting process refers to a static biological process with forced aeration. The principle applies air as the only medium to control the decomposition process. Historically, this process is used or processing animal manure and compost for growing mushrooms.</p>
<b>Municipal function (Dependent on private sector)</b>	Could be simply operated and managed by a municipality.	Could be simply operated and managed by a municipality.	Possibly operated by a Municipality, but possibly requires private-sector involvement and possibly private-sector maintenance.	Predominantly private sector technology and skill.
<b>Advantages</b>	Comparatively inexpensive. Assuming that the piles are turned every few weeks, relatively few days per year of equipment (typically front-end loader) operation is required.	<ul style="list-style-type: none"> <li>1) moderate cost;</li> <li>2) labour intensive;</li> <li>3) ability to use a front-end loader and other generic types of equipment; generally satisfactory quality and marketability of the final product ; and</li> <li>4) Limited control of the process.</li> </ul>	<ul style="list-style-type: none"> <li>1) a large volume of organic material can be composted quickly with less labour;</li> <li>2) improved odour control; and</li> <li>3) the quality of the end product can be controlled better. The labour savings can be significant. A major guide to farm composting found that the rates for turning compost with a bucket or front end</li> </ul>	<ul style="list-style-type: none"> <li>1) An advantage of these systems is the containment they provide. Another is their turnkey nature i.e. a complete set-up that is ready for immediate use; and</li> <li>2) High control of the process.</li> </ul>

			loader ranged from 45 to 100 cubic metres (m3) per hour. With a small windrow turner, turning rates were increased to about 760 m3 per hour. 4) Some control of the process.	
<b>Disadvantages</b>	1) More space is required than for other methods. Preference for a remote site, which can result in higher transportation or handling costs. It is also difficult to maintain high-rate or "hot" compost conditions, so the compost products from minimal-tech methods will likely be lower in quality. They will also be coarser, and when screened will have a larger oversize fraction. 2) Less control over issues such as odour, dust, leachate, water contamination, vectors, pests, litter, noise and fire.	1) More difficult to achieve consistent results; and 2) Potential for odours.	1) The comparatively high capital investment in the facility, equipment and training; and 2) The cost of operation and maintenance of specialized and often complex equipment.	Possible disadvantages include cost. Another factor worth remembering is that although these "boxes" take up little space, the compost they produce may require additional curing after coming out of the box, which means additional space next to the box or in another location.
<b>Space</b>	Can be space intensive	Can be space intensive	Reduced space requirements	Very space efficient
<b>Buffer Zones</b>	450 metres+	50-150 metres	50-150 metres	50-150 metres
<b>Aeration</b>	Passive	Passive	Forced	Forced
<b>Temperature control</b>	No	Preferable	Yes	Yes
<b>Cover</b>	Outside	Mostly outside	Sometimes with floating cover, under roof, or inside building	Enclosed system or inside building
<b>Risk Control</b>	Limited control, therefore potentially higher negative impact.	Low-level of control, less negative impact compared to "minimal technology".	Good control, more emphasis on prevention, sometimes uses odour control systems.	Excellent control, emphasis on prevention and control using biological controls.
<b>Electronic or Computer Controllers</b>	Manual monitoring	Manual monitoring	Sometimes, mostly for monitoring purposes	Yes, for monitoring and process control
<b>Time Period</b>	18-24 months	9-12 months	4-6 months	<6 months (and at times as short as 3 weeks)
<b>Product Quality</b>	Poorer	Fair	Good	Good

**\*Source: 3110: National Organic Waste Composting Strategy: Draft Guideline Document for Composting. 2013**

The EXISTING composting facility conducts Low Technology composting using the turned windrow method in terms of the following:

- Current extent of the composting area (in hectares or m<sup>2</sup>):  
+/- 1.36ha currently being used
- Tonnage of compost produced (per month / annum):  
Figures are based on sales for the period from Jan 2018 – Jan 2019
  - Chicken manure: 1,267 m<sup>3</sup>/month
  - Compost: 538 m<sup>3</sup>/month
  - Waste Manure: 426 m<sup>3</sup>/month

The preferred technology alternative for the EXPANSION is composting using the turned windrow method (Medium Technology). The reasons as why this is the best practical and reasonable technology alternative are as follows:

- The facility would be considered to fall in the category: Medium Technology – the facility intends to accept mixed compostable organic waste including but not limited to primary sewage sludge, manure, and in some cases animal waste (carcasses, abattoir waste, etc).
- Low capital costs
- Low operational and maintenance costs
- Unskilled labour required (dependant on size of compost pile)
- Skilled labour required - dependant on size of the compost pile
- Windrow turning can be done manually (workforce) or by machine
- Produces fair to good product (based on inputs)

Based on the above investigation and summary **NONE** of the other technology alternatives would be reasonable and feasible in terms of this application. As such no alternative other than the preferred alternative and the no-go option will be assessed in Section F of this report.

- (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:

Operational activities relating to the management of a successful composting facility is guided by best practice techniques. This is largely driven through minimising the potential environmental and social impacts generated as a direct result of the facilities operations.

Poor environmental management of composting and related organics processing facilities can typically result in one or more of the following environmental problems:

- air quality impacts, namely odours and particulate matter,
- potential hazards, such as fire and explosions,
- water and soil pollution,
- the presence of vermin in excessive numbers,
- excessive levels of noise from equipment (such as shredders and traffic),
- wind-blown litter,
- nuisances arising from particulate matter from delivery trucks and earthmoving equipment, and
- production of contaminated organic products.

This is mitigated through the implementation of best practice techniques as well as through the applicable environmental legislation and authorisations that may be required for the operation of the facility. It is through these processes that operational controls to minimise the negative effects of the activities associated with the proposal.

The operational EMP in Appendix H will provide the management framework to mitigate negative impacts as a result of the activity.

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

The no-go option would result in the current composting activities to continue operating under the existing thresholds.

By not approving the proposed expansion would result in organic waste being sent to landfill. This is not in line with the Municipalities Integrated Waste Management Plan which encourages the diversion of waste from landfills through processes such as composting. The no-go option would not respond to the National stance as manifested in the National Waste Management Strategy (2011) nor the National Organic Waste Composting Strategy (2013). The National Waste Management Strategy promotes composting as one of the approaches towards achieving the objectives of the waste management hierarchy, amongst other measures. This National Organic Waste Composting Strategy (NOWCS) has been initiated by the Department of Environmental Affairs (DEA) with the aim to develop and promote the diversion of organic waste from landfill sites for soil beneficiation and other uses through composting.

- (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 alternative:** The proposal is for the expansion of an existing composting facility (currently operating under the threshold requiring authorisation in terms of NEMA and NEMWA). As such no location alternative adjacent to the existing activity that is reasonable and or feasible exists.

**Activity alternative:** The proposal is for expansion of an existing compost facility currently operating under the thresholds in terms of NEMA and NEMWA requiring authorisation. As such no other reasonable or feasible activity alternative exists for the proposed activity.

**Layout alternative:** The layout for the composting facility follows the generic guide towards deciding on a suitable layout for the composting facility. The layout is highly dependent on the compost

process adopted, land use area, volume of feedstock and topography, etc. The proposed layout of all the various operational areas of the composting facility such as the waste unloading and sorting, composting, maturing, sieving and bagging of the compost, including storage space for compost and recyclables has not been defined at this stage. However, the layout would be in line with the typical layout as included in the 3110: National Organic Waste Composting Strategy: Draft Guideline Document for Composting.

**Technology alternative:** Composting involves the aerobic (in the presence of oxygen) decomposition of organic matter and although carbon dioxide is also produced during this decomposition process, no methane is produced. Composting of organic material is therefore environmentally more beneficial than sending the waste to landfill. The preferred technology alternative for the **EXPANSION** is composting using the turned windrow method (Medium Technology). The reasons as why this is the best practical and reasonable technology alternative are as follows:

- The facility would be considered to fall in the category: Medium Technology – the facility intends to accept mixed compostable organic waste including but not limited to primary sewage sludge, manure, and in some cases animal waste (carcasses, abattoir waste, etc).
- Low capital costs
- Low operational and maintenance costs
- Unskilled labour required (dependant on size of compost pile)
- Skilled labour required - dependant on size of the compost pile
- Windrow turning can be done manually (workforce) or by machine
- Produces fair to good product (based on inputs)

Based on the above investigation and summary **NONE** of the other technology alternatives would be reasonable and feasible in terms of this application. As such no alternative other than the preferred alternative and the no-go option will be assessed in Section F of this report.

**Operational alternative:** Operational activities relating to the management of a successful composting facility is guided by best practice techniques. This is largely driven through minimising the potential environmental and social impacts generated as a direct result of the facilities operations.

Poor environmental management of composting and related organics processing facilities can typically result in one or more of the following environmental problems:

- air quality impacts, namely odours and particulate matter,
- potential hazards, such as fire and explosions,
- water and soil pollution,
- the presence of vermin in excessive numbers,
- excessive levels of noise from equipment (such as shredders and traffic),
- wind-blown litter,
- nuisances arising from particulate matter from delivery trucks and earthmoving equipment, and
- production of contaminated organic products.

This is mitigated through the implementation of best practice techniques as well as through the applicable environmental legislation and authorisations that may be required for the operation of the facility. It is through these processes that operational controls to minimise the negative effects of the activities associated with the proposal.

The operational EMP in Appendix H will provide the management framework to mitigate negative impacts as a result of the activity.

**No-Go option:** The no-go option would result in the current composting activities to continue operating under the existing thresholds.

By not approving the proposed expansion would result in organic waste being sent to landfill. This is not in line with the Municipalities Integrated Waste Management Plan which encourages the diversion of waste from landfills through processes such as composting. The no-go option would not



respond to the National stance as manifested in the National Waste Management Strategy (2011) nor the National Organic Waste Composting Strategy (2013). The National Waste Management Strategy promotes composting as one of the approaches towards achieving the objectives of the waste management hierarchy, amongst other measures. This National Organic Waste Composting Strategy (NOWCS) has been initiated by the Department of Environmental Affairs (DEA) with the aim to develop and promote the diversion of organic waste from landfill sites for soil beneficiation and other uses through composting.

- (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:

The proposal is for the expansion of an **existing** Compost Facility using the method of turned windrows to produce compost. Based on the alternatives considered above it is clear that the locality, activity, layout, technology and operation as proposed is the best reasonable and feasible alternative. The alternatives investigated specifically regarding activity and technology in the relevant sections above is not feasible or viable in this instance and therefore should not be considered.

## 7. PREFERRED ALTERNATIVE

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

The preferred and only alternative to be considered (other than the no-go option) is as follows:

The proposed activity is for the expansion and licensing of a compost facility to recycle and treat organic waste to produce compost on approximately 4.7ha.

### **Composting activity:**

Composting of organic waste is done using the turned windrow method. It is proposed to expand the existing footprint of the composting activity by 3ha; this would allow the facility to treat general and organic waste with a capacity in excess of 10 tons but less than 100 tons.

The facility will be expanded to accept mixed compostable organic waste for composting by turned windrow method. The facility intends to accept approximately 200m<sup>3</sup> of organic waste per day which would equate to 4000m<sup>3</sup> of compostable organic waste to be accepted per month.

Please take note that for the purpose of this report "**compostable organic waste**" is defined as: A carbon-based material of animal or plant origin (that is defined as waste in terms of the South African gazetted National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008:)) that naturally enhances fertility of soil through a natural degradation process but excludes human made organic chemicals and naturally occurring organic chemicals which have been refined or concentrated by human activity.

"Organic Waste" will generally comprise materials that can be accepted for disposal at a licensed municipal general waste landfill facility (i.e. excludes infectious, poisonous, health-care and hazardous organic wastes)".

**National Organic Waste Composting Strategy, 2013.**

### **Stormwater management:**

#### Current dams capacity:

The **existing** two dams (located on Portions 54 and 56 respectively) have a combined storage capacity of ±6600m<sup>3</sup>.

#### Proposed dam and capacity:

It is envisaged that the existing dams will be reshaped, and the walls merged in order to create a single dam with a smaller footprint. This will provide more economical usage of the available land.

- The proposed dam with a 3m high wall will have a capacity of ±13 800m<sup>3</sup> including a spare capacity of ±15%.
- If the wall is raised to 3.5m the storage capacity will increase to ±15 600m<sup>3</sup> with a spare capacity of ±30%.

In order to limit the runoff to the dams a cut-off drain will be constructed on the southern boundary of Portion 56. Runoff from the adjacent property will then be intercepted and directed towards the watercourse described above. This will reduce the catchment area of stormwater crossing the properties to ±13ha.

**\*Refer to the Stormwater Management Plan in Appendix K2 for details.**

## 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 sites have an even grade of ± 2 % from south east to north west and drains towards the two dams respectively. The unused portions of the land are covered in grass and a number of trees on Portion 54. No geological investigation was carried out on site, but visual observations indicate that the general geology is made up of clayey material.

(b) Ecological aspects:

<p>Will the proposed development and its alternatives have an impact on CBAs or ESAs? If yes, please explain: Also include a description of how the proposed development will influence the quantitative values (hectares/percentage) of the categories on the CBA/ESA map.</p>	YES	NO
<p>The existing earthen dams located on portion 54 and 56 respectively has been classified as follows in terms of the western cape biodiversity spatial plan 2017: Feature: River, Wetland, Watercourse Category 1: ESA2: Restore from other land use</p> <p>Northern half of portion 54 is classified as a CBA: Terrestrial. The CBA makes up 13.2% of the proposed development area and consists predominantly of grass and a clustering of trees.</p> <p>According to the western cape biodiversity spatial plan 2017 the ecosystems usually found within this region can be made up of Swartland Alluvium Fynbos, Swartland Granite Renosterveld, Swartland Silcrete Renosterveld or a combination thereof. Based on the vegetation left on site (grasses area and clustering of trees) it is not likely that what is present on site would be of significant value in preserving the ecosystem.</p>		
<p>Will the proposed development and its alternatives have an impact on terrestrial vegetation, or aquatic ecosystems (wetlands, estuaries or the coastline)? If yes, please explain:</p>	YES	NO
<p>The existing earthen dam located in the north western corner of portion 716/54 is identified as an artificial wetland <sup>2</sup>.</p> <p>A non-perennial tributary of the Klappmuts river runs adjacent to the western boundary of portions 716/54 and 716/56.</p> <p>13.2% of the proposed development has the following Ecosystems Threat Status Name: Swartland Alluvium Fynbos Status 2016: CR Status 2014: Critically Endangered (CR) Status 2011: CR</p> <p>The existing earthen dams located on portion 54 and 56 respectively has been classified as follows in</p>		

<sup>2</sup> This layer codes Wetland Freshwater Priority Areas (FEPAs), wetland ecosystem types and wetland condition on a national scale. The delineations were based largely on remotely-sensed imagery and therefore did not include historic wetlands lost through drainage, ploughing and concreting. Irreversible loss of wetlands is expected to be high in some areas, such as urban centres. In addition, there are many gaps in wetlands as remote sensing does not detect all wetlands. **[Source: CapeFarmMapper (23/05/2018 <https://gis.elsenburg.com/apps/ctm/#>)]**

terms of the western cape biodiversity spatial plan 2017:

Feature: River, Wetland, Watercourse

Category 1: ESA2: Restore from other land use

It is not the intention for the proposed development to negatively impact on the existing functioning of these two earthen dams. It is proposed that the two dams be consolidated into one dam and that a 3m earthen dam wall be erected on the dam's western boundary. This will allow for sufficient capacity within the dam for the stormwater runoff from the properties and the activities proposed to be conducted on these properties. The dam is expected to have a combined capacity of approximately 13800m<sup>3</sup> sufficient for a catchment of 13ha with the implementation of the cut-off drain established on the southern boundary of portion 53 to limit runoff on the property from adjacent properties.

Northern half of portion 54 is classified as a CBA: Terrestrial. The CBA makes up 13.2% of the proposed development area and consists predominantly of grass and a clustering of trees. The CBA falls within an ecosystem which historically consists of Swartland Alluvium Fynbos (CR). It is however not likely that this classification is consistent with the current vegetation (grass and clustering of trees) on the property. The conservation / biodiversity significance of the vegetation present is considered to be low.

A site visit was again conducted on 16 February 2019. This is not the correct time of the year to do a botanical survey, but taking in consideration the status of the area, the time of year is deemed appropriate to do a survey. There is no natural vegetation present on the site. The area is disturbed with heaps of soil and overgrown with (Kikuyu grass) *Pennisetum clandestinum*. It is clear in the pictures below that the area is transformed and disturbed with no remnants of natural vegetation or ecological functioning left on the mapped CBA areas. The site survey and assessment revealed that the proposed area does not qualify as a CBA area and that it was incorrectly mapped as a CBA due to current status of the area.





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?  
If yes, please explain:

YES	NO
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A site visit was again conducted on 16 February 2019. This is not the correct time of the year to do a botanical survey, but taking in consideration the status of the area, the time of year is deemed appropriate to do a survey. There is no natural vegetation present on the site. The area is disturbed with heaps of soil and overgrown with (Kikuyu grass) *Pennisetum clandestinum*. It is clear in the pictures below that the area is transformed and disturbed with no remnants of natural vegetation or ecological functioning left on the mapped CBA areas. The site survey and assessment revealed that the proposed area does not qualify as a CBA area and that it was incorrectly mapped as a CBA due to current status of the area.







Describe the manner in which any other biological aspects will be impacted:

Impacts on biological aspects are not considered to be significant if strict adherence to the EMPr is implemented.

Will the proposed development also trigger section 63 of the NEM: ICMA? YES NO

If yes, describe the following:

- (i) the extent to which the applicant has in the past complied with similar authorisations;
- (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;
- (iii) the estuarine management plans, coastal management programmes, coastal management lines and coastal management objectives applicable in the area;
- (iv) the likely socio-economic impact if the listed activity is authorised or is not authorised;
- (v) the likely impact of coastal environmental processes on the proposed development;
- (vi) whether the development proposal or listed activity—
  - (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;
  - (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;
  - (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;
  - (d) is likely to cause irreversible or long-lasting adverse effects to any aspect of the coastal environment that cannot satisfactorily be mitigated;
  - (e) is likely to be significantly damaged or prejudiced by dynamic coastal processes;
  - (f) would substantially prejudice the achievement of any coastal management objective; or
  - (g) would be contrary to the interests of the whole community;
- (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;
- (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
- (ix) the objects of NEM: ICMA, where applicable.

NA

(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?	Unknown			
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?	Unknown			
What percentage of this will accrue to previously disadvantaged individuals?	Unknown			
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:				
<p>The table below provides an indicative value of common costs associated with operating a composting facility. As there are a variety of composting processes available, the list will not be complete in all respects. The rates below are from current Construction Contracts in an urban area being undertaken during 2013. Some rates have also been obtained from the Contractors Plant Hire Association (CPHA) website<sup>32</sup>. Rates used have been applied to a 9-hour working day and 20 working-day month.</p>				
		Unit	Costs	Comment
Layout	Skilled	Per hour	R 139	Typical Contractor rates
	Unskilled	Per hour	R 19	Typical Contractor rates
	Manager	Per hour	R 245	Typical Contractor rates
Plant	Bakkie	Per hour, hire	R 56	Rent from a Contractor
	Tipper Truck (10m3)	Per hour, hire	R 254	From CPHA database
	Low Bed Truck	Per hour, hire	R 397	From CPHA database
	Crane Lift Truck (4-6 ton)	Per hour, hire	R 278	From CPHA database
	Tractor (4-6 ton)	Per hour, hire	R 123	From CPHA database
	Compost Turner	Per hour, hire	R 500	From CPHA database
	Excavator (20 ton)	Per hour, hire	R 331	From CPHA database
	Skidsteer loader (Bobcat)	Per hour, hire	R 142	From CPHA database
	Chipper	Per hour, hire	R 150	From CPHA database
	Compressor (175 cfm)	Per hour, hire	R 53	From CPHA database
	Air hoses (30m x 20mm)	Per hour, hire	R 9	From CPHA database
	Waste Bins (numerous)	Per hour, hire for all	R 250	From CPHA database
Materials	Kraal Manure	Typical monthly cost	R 9,000	Estimated rate *
	Plastic Bags	Typical monthly cost	R 25,000	Estimated rate *
	Fertiliser	Typical monthly cost	R 5,000	Estimated rate *
Sundries	Fuel	per litre	R 12 **	
	Communications	Typical monthly cost	R 5,000	Estimated rate *
	Rent	Typical monthly cost	R 10,000	Estimated rate *
	Electricity	Typical monthly cost	R 5,000	Estimated rate *
	Water	Typical monthly cost	R 5,000	Estimated rate *
	Maintenance	Typical monthly cost	R 20,000	Estimated rate *
	Marketing	Typical monthly cost	R 5,000	
	Site Office Container	Typical monthly cost	R 2,000	Estimated rate *
Toilets to rent	Typical monthly cost	R 3,000	Estimated rate *	

**\*Source: 3110: National Organic Waste Composting Strategy: Draft Guideline Document for Composting. 2014**

(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.

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 and Heritage Western Cape must be notified without delay.

**\*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?	0m <sup>3</sup>	

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 <sup>3</sup>	

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.

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 <sup>3</sup>	

Some builder's rubble may be generated during the consolidation of the two earthen dams and the construction of the stormwater cut-off channels. 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.

If no, where and how will the waste be treated / disposed of? Please explain. Indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per phase of the proposed development to be treated/disposed of?	m <sup>3</sup>	
--	----------------	--

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.

Has the municipality or relevant authority confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal? If yes, provide written confirmation from the municipality or relevant authority. <b>NA</b>	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? <b>NA</b>	YES	NO
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If yes, has this facility confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal? Provide written confirmation from the facility. <b>NA</b>	YES	NO
---	-----	----

Does the facility have an operating license? (If yes, please attach a copy of the licence.) <b>NA</b>	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.

### (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 <sup>3</sup>	

Describe the emissions in terms of type and concentration and how these will be avoided/managed/treated/mitigated:
Possible odorous emissions associated with the biological decomposition process of organic waste to produce compost may be emitted. The compost facility will operate in terms of best practice measures intend to minimise or avoid offensive odours.

Hydrogen sulphide and ammonia as gaseous emissions, which could be associated with the activity and might negatively affect the receptor community and the environment. In order to ensure the above-mentioned odorous emissions from this proposed activity is not harmful to the health and well-being of people, passive fence line monitoring for these pollutants may be required by the relevant authority.

The National Ambient Air Quality Standards in terms of Section 9(1) of the Air Quality Act as promulgated in the Government Notice 1210 of 2009 does not make provision for limit values as odour indicators, aimed to reduce the detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage. Although South Africa do not have guidelines for controlling and managing odours, various odour thresholds and guidelines have been published internationally in the determination of the odour impact

The applicant must follow best available techniques (BAT) to avoid offensive odours at the compost facility.

### 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
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**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:	0	m <sup>3</sup>
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(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.		

(d) Describe the measures that will be taken to reduce water demand, and measures to reuse or recycle water:
Runoff from the premises is to be collected in the proposed retention dam. This water will be used in the manufacturing of compost. Excess water available can be made available to adjacent farmers for irrigating of crops.

### 4. POWER SUPPLY

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

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

NA
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### 5. ENERGY EFFICIENCY

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

<p>Although not much electricity is required for the composting process the facility must where reasonably possible implement the following energy saving initiatives:</p> <ul style="list-style-type: none"> <li>• The use of energy saving lighting such as low voltage or compact fluorescent lights must be used for the lighting of the facility instead of incandescent globes.</li> <li>• Solar heating instead of energy driven heat sources to be used where practical and necessary.</li> <li>• Employees working at the facility must be made aware of energy saving tips and habits to avoid wastage.</li> </ul>
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(b) Describe how alternative energy sources have been taken into account or been built into the design of the project, if any:

The composting activity will not require electricity. However electricity used at the facility must be done in a conservative fashion through the implementation of the above design measures where reasonably practical to do so.

## 6. TRANSPORT, TRAFFIC AND ACCESS

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

The existing composting facility and proposed expansion area is located approximately 3km northwest of Klapmuts off Divisional Road 1104, access to the site is obtained on Minor Road 5241 (See locality map in Appendix A1). It is expected that as a result of the expansion of the composting facility the existing traffic on Divisional Road 1104 and Minor Road 5241 is expected to slightly increase as the facility would require more deliveries of organic waste, bulking agents and the transporting of finished product from the facility.

The impact of the slight increase in traffic could result in additional dust, noise and congestion on and adjacent to the two roads. This can be mitigated by the implementation of a delivery schedule, limiting speed on these roads, ensuring that deliveries are only conducted during normal working hours and days.

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

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

### **Noise:**

Noise can be generated from the delivery of products to or from the facility. This can be mitigated through the implementation of a delivery schedule to ensure that deliveries are only conducted during normal working hours and days.

Noise can also be generated through operational activities associated with the composting process. Vehicles and machinery such as front loaders / digger-loaders / chipping machine may be some of the machinery used at the facility for the forming of windrows, turning of windrows or for the chipping of wood to be used as bulking agents during the composting process. This can be mitigated through the restriction of operating hours of the facility to ensure that excessive noise outside of normal operating hours is not generated.

### **Odour:**

Possible odorous emissions associated with the biological decomposition process of organic waste to produce compost may be emitted. The compost facility will operate in terms of best practice measures intend to minimise or avoid offensive odours.

Hydrogen sulphide and ammonia as gaseous emissions, which could be associated with the activity and might negatively affect the receptor community and the environment. In order to ensure the above-mentioned odorous emissions from this proposed activity is not harmful to the health and well-being of people, passive fence line monitoring for these pollutants may be required by the relevant authority.

The National Ambient Air Quality Standards in terms of Section 9(1) of the Air Quality Act as promulgated in the Government Notice 1210 of 2009 does not make provision for limit values as odour indicators, aimed to reduce the detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage. Although South Africa do not have guidelines for controlling and managing odours, various odour thresholds and guidelines have been published internationally in the determination of the odour impact

The applicant must follow best available techniques (BAT) to avoid offensive odours at the compost

facility.

**Exhaust Emissions:**

Excessive exhaust emissions may be generated from vehicles and the operation of machinery. This can be mitigated by attaching emission filters onto the vehicles / equipment.

**Dust:**

Dust may be generated by vehicle movement, exposed soils and during storage, shredding, mixing, and screening of compost. This is mitigated by covering dusty materials; applying a light water spray over the dry materials; paving of all operating, storage, unloading and loading areas; and revegetating exposed soils.

**Bio-aerosols:**

Bio-aerosols are organisms which can enter the ambient air during the movement and agitation of materials. This is mitigated through the paving of all operating, storage, unloading and loading areas; applying a light water spray over the dry materials; windbreaks around the facility/windrows; and suction sweeping of areas.

**Pests:**

Rodents, flies, birds, and other wildlife naturally occurring in the vicinity may be attracted to the area as a result of the activities conducted at the facility. This is mitigated through good housekeeping, covering of the compost piles timeously and removing any residual waste promptly.

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

**8. OTHER**

**Surface Water:**

Leachate generation from the processing of compost. This is mitigated by keeping contaminated stormwater and leachate separate from clean stormwater; minimising, containing and re-using contaminated stormwater and leachate so there is no discharge of contaminated wastewater from the premises; avoid run-off from feedstock or compost material.

Sediments and suspended solids. This is mitigated through the revegetation of exposed soils; reducing runoff volume and velocity; avoiding run-off from feedstock, compost material, exposed soil; and good housekeeping.

**Ground Water:**

Leachates from the processing of compost. This can be mitigated by storing feedstock and compost on bunded and hard foundation, where practical to minimise groundwater intrusion.

**Soil contamination:**

Leachate allowed to infiltrate through the ground. This is controlled through reducing leachate infiltration; storing feedstock and compost on bunded and hard foundation, where practical to minimise groundwater intrusion.

**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 Affairs 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
<b>Extent (E)</b>	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
<b>Duration (D)</b>	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
<b>Magnitude (M)</b>	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
<b>Probability (P)</b> 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
<b>Significance (S)</b>	Determined through a synthesis of the characteristics described above: <b>S = (E+D+M) x P</b> Significance can be assessed as low, medium or high		
	<b>Low: &lt; 30 points:</b> The impact would not have a direct influence on the decision to develop in the area		
<b>Medium: 30 – 60 points:</b> The impact could influence the decision to develop in the area unless it is effectively mitigated			
<b>High: &lt; 60 points:</b> The impact must have an influence on the decision process to develop in the area			
<b>No significance</b> When no impact will occur or the impact will not affect the environment			
<b>Status</b>	Positive (+)   Negative (-)		
<b>The degree to which the impact can be reversed</b>	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
<b>The degree to which the impact may cause irreplaceable loss of resources</b>	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.
<b>The degree to which the impact can be mitigated</b>	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 mitigatability
	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 Applicant, Planner (CK Rumbol), Engineers (EFG Engineers (Pty) Ltd) and as collected by the EAP during site surveys, desktop studies, literature review etc. has been used by the planning team to inform the current development proposal.

## 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 1:	<p>Surface and Groundwater Pollution: Surface Water Contamination          Surface and Groundwater Pollution: Ground Water Contamination          Surface and Groundwater Pollution: Soil Contamination          Emissions and Air Quality: Odour          Emissions and Air Quality: Exhaust Emissions          Emissions and Air Quality: Dust          Emissions and Air Quality: Bio-aerosols          Compaction of Soil          Increase in Storm Water / Waste Water Run-Off.          Ecological and Biological: Impact on Fauna          Ecological and Biological: Impact on Sensitive Environments (Rivers, Wetlands Etc)          Socio-Economic: Traffic Impacts          Socio-Economic: Noise          Socio-Economic: Flies          Socio-Economic: Odours          Socio-Economic: Tourism          Heritage and Cultural Historic: Impact on Archaeological etc.          Heritage and Cultural Historic: Visual / Sense of Place</p>
No-go Alternative:	<p>The No-Go option will result in the site remaining as is presently.          Socio-economic - Increased waste to landfill</p>

(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).

### **SEE IMPACT TABLES INCLUDED AS APPENDIX J**

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

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

The proposal is for the expansion of an **existing** Compost Facility using the method of turned windrows to produce compost. Based on the alternatives considered above it is clear that the locality, activity, layout, technology and operation as proposed is the best reasonable and feasible alternative. The alternatives investigated specifically regarding activity and technology in the

relevant sections above is not feasible or viable in this instance and therefore should not be considered.

As such only the proposed alternative has been assessed in terms of the tables provided in Appendix J.

(d) Outcome of the site selection matrix.

The preferred and only alternative to be considered (other than the no-go option) is as follows:

The proposed activity is for the expansion and licensing of a compost facility to recycle and treat organic waste to produce compost on approximately 4.7ha.

**Composting activity:**

Composting of organic waste is done using the turned windrow method. It is proposed to expand the existing footprint of the composting activity by 3ha; this would allow the facility to treat organic waste with a capacity in excess of 10 tons but less than 100 tons.

**Stormwater management:**

The existing two dams (located on Portions 54 and 56 respectively) have a combined storage capacity of ±6600m³. It is envisaged that the existing dams will be reshaped, and the walls merged in order to create a single dam with a smaller footprint. This will provide more economical usage of the available land. The proposed dam with a 3m high wall will have a capacity of ±13 800m³ including a spare capacity of ±15%. If the wall is raised to 3.5m the storage capacity will increase to ±15 600m³ with a spare capacity of ±30%.

In order to limit the runoff to the dams a cut-off drain will be constructed on the southern boundary of Portion 56. Runoff from the adjacent property will then be intercepted and directed towards the watercourse described above. This will reduce the catchment area of stormwater crossing the properties to ±13ha.

**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.

**WATER USE AUTHORIZATION APPLICATION - RISK MATRIX  
N.W. Hanekom – Eco Impact Legal Consulting (Pty) Ltd**

**Summary of Risk Assessment outcomes**

No.	Risk Rating	Confidence level	Control measures	Borderline LOW – MODERATE Rating Classes	PES and EIS of Watercourses
1	21 Low	90%	Refer to the EMP included in the EIA process	Low and unchanged	Refer to above in report
2	21 Low	90%	Refer to the EMP included in the EIA process	Low and unchanged	Refer to above in report

**Recommendations in Terms of Water Use Application Requirements**

The overall risk rating of potential Impacts on the applicable river after mitigation is rated as low negative. It is recommended that a GA being issued for the proposed water use.

**\*Refer to appendix G1.**

**Geotechnical Site Investigation**  
**Portion 54&56 Groenfontein Annex No 716, Klappmuts**  
**Prepared by: J C Engelbrecht (Pr Eng)**

**Conclusions:**

From an inspection of the proposed site, some of the topsoil and most of the vegetation has already been removed, and in the largest part of the site the gravelly sand on top varies from about 100 mm to 400 mm thickness. The area is fairly homogeneous with the firm to stiff weathered shale (sandy clayey silt) below the topsoil. The shale has a very low permeability as seen from the test results. There is a layer of fill material present in the vicinity of TH 7 as well as some stockpiled material.

**\*Refer to appendix G2.**

**4. ENVIRONMENTAL IMPACT STATEMENT**

Provide an environmental impact statement of the following:

(i) A summary of the key findings of the EIA.		
<b>Positive:</b>		
<ul style="list-style-type: none"> <li>• Expansion of an existing composting facility;</li> <li>• Diversion of organic waste from landfill;</li> <li>• Job creation;</li> </ul>		
<b>Negative:</b>		
<ul style="list-style-type: none"> <li>• Nuisance - noise, traffic, odours, tourism, pests</li> <li>• Emissions - dust, bio-aerosols, odours, exhaust emissions</li> <li>• Surface water pollution</li> <li>• Ground water pollution</li> <li>• Soil pollution</li> <li>• Stormwater/waste water runoff</li> <li>• Compaction of Soil</li> </ul>		
(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.		
<b>Proposed Development (preferred Alternative)</b>		
<b>Development Phase:</b>		
<ul style="list-style-type: none"> <li>• Compaction of Soil</li> <li>• Increase in Storm Water / Waste Water Run-Off.</li> <li>• Ecological and Biological: Impact on Sensitive Environments (Rivers, Wetlands Etc)</li> <li>• Socio-Economic: Traffic Impacts</li> <li>• Socio-Economic: Noise</li> <li>• Heritage and Cultural Historic: Impact on Archaeological etc.</li> <li>• Heritage and Cultural Historic: Visual / Sense of Place</li> </ul>		
<b>Operational Phase:</b>		
<ul style="list-style-type: none"> <li>• Surface and Groundwater Pollution: Surface Water Contamination</li> <li>• Surface and Groundwater Pollution: Ground Water Contamination</li> <li>• Surface and Groundwater Pollution: Soil Contamination</li> <li>• Emissions and Air Quality: Odour</li> <li>• Emissions and Air Quality: Exhaust Emissions</li> <li>• Emissions and Air Quality: Dust</li> <li>• Emissions and Air Quality: Bio-aerosols</li> <li>• Compaction of Soil</li> <li>• Increase in Storm Water / Waste Water Run-Off.</li> <li>• Ecological and Biological: Impact on Fauna</li> </ul>		

- Ecological and Biological: Impact on Sensitive Environments (Rivers, Wetlands Etc)
- Socio-Economic: Traffic Impacts
- Socio-Economic: Noise
- Socio-Economic: Flies
- Socio-Economic: Odours
- Socio-Economic: Tourism
- Heritage and Cultural Historic: Impact on Archaeological etc.
- Heritage and Cultural Historic: Visual / Sense of Place

**Decommissioning Phase:**

- Compaction of Soil
- Ecological and Biological: Impact on Sensitive Environments (Rivers, Wetlands Etc)
- Socio-Economic: Traffic Impacts
- Socio-Economic: Noise
- Heritage and Cultural Historic: Impact on Archaeological etc.
- Heritage and Cultural Historic: Visual / Sense of Place

**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 EMPr with a strong emphasis on post-construction rehabilitation. Please refer to the EMPr for more details on the mitigation and management measures.

**\*See Appendix H - EMPr 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.

Note that the following activities trigger water uses in terms of the National Water Act, 1998 (Act 36 of 1998): Section 21.G. disposing of waste in a manner which may detrimentally impact on a water resource.

A Waste Management Licence is required for the proposed activity.

- (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 EMPr and the financial cost of all environmental control measures. In accordance with the requirements of the EMPr, the applicant must ensure that any person acting on their behalf complies with the conditions / specifications contained in this EMPr. 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 EMPr. 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, WL 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 EMP, MMP 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.		
<ul style="list-style-type: none"> <li>• The relevant water use licences must be obtained from the department of water and sanitation.</li> <li>• 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.</li> <li>• All zoning and consent use applications to be obtained from Drakenstein Municipality, and the conditions set out therein in terms of the land use change application must be adhered to.</li> <li>• A Waste Management Licence as applied for must be obtained in conjunction with the issuing of the EA</li> </ul>		
(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:		
<ul style="list-style-type: none"> <li>• Should any heritage artefacts be exposed during construction that all activities be stopped, and Heritage Western Cape contacted before any further action being permitted.</li> <li>• 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.</li> <li>• The relevant water use licences must be obtained from the department of water and sanitation.</li> <li>• The relevant Waste Management Licence as applied for in conjunction with the EA application must be obtained.</li> </ul>		
(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.	NA
	Appendix E1: Copy of comment from HWC.	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 H1:	EMPr	X
Appendix H2:	MMP	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
	Appendix K1: EAP CV	
	Appendix K2: Stormwater Management Plan	
	Appendix K3: Climatic Water Balance	
	Appendix K4: Facility's Existing Authorisation	

## SECTION J: DECLARATIONS TO BE SUBMITTED WITH THE FINAL BAR