



**Waste Management Licence Application Additional Information Annexure  
(application for new facilities, expansion of existing facilities or decommissioning /  
closure of existing facilities.)**

**DECEMBER 2013**

**DEPARTMENTAL REFERENCE NUMBER(S)**

File reference number (EIA):	<b>16/3/3/1/B4/23/1005/19</b>
File reference number (Waste):	<b>19/2/5/3/B4/23/WL0008/19</b>
File reference number (Other):	

**PROJECT TITLE**

**EXPANSION AND WASTE LICENSE APPLICATION FOR THE GROENFONTEIN KLAPMUTS  
COMPOST FACILITY ON REMAINDER FARMS GROENFONTEIN ANNEX 716 PORTION 54  
AND PORTION 56, PAARL**

Kindly note that:

- For an application for a waste management licence that must be subjected to a Basic Assessment or Scoping & Environmental Impact Reporting process, this Annexure must be submitted together with the Basic Assessment Report or Environmental Impact Report. Note that when applying for decommissioning/closure of existing facility only the following sections must be completed 2, 3, 15 and 16.
- This annexure is current as of December 2013. It is the responsibility of the Applicant / EAP to ascertain whether subsequent versions of the appendix have been published or produced by the competent authority.
- The required information must be typed within the spaces provided in the report. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. It is in the form of a table that will expand as each space is filled with typing.
- An incomplete annexure may result in the rejection of the Basic Assessment Report or Environmental Impact Report.
- The use of "not applicable" in the document must be done with circumspection. Where it is used in respect of material information that is required by the Department for assessing the application, this may result in the rejection of the Basic Assessment Report or Environmental impact Report.
- While the different sections of the annexure report 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.**
- 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 the belief that the information is protected.
- This annexure must be submitted together with the Basic Assessment Report or Environmental Impact Report to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. No faxed or e-mailed reports will be accepted. **Please note that for waste management licence applications, this report must 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 Region A.**

**DEPARTMENTAL DETAILS**

**DIRECTORATE WASTE MANAGEMENT**

<p>Department of Environmental Affairs and Development Planning Attention: Directorate Waste Management 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: Tel. (021) 483-2756 Fax (021) 483-4425</p>
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Highlight the type of project:	Recycling and/or recovery facility	Treatment facility	Disposal facility	Other
<b>Please provide a general description of the project and associated infrastructure:</b>				
The proposed development is for the <b>EXPANSION</b> of an existing composting facility located on Farm Groenfontein Annex 716 Portion 56.				
<b>Existing Facility:</b>				
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:				
<ul style="list-style-type: none"> <li>• Current extent of the composting area (in hectares or m<sup>2</sup>): ±1.36ha currently being used</li> <li>• Tonnage of compost produced (per month / annum): Figures are based on sales for the period from <u>Jan 2018 – Jan 2019</u>:                             <ul style="list-style-type: none"> <li>○ Chicken manure: 1,267 m<sup>3</sup>/month</li> <li>○ Compost: 538 m<sup>3</sup>/month</li> <li>○ Waste Manure: 426 m<sup>3</sup>/month</li> </ul> </li> </ul>				
<b>Proposed:</b>				
<b>Composting activity:</b>				
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 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.				
<b>Stormwater management:</b>				
The existing two dams (located on Portions 54 and 56 respectively) have a combined storage capacity of ±6600m <sup>3</sup> . 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.				

## 1. SIZE OF SITE AND FACILITY, AND CLASSIFICATION OF FACILITY

Size of facility for a waste management activity	±143000m <sup>2</sup>
Area where the waste management activity takes place	±67000m <sup>2</sup>
In terms of waste disposal and composting facilities: Classification of facility in terms of climatic water balance	The site is classified as B+, in terms of climatic water balance. Leachate management systems may be required (see Appendix K3 of the BAR).
In terms of waste disposal facilities: Classification of Facility in terms of the type and the quantity of waste received	Category A Facility (equivalent to Basic Impact Assessment (EIA)) General waste more specifically Part C organic waste).

## 2. GEOGRAPHICAL COORDINATES OF ALL EXTERNAL CORNER POINTS OF FOOTPRINT OF THE WASTE MANAGEMENT FACILITY

Number of Corners	Latitude (S):			Longitude (E):		
NW Corner	33°	47'	01.39"	18°	50'	10.96"

NE Corner	33°	47'	09.12"	18°	50'	20.23"
SW Corner	33°	47'	09.03"	18°	50'	03.63"
SE Corner	33°	47'	15.58"	18°	50'	18.33"

**Please note:** The corner numbers must be indicate on a site map to be attached to this annexure.

### 3. DETAILS OF THE PERSON WISHING TO HOLD THE WASTE MANAGEMENT LICENCE

First name and surname:	Mr. Pieter Visser		
Company Name (if any):	Boland Organic Supplies (Pty) Ltd		
Identity and/or Company Registration number:	2013/173661/07		
Physical address:	Remainder Farms Groenfontein Annex 716 Portion 54 and Portion 56, Paarl.		
Postal address:	PO Box 272		
	Moorreesburg	Postal code:	7310
Telephone:	021 971 1404	Cell:	NA
E-mail:	<a href="mailto:pietervisser@tiptrans.co.za">pietervisser@tiptrans.co.za</a>	Fax:	NA
EAP Qualifications	B Tech Oceanography: Cape Peninsula University of Technology (2010)		
EAP Registrations/Associations	SACNASP Cand.Sci.Nat (Biological Science) no. 100126/12		

### 4. DETAILS OF THE OPERATIONAL TIMES

Period	From	Until
<b>Weekdays</b>	07h00	18h00
<b>Saturdays</b>	NA	NA
<b>Sundays</b>	NA	NA
<b>Public Holidays</b>	07h00	18h00

### 5. DESCRIPTION OF THE WASTE MANAGEMENT ACTIVITIES AND THE WASTE MANAGEMENT OPERATIONS

5.1 Provide a flow chart of the operation showing all inputs and outputs of the process.

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.

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.

#### **Stormwater management:**

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

#### **What composting entails?**

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

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

compost.

The five criteria of a good recipe are:

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

### **Process**

The physical structure of the compost pile is essential in managing the above critical chemical parameters.

In agriculture, windrow composting is the production of compost by piling organic matter or biodegradable waste, such as animal manure and crop residues, in long rows (windrows). This method is suited to producing large volumes of compost.

It is necessary to ensure that all organic waste is placed on a dry plant material base, i.e. wood chips to reduce smells and attraction of flies and other pests. These chips are of an ideal size to ensure that initial porosity required is achieved to ensure airflow until the moisture levels within either the windrows or the bulk piles has equalized. The base layer of wood chips also prevents any run off of liquids onto the site. Once the piles have settled down and reduced in height after the first month, the windrow can be turned or the bulk pile added to a windrow.

The windrows are turned according to guided frequencies once the initial digestion of the organic waste has taken place, taking into account the temperature and moisture levels. The compost has to be turned when the temperature gets to 65°C or above. This is critical to keep the bacteria functioning and also to prevent a fire risk which can occur above 70°C.

If the temperature is too high, moisture will be added (usually from the retention dams) and then the row will be turned to incorporate air. This will stabilize the windrow.

Please refer to the Operating Specification Data Annexed to this document.

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.***

**Compost Process Flow:**



- 5.2 Give particulars of the source, location, nature, composition and quantity of emission to the atmosphere, surface water, sewer, and ground-water including noise emissions. Solid waste must be in cubic metres (m<sup>3</sup>) or tons (t) and specify units for liquids and gases.

**Emissions:**

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.

**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.

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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.

## 6. WASTE QUANTITIES

6.1 Indicate or specify types of waste and list the estimated in cubic meters (m<sup>3</sup>) or tons (t) expected to be managed daily (in cubic meters or tons):

Hazardous waste	Non hazardous waste	Total
NA	*Compostable Organic Waste - mixed	200m <sup>3</sup> per day

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.**

The expanded facility intends to accept Organic Waste from categories 1, 2 and 3 as defined below:

**Table 9: Categorisation of organic waste**

Potential significance in terms of negative environmental impact	Category	Types of organic materials permitted for composting	
		Organic Waste Type	Examples
LOW	Category 1	Garden and landscaping	Grass <sup>1</sup> , leaves, plants, branches, tree trunks and stumps
		Untreated wood	Sawdust, wood shavings, timber off-cuts, wooden crates and pallets, wood packaging
		Natural organic fibrous organics	Peat, seed husks, straw, bagasse and other natural organic fibrous organics
		Processed fibrous organics	Paper, cardboard, paper-processing sludge, non-synthetic textiles
		Manure	Animal manure, animal droppings
MEDIUM	Category 2	Other natural or processed vegetable organics	Vegetables, fruit and seeds and processing sludges and wastes, winery, brewery and distillery wastes, food organics excluding organics in Category 3.
		Biosolids and manures	Sewage biosolids, animal manure and mixtures of manure and biodegradable animal bedding organics.
HIGH	Category 3	Meat, fish and fatty foods	Carcasses, blood, bone, fish, fatty processing or food.
		Fatty and oily sludges and organics of animal and vegetable origin	Dewatered grease trap, fatty and oily sludges of animal and vegetable origin.
		Mixed residential waste containing putrescible organics	Wastes containing putrescible organics, including household domestic mixed waste and waste from commerce and industry.
		Authorised (and suitable for composting) industrial waste organics	Fish-processing, paper pulp wastes and sludges with high-organic/ nitrogen loads.

*Adapted from: Environmental Guidelines: Composting and Related Organics Processing Facilities, 2004: 17.*

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



6.2 Indicate the source of information supplied in the table above:

Determined from volumes	Determined with weighbridge/scale	Estimated
If estimation is utilised please describe the method used):		
NA		

## 7. RECOVERY, REUSE, RECYCLING, TREATMENT AND DISPOSAL QUANTITIES (NOT APPLICABLE FOR DECOMMISSIONING / CLOSURE APPLICATIONS):

7.1 Indicate the applicable waste types and quantities expected to be recovered, reused, recycled, treated and disposed of annually.

Types of waste (see page 13 for waste classification)	Main Source (name of company)	Quantities (tons or m <sup>3</sup> )		On-site recovery reuse recycling treatment or disposal	Offsite recovery reuse recycling treatment or disposal	Offsite disposal
		Quantities/day	Quantities/month	Method & location	Method location and contractor details	
<b>General waste</b>						
Compostable organic waste – as defined in the National Organic Waste Composting Strategy, 2013.		200m <sup>3</sup>	4000m <sup>3</sup>	Composting of mixed compostable organic waste by method of turned windrows.	NA	NA
<b>Hazardous waste</b>						
NA	NA	NA	NA	NA	NA	NA

## 8. SIZE OF THE POPULATION TO BE SERVED BY THE FACILITY

8.1 Indicate the size of the population to be served by the waste management facility:

Size of Population	Comment
0-499	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 compostable 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.  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.
500-9,999	
10,000-199,999	
200,00	

## 9. ~~WASTE DISPOSAL FACILITY PARAMETERS (ONLY APPLICABLE TO WASTE DISPOSAL FACILITIES)~~

9.1 It is imperative that the holder of the waste licence is a fit and proper person in terms of section 59 of the National Environment Management: Waste Act, 2008 (Act No. 59 of 2008). Please disclose the following:-

a) The method of disposal of waste (only applicable to waste disposal facilities):

Land-building	
Land-filling	
Both	

b) The dimensions of the disposal site in metres:-

	At commencement	After rehabilitation
Height/Depth		

Length

Breadth

c) The total volume available for the disposal of waste on the site:-

Volume Available	Mark with "x"	Source of information (determined by surveyor/estimated)
Up to 99		
100 – 34 999		
35 000 – 3,5 million		
> 3,5 million		

d) Compacting and covering of the waste body:-

Confirm that the waste body will be covered daily	Yes	No	If no, please explain
Confirm that that sufficient cover material is available		No	If no, please explain
Give an indication of where the cover material will be sourced and indicate the distance in kilometres/metres from waste disposal facility:			
Confirm that the waste will be compacted daily		No	If no, please explain

### 10. THE RECLAMATION/DIVERSION METHOD AT THE WASTE DISPOSAL FACILITY

10.1. Mark with an "x" the method to be used (reclamation not allowed at the working face of the disposal facility):-

At source

Recycling installation

No reclamation/diversion planned

Estimate the planned diversion rate in percentage


### 11. FATAL FLAWS FOR THE SITE (ONLY APPLICABLE TO WASTE DISPOSAL FACILITIES):-

Indicate which of the following apply to the facility for a waste management activity:

Within a 3000m radius of the end of an airport landing strip	Yes	No
Within the 1 in 50 year flood line of any watercourse	Yes	No
Within an unstable area (fault zone, seismic zone, dolomitic area, sinkholes)	Yes	No
Within the drainage area or within 5 km of water source	Yes	No
Within an area with shallow and/or visible water table	Yes	No
Within an area adjacent to or above an aquifer	Yes	No
Within an area with shallow bedrock and limited available cover material	Yes	No
Within 100 m of the source of surface water	Yes	No
Within 1 km from the wetland	Yes	No
Indicate the distance to the boundary of the nearest residential area	..... metres	
Indicate the distance to the boundary of the industrial area	..... metres	

### 12. RAINFALL (ONLY APPLICABLE TO WASTE DISPOSAL FACILITIES):-

a) Indicate the wettest 6 months of the year:-

November – April

May – October


For the wettest six month period indicated above, indicate the following for the preceding 30 years

For the 1<sup>st</sup> wettest year For the 2<sup>nd</sup> wettest year For the 3<sup>rd</sup> wettest year For the

4<sup>th</sup> wettest year For the  
5<sup>th</sup> wettest year For the  
6<sup>th</sup> wettest year For the  
7<sup>th</sup> wettest year For the  
8<sup>th</sup> wettest year For the  
9<sup>th</sup> wettest year For the  
10<sup>th</sup> wettest year

Total rainfall for 6 months	Total A-pan evaporation for 6 months	Climatic water balance

**13. LOCATION AND DEPTH OF GROUND WATER MONITORING BOREHOLES  
(ONLY APPLICABLE TO WASTE DISPOSAL FACILITIES):-**

Codes of boreholes	Borehole locality	Depth (m)	Latitude			Longitude		
			°	'	"	°	'	"
.....	.....		°	'	"	°	'	"
.....	.....		°	'	"	°	'	"
.....	.....		°	'	"	°	'	"
.....	.....		°	'	"	°	'	"

**14. LOCATION AND DEPTH OF LANDFILL GAS MONITORING TEST PIT  
(ONLY APPLICABLE TO WASTE DISPOSAL FACILITIES):-**

Codes of boreholes	Borehole locality	Latitude			Longitude		
		°	'	"	°	'	"
.....	.....	°	'	"	°	'	"
.....	.....	°	'	"	°	'	"
.....	.....	°	'	"	°	'	"

**15. EVERY CLOSURE APPLICATION FOR FACILITIES SHOWN IN THE TABLE BELOW MUST AS A MINIMUM BE ACCOMPANIED BY DOCUMENTATION AS INDICATED HEREAFTER:**

Requirements	Recycling &/ recovery Facility	Treatment facility	Disposal facility
Design of storm-water management	X	X	X
Design of leachate management			X
Design & duration of landfill gas monitoring and management			X
Design of settlement/surface pondage			X
Design of access roads			X
Topographic Map indicating the property	X	X	
Topographic Map indicating the landfill property boundary, cells (fill areas), wells, and structures within and surrounding the landfill site			X
Plan Drawings (including Final Contour Grade Map) indicating (a) the final contours and vegetation in relationship to the surrounding land and any run-off control structures			X
Plan Drawings (including Final Contour Grade Map) indicating (b) well location(s), depth to groundwater and flow direction			X
Plan Drawings (including Final Contour Grade Map) indicating (c) the locations at which gas monitoring takes place			X
Drawings showing the proposed final restored profile for the landfill accompanied by calculations of the remaining tonnages of waste (void space) and materials necessary to close, cap and restore the landfill			X
Provision of services that were provided by the facility being closed	X	X	X
Post Closure Site management & Operation	X	X	X
Monitoring Plan	X	X	X
Emergency Preparedness plan	X	X	X
Rehabilitation measures including removal of site structures,	X	X	X
Rehabilitation measures including waste compaction and capping; application of topsoil & vegetation establishment			X
Procedures for the inspection or auditing of the rehabilitation process	X	X	X

and mechanisms for reporting to the licensing authority.			
Long and short term stability			X
Procedures and timescales for ensuring final levels are achieved			X

## 16. INFORMATION NEEDED WHEN APPLYING FOR ACTIVITIES LISTED UNDER CATEGORY A AND B, BUT IS NOT LIMITED THERETO:

The following MUST be included in the application as supporting documentation and the applicant must indicate specific section(s) where they are appended in the reports.

REQUIRED PIECE OF INFORMATION	SECTION IN THE REPORTS WHERE IT CAN BE FOUND	COMMENTS (If any)
1. 1:50 000 topography /topo-cadastral map of the area showing:	Basic Assessment Report - Appendix A	
1.1 The site and 5km radius	Basic Assessment Report - Appendix D4	
1.2 Existing neighbouring residential and industrial areas	Basic Assessment Report - Appendix D3 and D4	
1.3 Possible future development (indicate the type of development)	Basic Assessment Report - Appendix D3 and D4	
1.4 Other waste handling facilities (existing or closed) in the area	Basic Assessment Report - Appendix D3 and D4	
1.5 Existing and possible future neighbouring residential areas.	Basic Assessment Report - Appendix D3 and D4	
2. The site plan drawn to scale showing the site's boundary showing:	Basic Assessment Report - Appendix B	
2.1 Activities or development existing on all 4 directions of the facility.	Basic Assessment Report - Appendix D3 and D4	
2.2 Waste receipt, storage and handling areas	Basic Assessment Report - Appendix B	
2.3 Impermeable surfaces	Basic Assessment Report - Appendix B	
2.4 Sealed drainage systems	Basic Assessment Report - Appendix B	
2.5 Drainage system for the facility including sumps and discharge points	Basic Assessment Report - Appendix B	
2.6 Road names and access from all major roads in the area	Basic Assessment Report - Appendix A	
2.7 Buffer zone (waste disposal and composting facilities)	Basic Assessment Report - Appendix B	
3. Security and access aspects of the facility	Basic Assessment Report - Appendix B	
4. Emergency preparedness plan	Basic Assessment Report - Appendix H	
5. Waste hierarchy implementation plan	Basic Assessment Report - Appendix H	
6. Operational plan	Basic Assessment Report - Appendix H	
7. Latest external audit report (only apply for permit/licence amendment)	NA	
8. Geo-hydrological report (only apply to waste disposal facilities , storage facilities and treatment of waste)	NA	
9. Description risk assessment	Basic Assessment Report - Appendix H	

## 17. ANY OTHER REQUIREMENTS IN TERMS OF THE WASTE ACT

Please describe how the principles of waste management as set out in section 16 of National Environment Management: Waste Act, 2008 (Act No. 59 of 2008) have been taken into account:

The re-use of organic material for compost for use on the lands is critical in ensuring soil health and sustainability. Use of manure to land has been practised since the onset of agriculture and it is merely the process of composting that is now considered a waste activity. The impacts of composting the manure means there is a better quality product available for use on land. Thus the impacts associated with this activity are positive and the location of the activity has ensured that no sensitive areas are affected.

In this section please describe how any other requirements in terms of the National Environment Management: Waste Act, 2008 (Act No. 59 of 2008), not dealt with above, have been complied with/addressed:

The expansion of the compost facility requires an Environmental Authorisation. The BAR includes

information on both the waste and EIA aspects. Please see Appendix J of the BAR for full details of the impacts identified.

## 18. COMPETENCE OF THE PERSON/COMPANY THAT WILL HOLD THE WASTE MANAGEMENT LICENCE

It is imperative that the holder of the waste management licence is a fit and proper person in terms of section 59 of the National Environment Management: Waste Act, 2008 (Act No. 59 of 2008). Please disclose the following:

(a) Legal compliance:

	Yes / No	Details
Has the applicant ever been found guilty or issued with a noncompliance notice in terms of any national environmental management legislation?	No	
Has the applicant's licence in terms of the Waste Act 2008 ever been revoked?	No	
Has the applicant ever been issued with a noncompliance notice or letter in terms of any South African Law?	No	

**Please note:** Details required above include any information that the applicant wants the Department to take into consideration in determining whether they are a "fit person" and this includes reasons why the offence happened and measures in place to prevent recurrence.

(b) Technical competence:

What technical skills are required to operate the site?	The loading and unloading of material is of an unskilled nature. Training can be given within one day.  The monitoring of the compost ageing process entails the daily measuring of temperature with an extended probe temperature gauge and logging the temperature on graph paper. This will be done by the farm manager.
How will the applicant ensure and maintain technical competency in the operation of the site?	Written training manuals On-the-job training Training of back-up personnel Audits to ensure competencies
Qualifications of person and relevant employees?	Farm Manager
Experience of person and relevant employees? (highlight the persons/employees duties and responsibilities in terms of the experience)	Farm Manager

(c) Financial Provisions:

Attach to this annexure a plan of estimated expenditure for the following:

Environmental Monitoring	Refer to EMP in Appendix H of the BAR
Provision and replacement of infrastructure	Refer to EMP in Appendix H of the BAR
Provision of appropriate equipment	Refer to the Operational Specification Data annexed to this report.
Closure/decommissioning/rehabilitation and aftercare	Refer to EMP in Appendix H of the BAR
Confirmation and adequate funds have been budgeted for the above aspects	Refer to the Declaration attached to the Basic Assessment Report

## 19. INFORMATION FOR WASTE DISPOSAL FACILITIES – NA

The following aspects MUST be addressed and included in the application documentation for waste disposal facilities and the applicant must indicate specific section(s) where they are appended in the reports.

REQUIRED PIECE OF INFORMATION	SECTION IN THE REPORTS WHERE IT CAN BE FOUND	COMMENTS (if any)
Waste disposal facility designs		
Closure plan (report)		
Closure/Remedial designs		
Landfill conceptual designs (only apply for construction and decommissioning of waste disposal facilities)		
End-use plan (only apply to waste disposal facility closure)		
Design for site roads		
The 1 in 50 year flood line of all watercourses		
Laboratory facilities		
Design and location of fuel storage areas		
Design and location waste quarantine areas		
Design and location of waste inspection areas		
Site's drainage system		
Site's emergency control system and plan		
Liner specifications		
Leak detection system and monitoring		
Leachate management plan		
Calculations of leachate generation		
Leachate collection and treatment		
Groundwater monitoring		
Gas management and/or harvesting		
Air quality monitoring and management		
Co-disposal ratio calculation		
Stability monitoring and management		
Daily and intermediate cover requirements		
Temporary and permanent capping requirements		

# DECLARATIONS

## THE INDEPENDENT ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

I ...**Lauren Abrahams**..., as the appointed independent environmental practitioner ("EAP") hereby declare that I:

- act/ed as the independent EAP in this application;
- regard the information contained in this report to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and the NEM: Waste Act (Act no 59 of 2008);
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and the NEM: Waste Act (Act no 59 of 2008);
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and the NEM: Waste Act (Act no 59 of 2008), and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the application was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- have ensured that the comments of all interested and affected parties were considered, recorded and submitted to the competent authority in respect of the application;
- have kept a register of all interested and affected parties that participated in the public participation process;
- have provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

**Note:** The terms of reference must be attached.

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Signature of the environmental assessment practitioner:

**Eco Impact Legal Consulting (Pty) Ltd**

Name of company:

Date:

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## GENERAL WASTE CATEGORISATION

Municipal Waste
Commercial and industrial waste
Brine
Fly ash and dust from miscellaneous filter sources
Bottom slag
Organic
Construction and demolition waste
Paper
Glass
Metal
Tyres
Other (specify)

## HAZARDOUS WASTE CATEGORISATION

Gaseous waste
Mercury containing waste
Batteries
POP Waste
Pesticide containing waste
Inorganic chemical waste
Asbestos containing waste
Waste oils
Organic halogenated and/or sulphur containing solvents
Organic halogenated solids and compounds with sulphur
Organic solvents without halogens and sulphur
Other organic waste without halogens and sulphur
Tarry and bituminous waste
Brine
Fly ash and dust from miscellaneous filter sources
Bottom ash
Slag
Mineral waste
Waste of Electric and Electronic Equipment (WEEE)
Metal scrap
Health care risk waste
Miscellaneous

# **ANNEXURE A**

## **OPERATIONAL DATA SPECIFICATIONS**

### **Introduction**

Aerobic composting consists of a controlled biological process and mechanical screening thereafter. The biological process is the most critical component of aerobic composting process. Hence it is to be properly understood and regularly monitored to derive maximum benefits from the composting process.

The main objective of this SOP is to get optimum results. The whole plant's staff in general and the windrow management team in particular should study and follow this SOP religiously. The team leader should ensure that the team members entrusted with the responsibility of windrow management follows the recommended procedures. For windrow management, a team consisting of a windrow supervisor, two assistants, and the operators of turning equipment is suggested. The windrow supervisor should have scientific aptitude to understand the basics of microbiology and should have commitment and capacity to follow the SOP wholly. He is the most critical player in the whole process of the project (compost) outcome.

### **Windrow formation**

Windrow means a long heap of regular shape and cross section (chicken manure). Formation of windrow is very important from following angles: Available space is optimally utilized.

Natural air flow is not obstructed. Movement of incoming and outgoing vehicles is hassle free.

### **Oxygen Measurement**

Oxygen is very necessary for biological activity of aerobic microbes present in the windrows. Oxygen meter with a probe long enough to reach deep into the windrow should be used. As the probe may not be strong enough to pierce and penetrate the heap to the desired depth, a hole may be made into the windrow where the temperature is to be measured with the help of a pointed pipe, and the probe be inserted. Oxygen percentage in the windrows should be above 10 %. Oxygen of every windrow should be measured every day at 10 different locations.

### **Turning of windrows**

Aerobic bacteria need oxygen regularly. Regular turning of the windrow is required to ensure availability of oxygen. Hence turning of windrows at fixed intervals should be strictly followed.

### **Treatment with inoculum**

Incoming product may have native microbes which might have started decaying process. They could be of anaerobic and aerobic varieties. In order to have an end product of desired quality and also to accelerate the process of decomposition, inoculation with selected strains of effective microbes might be very essential.

Otherwise the decomposition process will be erratic creating problems for the operation. Purpose of biological treatment could be summarized as below:

- To accelerate biological process.
- To ensure optimum decomposition.
- To make the end product of desirable quality.
- To suppress the activities of anaerobic microbes to minimize production of offensive odors.
- To ensure exothermic biological activity to destroy pathogenic organism.
- To reduce loss of nutrients
- To avoid propagation of insects, turning machines have easy access to each windrow.

### **Moisture Level**

If the moisture level is very low microbes may not survive and delay the composting process. Hence moisture level may be monitored continuously for speedy decomposition and better output and quality of the end product. Ideal level of moisture will be around 50%.

### **Temperature Measurement**

Due to the biological activity of aerobic bacteria, part of the organic carbon converted to carbon dioxide. This chemical activity is exothermic and hence lot of heat is generated. The temperature has to be maintained between 65-70°C. Temperature of every heap should be measured every day at 25 different locations. The temperature starts to rise from 2nd day of windrow formation and on 4th day it should reach around 60°C.

### **Site Hygiene**

Due to the nature of the materials the site will be processing via the composting route it is essential that correct site hygiene management is maintained. The nature of the materials, which makes them ideal for composting also has the potential to cause hygiene and environmental issues if not handled correctly.

If not handled properly unacceptable smells and pest levels (flies) could be generated. The site must be kept as clean as possible within the context of manufacturing compost. It has been established on site during the set-up phase that all windrows and bulk piles may attract flies if they contain wet, animal by-products that are only covered with the coarse wood chips. The dry fine kraal manure must be used wherever possible to cover / encase the windrows bulk piles. This has been shown to help reduce odours and fly numbers. The process also includes covering the manure with wood chips at the time of delivery – it is pushed into rows and turned to avoid odours and attracting flies / insects.

### **Sample testing**

It is very important to do regular test on composted products. (N,P,K)

### **Chicken manure**

- Truck loads CF chicken manure to site 1000m<sup>3</sup> (Groenfontein)
- +- 30-50 % loss in volume when composted
- 3-4 months for compost to be ready

**Mixed blend**

- 50/50 mix (Chicken manure + Woodchips)
- Time to compost +/- 3-4 months (30% in volume loss)
- Water add to compost(moisture)
- Turned x2 per week

**End product**

- Truck transport 65m<sup>3</sup> raw materials (Groenfontein)
- Truck collect 50m<sup>3</sup> composted product (weight problem)

**Conclusion**

For smooth functioning of composting the SOPs are very helpful. By following the SOPs, a company can save time, utilization of resources i.e. machinery, diesel, labour and electricity. Composting is a very delicate and sensitive procedure it needs proper attention though any one can produce a fine quality of recommended standards by following these SOPs.