



DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME (EMP)

Goldi - A Division of

Astral Operations Limited

Goldi Farm Composting Site – S24G Application draft Environmental Management Programme

Locality: Standerton

Departmental Ref No: 17/2/10/24G (GS) - 01/2013/14

Date: 17 April 2015

Unit C8
Block @ Nature
472 Botterklapper Street
Pretoria

Office: + 27 (0)12 807 7036 Fax: +27 (0)12 807 1014



PROJECT DETAILS

Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs

Reference No.: 17/2/10/24G (GS) - 01/2013/14

Project Title: Goldi Farm Composting Site – S24G Rectification Application

Project Number: EAR-STA-13-01-08

Compiled by: Karien du Plessis

Date: 17 April 2015

Location: Pretoria

Technical Reviewer: Lizette Crous

Signature

TABLE OF CONTENTS

1. INTRODUCTION	/
2. ENVIRONMENTAL ASSESSMENT PRACTITIONER	10
3. SITE DOCUMENTATION	13
4. LEGISLATION	13
5. ENVIRONMENTAL MANAGEMENT PROGRAMME	17
6. ENVIRONMENTAL AWARENESS PLAN	38
LIST OF FIGURES	
Figure 1: Locality of the Site	
Figure 2: Proposed storm water management measures	
LIST OF TABLES	
Table 1: Unlawful activities undertaken	8
Table 2: Applicable legislation, policies and/or guidelines	13
Table 3: EMP: Environment in general	17
Table 4: EMP- Stormwater	18
Table 5: EMP – Geohydrology, surface water, groundwater and soil	22
Table 6: EMP – Fauna, Flora and Wetlands	27
Table 7: EMP - Visual	30
Table 8: EMP – Atmosphere	31
Table 9: EMP- Infrastructure	33
Table 10: EMP – Resource usage	34
Table 11: EMP- Heritage	35
Table 12: FMP - Worker's safety and health of neighbouring residents	35



LIST OF ABBREVIATIONS

BID - Background Information Document

BAR - Basic Assessment Report

CRR - Comments Response ReportDWA - Department of Water Affairs

EAP - Environmental Assessment Practitioner

ECA - Environmental Conservation Act of 1989

EIA - Environmental Impact Assessment

EIR - Environmental Impact Report

EMF - Environmental Management FrameworkEMP - Environmental Management Programme

GN - Government Notice

I&AP - Interested and Affected Party

Mpumalanga Department of Economic Development, Environment and

MDEDET -

Tourism

NEMA - National Environmental Management Act, Act 107 of 1998, as amended

National Environmental Management: Waste Act, Act 59 of 2008, as

amended

R - Regulation

S24G - Section 24 G of NEMA, 1998, as amended

REFERENCES

Aneja, V.P., Roelle, P.A., Murray, G.C., Southerland, J., Erisman, J.W., Fowler, D., Asman, W.A.H. and Patni, N., 2001. Atmospheric nitrogen compounds II: emissions, transport, transformation, deposition and assessment. Atmospheric Environment **35**, 1903-1911.

Department of Environmental Affairs, 2014. National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008). Draft National Norms and Standards for Organic Waste Composting.

Hao, X. and Benke, M.B., 2008. Nitrogen Transformation and Losses during Composting and Mitigation Strategies. Agriculture and Agri-Food Canada, Lethbridge Research Centre, Canada. Dynamic Soil, Dynamic Plant. Global Science Books.

Humane Society International, 2013. An HSI Report: The Public Health Implications of Intensive Farm Animal Production in South Asia.



National Environmental Management Act, 1998 (Act No. 107 of 1998).

Pagans, E., Barrena, R., Font, X., and Sanchez, A., 2006. Ammonia emissions from the composting of different organic wastes: dependency on process temperature. Chemosphere. 62(2006): 1534-1542.

Parkinson, R., Gibbs, P., Burchett, S. and Misselbrook, T., 2004. Effect of turning regime and seasonal weather conditions on nitrogen and phosphorus losses during aerobic composting of cattle manure. Bioresource Technology **91**, 171-178.

Peigné, J. and Girardin, P., 2004. Environmental impacts of farm-scale composting practices. Water, Air and Soil Pollution **153**, 45-68.

Shangoni Management Services (Pty) Ltd., 2014. Goldi Composting Site – Storm Water Management Plan.

Ulén, B., 1993. Losses of nutrients through leaching and surface runoff from manure-containing compost. Biological Agriculture and Horticulture **10**, 29-37.

Zhao, L., Manuzon, R.B., Darr, M.J., Keener, H.M. and Heber, A.J., 2008. Ammonia Emissions from a Commercial Poultry Manure Composting Facility. Agricultural and Biosystems Engineering, Iowa State University.



1. INTRODUCTION

Goldi is a Division of the Astral Operations Limited group. Astral is a leading poultry producer in South Africa and consists of a number of business units, including Poultry, National Chicks, Ross Poultry, Meadow Feeds, Tiger Chicks and Tiger Feeds. Goldi has three chicken abattoirs (Standerton, Camperdown and Olifantsfontein) in South African and also owns a number of chicken farms. A large number of contract growers are also employed to produce chickens for slaughter at Goldi's abattoirs (www.astralfoods.co.za).

The Goldi Farm Composting Site is located on Portion 15 of the farm Vlakfontein 388 IS. The site is approximately 2.8km North-West of Standerton, Mpumalanga.

1.1 BACKGROUND DESCRIPTION

The management of organic waste from the Goldi abattoirs, hatcheries, chickens farms, and rendering plant is problematic as these wastes need to be disposed of if they cannot be re-used, recycled or recovered. In the past, these wastes were disposed of as Goldi did not have alternative ways of managing the wastes generated. An alternative option for the management of this waste is to compost it into a valuable product.

1.2 PROJECT/ACTIVITY DESCRIPTION

The activity that was illegally commenced with entails the development and operation of a composting process that can biodegrade organic poultry waste. The waste streams comprise of poultry litter generated by Goldi broiler farms in the area, as well as a low percentage of organic matter from the Goldi hatchery, the Goldi abattoir and its rendering facility.

The method of composting is known as the Windrow composting method and involves the production of compost by piling organic matter or biodegradable waste, such as animal waste, in long rows. The rows are frequently turned and watered in order to improve porosity and oxygen content, to mix in or remove moisture and to redistribute cooler and hotter portions of the pile. Windrow composting is an effective method to produce good quality compost on a large scale.

The illegal activities were commenced with on 22 November 2012. The activities that have already been completed include:

- Approximately 13ha of old cropland has been cleared to establish a Windrow-composting process area.
- Approximately 4 500m³ of poultry waste is currently stored onsite.
- A storm water control berm has been constructed on the Southern border of the site in order to divert affected storm water run-off from entering the adjacent earth dam.



Activities that still need to be completed:

- An evaporation pond would need to be constructed at the lowest point of the berm, in order to contain affected storm water run-off.
- Composting of approximately 11 315m³ of poultry waste (chicken manure, chicken hatchery waste, rendering facility carcass meal sediment and abattoir and rendering facility effluent waste). Waste will be fed into the composting plant at a daily rate of 31m³.

Figure 1 shows the locality of the site.

In accordance with Section 24(G) read together with sections 24(F) and 12(3) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, the applicant is required to conduct a rectification process for unlawfully commencing with the following activities:

Table 1: Unlawful activities undertaken

Number and date of	Activity	Description of activity undertaken		
the relevant notice	No.	bescription of activity undertaken		
EIA regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as				
	amended			
Government Notice R544 in Government Gazette 33306 of 18 June 2010 (Listing Notice 1)	11	The construction of: (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs; (vi) bulk storm water outlet structures; (vii) marinas; (viii) jetties exceeding 50 square metres in size; (ix) slipways exceeding 50 square metres in size; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line. The composting site is, and the evaporation pond will be, within 32 metres of a watercourse.		
Government Notice R544 in Government Gazette 33306 of 18 June 2010 (Listing Notice 1)	23(ii)	The transformation of undeveloped, vacant or derelict land to — (ii) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares; - except where such transformation takes place - (i) for linear activities; or		

Number and date of	Activity	
the relevant notice	No.	Description of activity undertaken
		(i) for purposes of agriculture or afforestation, in which case Activity 16 of Notice No. R545 applies
Regulations in terms of	the National I	Approximately 13ha of previously disturbed land (outside urban area), used for crop production in the past, was used for the establishment and operation of a poultry waste composting site. Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), as
		amended
Government Notice No. 718 in Government Gazette 32368 of 3 July 2009, Category A	2	The storage including the temporary storage of hazardous waste at a facility that has the capacity to store in excess of 35m³ of hazardous waste at any one time, excluding the storage of hazardous waste in lagoons. Approximately 4 500m³ of poultry waste is currently stored at the composting site.
Government Notice No.		The storage, treatment or processing of animal manure at a facility with a capacity to process in excess of one ton per day. The composting of the poultry litter (chicken manure), hatchery waste,
718 in Government Gazette 32368 of 3 July 2009, Category A	17	abattoir waste and rendering facility waste. Approximately 4 500m³ of poultry waste is currently onsite for composting. Should the facility be authorised, the daily processing/composting rate will be 31m³ of organic waste per day.
Government Notice No. 718 in Government Gazette 32368 of 3 July 2009, Category A	18	The construction of facilities for activities listed in Category A of this schedule. The construction of the above, Category A activities.
Government Notice No. 718 in Government Gazette 32368 of 3 July 2009, Category B	1	The storage including the temporary storage of hazardous waste in lagoons. The storage of contaminated stormwater runoff from the site in an evaporation pond.
Government Notice No. 718 in Government Gazette 32368 of 3 July 2009, Category B	4	The biological, physical of physic-chemical treatment of hazardous waste at a facility that has the capacity to receive in excess of 500kg of hazardous waste per day. The composting of the poultry litter, hatchery waste, abattoir waste and rendering facility waste. Approximately 4 500m³ of poultry waste is currently onsite for composting.



Number and date of	Activity	Description of activity undertaken	
the relevant notice	No.	Description of activity undertaken	
		Should the facility be authorised, the daily processing/composting rate will	
		be 31m ³ of organic waste per day.	
Government Notice No.		The treetment of hererdeue weets using any form of treetment regardless	
Government Notice No.		The treatment of hazardous waste using any form of treatment regardless	
718 in Government		of the size or capacity of such a facility to treat such waste.	
Gazette 32368 of 3 July	5		
2009, Category B		The composting of the poultry litter, hatchery waste, abattoir waste and	
		rendering facility waste.	
Government Notice No.		The construction of facilities for activities listed in Category B of this	
718 in Government	11	Schedule (not is isolation to associated activity).	
Gazette 32368 of 3 July	11		
2009, Category B		The construction of the above, Category B activities.	

2. ENVIRONMENTAL ASSESSMENT PRACTITIONER

Name of firm	Shangoni Management Services (Pty) Ltd.	Shangoni Management Services (Pty) Ltd.			
Postal address	PO Box 74726 Lynwood Ridge Pretoria 0040				
Telephone No.	(012) 807 7036				
Fax	(012) 807 1014/086 643 5360	(012) 807 1014/086 643 5360			
E-mail	lizette@shangoni.co.za				
Team of Environmental Ass	essment Practitioners (EAP) on project				
Name	Qualifications	Responsibility			
Mr Lourens de Villiers	 MSc. Water Resource Management (UP) BSc. (Hons) (PU for CHE) More than 12 years' experience conducting Environmental Impact Assessments and Waste Management License Applications 	Project Director			
Ms Lizette Crous	MSc Environmental Management (University of London)	EAP			



	More than 3 years' experience conducting Environmental Impact Assessments and Waste Management License Applications	
Ms Karien du Plessis	 B.Sc. (Hons) Environmental Management Less than 1 years' experience conducting Environmental Impact Assessments and Waste Management License Applications. 	EAP



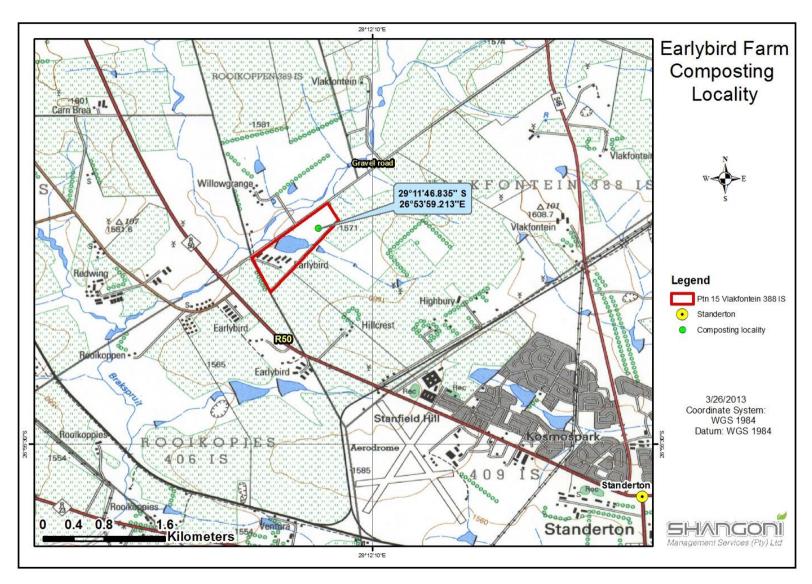


Figure 1: Locality of the Site



3. SITE DOCUMENTATION

The following documentation must be available at the site office at all times:

- A copy of the Basic Environmental Impact Assessment (BA) Report.
- A copy of this Environmental Management Programme (EMP).
- A copy of the Environmental Authorisation.

4. **LEGISLATION**

The table below provides an indication of the main legislation, policies and/or guidelines applicable to the Goldi Farm Composting Site project.

Table 2: Applicable legislation, policies and/or guidelines

Title of legislation, policy or	Administering authority	Aim of legislation, policy or		
guideline		guideline		
	Laws of General Application			
The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)	-	To establish a Constitution with a Bill of Rights for the RSA.		
Environment Conservation Act, 1989 (Act No. 73 of 1989 as amended)	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To control environmental conservation.		
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To provide for the integrated management of the environment, and to regulate the 'Duty of Care' Principle.		
Promotion of Access to Information Act, 2000 (Act No. 2 of 2000 as amended)	-	To give effect to the constitutional right of access to any information held by the State and any information that is held by another person and that is required for the exercise or protection of any rights.		
	Air Quality and Noise			
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	Gert Sibande District Municipality	To reform the law regulating air quality to protect the environment by providing reasonable measures for the prevention of pollution. To provide for national norms and standards regulating air quality monitoring, management and control.		
Highveld Priority Area Air Quality Management Plan	Department of Environmental Affairs	To manage and control emissions within the Highveld Priority Area		



Title of legislation, policy or	Administering authority	Aim of legislation, policy or
guideline		guideline
Environmental Conservation Act, 1989, Noise Control Regulations in terms of Section 25 of the Environmental Conservation Act, 1989 (Act No. 73 of 1989)	Gert Sibande District Municipality	To regulate the generation of noise and its impact on the environment.
	Water Management	
National Water Act (NWA), 1998 (Act No. 36 of 1998)	Department of Water Affairs	To provide for fundamental reform of the law relating to water resources.
	Waste Management	
National Environmental Management: Waste Act (Act No. 59 of 2008)	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation.
GNR. 926 of 29 November 2013 – National Norms and Standards for the Storage of Waste	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To provide a uniform national approach to the management of waste storage facilities, to ensure best practice in the management of waste storage facilities and to provide minimum standards for the design and operation of new and existing waste storage facilities.
GNR. 634 of 23 August 2013 – Waste Classification and Management Regulations	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To regulate the classification and management of waste in a manner that supports and implements the provisions of the Waste Act, to establish a mechanism and procedure for the listing of waste management activities that do not require a Waste Management Licence, to prescribe requirements for the disposal of waste to landfill, to prescribe requirements and timeframes for the management of certain wastes and to prescribe general duties of waste generators, transporters and managers.
	Biodiversity	
National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To provide for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998.



Title of legislation, policy or	Administering authority	Aim of legislation, policy or
guideline		guideline
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	Mpumalanga Department of Agriculture, Rural Development and Land Administration	To provide for control over the utilisation of the natural agricultural resources of South Africa in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants.
National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998)	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To reform the law on veldt and forest fires.
	Soil and Land Management	
National Environmental Management Act, 1998 (Act No. 107 of 1998). National Environmental Management Amendment Act, 2008 (Act No. 62 of 2008).	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To provide for the integrated management of the environment and to regulate the 'Duty of Care' Principle.
Environment Conservation Act, 1989 (Act No. 73 of 1989 as amended)	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To control environmental conservation.
H	eritage and Archaeological Reso	urces
National Heritage Resources Act No 25 of 1999 (Act No. 25 of 1999 as amended)	South African Heritage Resources Agency	To introduce an integrated and interactive system for the management of the national heritage resources; to promote good government at all levels, and empower civil society to nurture and conserve their heritage resources so that they may be bequeathed to future generations
	Protected Areas	
National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003 as amended)	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.
	Planning of New Activities	
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To provide for the integrated management of the environment and to regulate the 'Duty of Care' Principle.



Title of legislation, policy or Administering auth		Aim of legislation, policy or
guideline		guideline
EIA Regulations R 543, R 544, R 545	Mpumalanga Department of	To regulate and control the authorisation
and R 546, dated June 2010) under	Agriculture, Rural Development, Land and Environmental Affairs	of certain listed activities.
the NEMA, 1998 Government Notice (GN) 921: "List of	Land and Environmental Alians	
waste management activities that have, or are likely to have a detrimental effect on the	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	To regulate and control the authorisation of certain waste-related listed activities.
environment", dated 2013.		



5. ENVIRONMENTAL MANAGEMENT PROGRAMME

Refer to the tables below for the EMP. Responsibility is assigned to the relevant parties, keeping in mind that Goldi is ultimately still responsible for ensuring implementation of the EMP. The EMP must be updated should any significant changes occur to the operations with regards to the composting site.

The mitigation measures are set out in the tables below (per project phase), for the composting site.

Note: Mitigation measures, as contained in the tables below, have taken the various alternatives into consideration.

5.1 GOVERNMENT NOTICE NO R544 (LISTING NOTICE 1), ACTIVITY 11 AND 23; GOVERNMENT NOTICE NO 718 (CATEGORY A), ACTIVITY 2, 17 AND 18; GOVERNMENT NOTICE NO 718 (CATEGORY B), ACTIVITY 1, 4, 5 AND 11

5.1.1 Environment in general

Table 3: EMP: Environment in general

Activity: Operation of the composting site					
Aspect:					
 Lack of knowledge amongst workers and contractors in terms of 	of how their actions may impact on the environm	nent.			
Auditing of the composting site.					
		Nature and significance of environmental impact			
Impact Description	Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring and Compliance Reporting	Timeframe	Responsibility
Construction Phase					
As the composting facility is already operational, this phase is not applicable.	N/A				
Operational Phase					
Harm to the environment in general (this can include pollution of soil and water resources, as well as harm to employees and wasteful practices in terms of resource use and waste management).	To prevent harm to the environment by educating workers and contractors.	 All employees must receive training as part of the safety, health and environmental induction, on waste management in order to identify, prevent, minimise or manage actions or behaviours that are likely to cause adverse impacts on air, water, land, fauna and flora as a result of operational activities at the facility. Members of staff must be trained to manage all types of wastes in accordance with the provisions of any norms and standards and legislative requirements applicable to composting facilities. Follow-up training may be required from time to time as new employees commence work or for specific activities that may potentially impact the environment. The facility manager is to maintain accurate records of any training undertaken. Training is to cover all aspects of the EMP and procedures to be followed. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager



Non-compliance to the Environmental Management Programme and Waste Management Licence, if issued, resulting in harm to the environment in general (this can include pollution of soil and water resources, as well as harm to employees and wasteful practices in terms of resource use and waste management).	To ensure that the site is audited adequately in order to ensure compliance to the Environmental Management Programme and Waste Management Licence, if issued.	 Pollution of the biological and physical environment (including habitats for animal and plant species, water resources, land, soil and air) as a result of operations within the facility must at all times be prevented or minimised. The site must be inspected on a daily basis to ensure early detection and addressing of environmental pollution. The relevant authority must be given access to audit or inspect the site at any time and at such a frequency as the authority may decide. The site owner must, during the audit or inspection, make any records or documentation available to the audit or inspection team as may be required. A record of any non-compliance findings by the relevant authority and the manner such non-compliances were addressed must be kept in a file. Internal audits detailing environmental performance of the facility must be conducted bi-annually and official reports prepared. All internal audits must be made available to external auditors and to the relevant authority upon request. External audits must be conducted biennially by an independent auditor and the auditor must prepare an official report documenting the audit findings. The external audit report must be submitted to the Department upon request. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager
Decommissioning Phase					
Closure and decommissioning of the composting facility is not					
anticipated for the foreseeable future. Should the facility close, a detailed closure and rehabilitation plan will be submitted to the					
Mpumalanga Department of Agriculture, Rural Development,					
Land and Environmental Affairs for approval not more than one	N/A				
(1) year prior to closure of the facility. The owner of the facility,	IV/A				
including the subsequent owner of the facility, will remain					
responsible for any adverse impacts on the environment, even					
after operations have ceased.					

5.1.2 Stormwater

Table 4: EMP- Stormwater

Activity: Rain events and rain water (storm water) flowing through	the composting site.				
Aspect: "Clean" rainwater (stormwater) flowing through "dirty" area	as at the composting site.				
		Nature and significance of environmental impact			
Impact Description	Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring and Compliance Reporting	Timeframe	Responsibility
Construction Phase					
As the composting facility is already operational, this phase is not applicable.	N/A				
Operational Phase					
Contamination of the natural "clean" habitat in the vicinity of the composting facility, including soil, surface water and groundwater pollution.	To ensure effective storm water management and to prevent the		Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives	Site Manager



Soil erosion.	contamination of clean storm water	received and processed at the site, including the final product and process	Environmental
Erosion of access roads.	runoff.	residuals stored at the site.	Authorisation
	To prevent soil erosion.	Where leachate is to be used for dust suppression, it may only be applied to areas	
	To prevent erosion of access roads.	within the facility's working surfaces, such as the material processing and storage	
		areas. This is to ensure that leachate does not contaminate storm water runoff.	
		Contaminated runoff from the working surface may be sprayed over the compost	
		to facilitate the decomposition process.	
		The facility must be operated in such a manner that surface water is prevented	
		from mixing with organics received, processed and stored at the facility, including the final product.	
		Runoff and leachate must be diverted to a retention pond from where the affected	
		water can be re-applied to the compost heaps. This will serve as a moisture	
		additive to enhance the composting process.	
		All water that has entered the processing and storage areas, including the	
		contaminated water, must be handled and treated as leachate.	
		General storm water measures	
		The capacity of the proposed storm water infrastructures should accommodate at	
		least a 1:50 year flood event.	
		The containment facility, channel and berms should be inspected and serviced	
		regularly to ensure the design capacity and integrity is maintained. Storm water	
		control measures should be kept clear of obstructions by objects as well as	
		siltation, especially where the velocity of the runoff is induced.	
		Affected runoff water should be controlled and should not contaminate the natural	
		clean habitat within the vicinity of the composing facility.	
		No affected water from the composting facility is allowed to spill into the clean	
		water environment. This should be ensured through design as well as operational	
		control measures.	
		Erosion prevention measures (e.g. grass, cement or rock) should be in place at all	
		concentration points. These areas include roads, channels, berms and other	
		infrastructure that may increase surface runoff.	
		Erosion of access roads should be addressed by implementing energy dissipaters to drain purefect runnif and the roads into the addressed by implementing energy dissipaters.	
		to drain surface runoff away from the roads into the adjacent veldt areas.	
		 Regular maintenance should be conducted to ensure that all infrastructures are functioning according to design capabilities. 	
		Effective management of surface water runoff and clean/affected water separation	
		at the composting facility will contribute to the conservation of downstream, clean	
		water resources.	
		Infrastructure design recommendations and maintenance requirements in the	
		Storm Water Management Plan should be integrated into existing operational management measures.	
		The storm water management measures contained in the Storm Water	
		Management Plan Report should be prioritised to prevent damage or failures	
		during flood events. Efficiency and practicality are key aspects of a successful	
		storm water management plan. Good management is based on separating clean	
		and dirty water and therefore incorporates the fundamental principle of pollution	
		prevention. All proposed measures prioritise the use of gravity and natural	
		drainage lines to provide cost-effective solutions with minimum maintenance	

requirements. The following measures should be implemented, as shown visually	
in the figure below:	
1. A berm has been constructed below the composting facility and acts as a clean	
water diversion, thereby preventing surface runoff from the composting site	
entering the dirty water dam between the composting facility and the chicken	
houses.	
2, 3. A dirty water channel and a containment facility is recommended to contain	
effected runoff from the site. Water within the containment facility will either be	
left to evaporate or will be reused to wet the composting windrows. The	
containment facility should be constructed with a suitable lining (HDPE) to	
prevent seepage to groundwater. A silt trap should be installed prior to the	
entrance of the containment facility to prevent siltation and reduce maintenance	
on the facility.	
·	
An expected volume of 1 070 m ³ will flow to the containment facility during a 1:50	
year, 24-hour flood. A conceptual containment facility with dimensions of 24m x	
24m x 2m will only accommodate a 1:50 year, 24-hour flood event and therefore	
any excess will overflow and will require a suitable spillway design. The	
containment facility should always be operated at a "low as possible" level in	
anticipation of rainfall events. Monitoring should be undertaken within the	
containment facility to assess quality and risks of discharge.	
Note that the location of the dirty water storage facility may require a Water Use	
Licence in terms of the National Water Act (Act No. 36 of 1998) with reference to	
the location of the waste water storage dams and waste water disposal sites in	
close proximity of a watercourse.	
4. It is recommended that a clean water diversion berm be constructed around the	
perimeter of the composting activities to prevent clean runoff from flowing into the	
dirty area. Regular inspections should be conducted to detect and manage	
degradation of the berm. Vegetation growth should be encouraged to improve	
berm stability.	
··· ···· · ·	

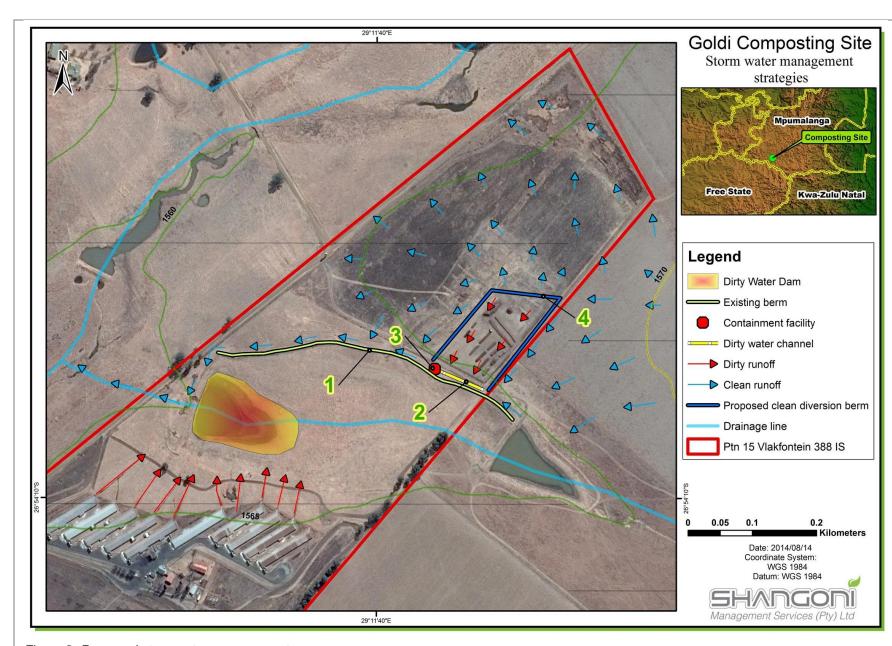


Figure 2: Proposed stormwater management measures

Decommissioning Phase

Closure and decommissioning of the composting facility is not anticipated for the foreseeable future. Should the facility close, a detailed closure and rehabilitation plan will be submitted to the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs for approval not more than one (1) year prior to closure of the facility. The owner of the facility, including the subsequent owner of the facility, will remain responsible for any adverse impacts on the environment, even after operations have ceased.

/A

5.1.3 Geohydrology, surface water, groundwater and soil

Table 5: EMP – Geohydrology, surface water, groundwater and soil

Activity: Operation of the composting site.

Aspect:

- Leaching of water during rain events or if the moisture content of the compost heaps is too high resulting in excess liquid draining awa
- Surface water runoff during rain events.
- Poor waste management.
- Unsanitary conditions on site
- Poor management and spills of hazardous chemical substances including fuel, greases and oils.

		Nature and significance of environmental impact			
Impact Description	Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring and Compliance Reporting	Timeframe	Responsibilit
Construction Phase					
As the composting facility is already operational, this phase is not applicable.	N/A				
Operational Phase					
 The Phase 1 Geotechnical Site Investigation of the site found that the composting process may pose the following hydrogeological impacts: Groundwater contamination form waste leachate; and Pollution of surface water with waste leachate. Runoff and leaching of Nitrogen may contribute to water pollution (Peigné & Girardin, 2004). The vertical soil profile distribution comprises of surficial clayey sand of 0.14m covering black and olive coloured residual clay from dolerite between 0.6m and 1.3m thick followed, in the vicinity of the composting facility, by horizontally bedded and laminated weathered siltstone. This profile, if the moisture content is relatively high and the soils are kept form drying out will provide a virtually impervious layer between the surface activities and the bedrock. The horizontally bedded and laminated weathered siltstone is also nearly impervious to vertical water percolation due to the orientation of the beds and the silt to clay discontinuity infill due to the clayey nature of the rock. 	To prevent contamination of the surface and groundwater from waste leachate from the composting facility.	 Site drainage will need to be well managed to prevent the build-up of moisture on the soil-bedrock interface, which may lead to the development of a seasonal perched water table that may eventually reach surface water courses. The areas where the compostable material will be stored and processed (composted) as well as the storage areas for the final product must be compacted to ensure that the drainage onsite is poor to impervious, to prevent leachate from percolating into the ground. Bulking agents enhance the compost's water-holding capacity and thereby reduce leachate loss (Ulén, 1993). Reduce the amount of water percolating through the compost by covering the compost piles using, for example, a straw or tarpaulin cover (Ulén, 1993). Regular turning of the windrows will reduce the moisture content by bringing wetter material to the surface where it can dry (Hao & Benke, 2008). According to results from the geotechnical assessment of the site, the site soils are not necessarily suitable for use as construction materials. All infrastructure will need special attention to prevent damage due to seasonal soil volume changes in the active clay horizons covering the entire site. This includes special foundations for surface structures and the removal and replacement of clay with inert materials at road constructions. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager
Erosion of soil at the composting site.	To prevent erosion of the soil due to the composting and related activities, especially when surface runoff water is concentrated.	It is the responsibility of the applicant to ensure that storm water control measures are designed and constructed to be capable of withstanding the maximum design flood. It should be taken into consideration that the potential for erosion increases where the surface runoff is concentrated and must be addressed within the	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives	Site Manager



		designs. Designs should incorporate gradual drainage to avoid siltation of storm		Environmental	
		water infrastructure.		Authorisation	
		Protect all areas susceptible to erosion and ensure that there is no undue soil		/ tutriorioutiori	
		·			
		erosion resultant from the composting and related activities.			
		No waste water from the composting site may be discharged or allowed to run into			
		the environment surrounding the site or into any drainage lines or other water			
		systems.			
		A material-screening system must be put in place to prevent non-permissible			
		waste from entering the facility. Non-permissible waste must be intercepted and			
		diverted to a relevant waste disposal facility.			
		All incoming compostable organic waste must be accurately weighed upon			
		entering the composting facility and accurate records of all measured weights must			
		be kept at the facility.			
		Any solid or liquid waste generated at the facility, including contaminated products			
		and process residuals that cannot be processed at the facility must be stored in			
		such a manner as to prevent water pollution and amenity impacts, following the			
		requirements of the National Norms and Standards for the Storage of Waste			
		(GNR. 926 of 29 November 2013).			
		The waste must be sorted at source into various categories (recyclables and non-			
		recyclables) and a document procedure must be implemented to prevent the			
		mixing of general and hazardous waste.			
Soil, surface water and groundwater pollution. Nuisance caused		The waste must be managed in terms of an approved integrated waste			
by odours and unsightly appearance of waste onsite.		management plan or Industry Waste Management Plan, if available.			
	To provent coil ourface and groundwater	Liquid waste must be stored in leak resistant containers which must be inspected		Ongoing and as	
If the incoming waste is not well managed, it may contaminate	To prevent soil, surface and groundwater	weekly for early detection of leaks. The containers must be of sufficient strength	Goldi must verify implementation of	soon as the site	
soil and water resources. The waste can produce contaminants	pollution and nuisance as a result of poor	and structural integrity to ensure that they are unlikely to burst or leak in their	, ' '		Site Manager
such as pathogens, excess nutrients, veterinary	waste management (waste generated at the		the mitigation measures proposed in	receives	Site Mariagei
pharmaceuticals, heavy metals, VOCs, antibiotics, bioaerosols	facility and incoming organic waste to be	ordinary use.	this EMP on a monthly basis	Environmental	
and particulate matter into the air compartment. There is also a	processed at the composting facility).	Waste that is spilled or blown by the wind during operation, handling or storage		Authorisation	
risk of zoonotic transmission and ill-health to humans (Humane		must be contained.			
Society International, 2013).		Hazardous waste must be stored in covered containers that are only opened when			
		waste is added or emptied.			
		The quantities of incoming and processed organics must not exceed the design			
		requirements of the storage and processing areas.			
		Operational measures must minimise contamination of final products to the lowest			
		practicable levels.			
		Records of the quantities of incoming organics and of processed organic/mature			
		compost stored at the facility or leaving the facility must be kept.			
		Waste streams must not be mixed. General waste must be disposed of at a general			
		waste management site and hazardous waste material must be disposed of at a			
		hazardous waste disposal or handling facility.			
		Non-recyclable waste must be stored in containers designed for such waste and			
		must be disposed of at a licenced waste disposal or handling facility.			
		A certificate of compliance with relevant SANS standards regarding the installation			
		of waste storage containers must be kept in a file and made available to the			
		relevant authority on request.			
		All organic compost intended for use as fertilisers must be registered with the			
		DAFF and meet all the necessary requirements as per the Regulations Regarding			
		Drift and moot all the necessary requirements as per the Negalations Negalating			



Fernitives (GMC, Cost of the September 2014) in sever in norms of the Fernitives, internitives, group cannot arrived and september (GMC) of the September (GMC)	
1944, Including any one amendate vasco cold bittered 3.05 of capacital cold finate size in Amenda award connected finate along an included at the airs and along a size of the airs and airs	Fertilisers (GNR 732 of 10 September 2012) issued in terms of the Fertilizers,
Site disposal confinition for hazardous waster amonocal from site must be kept or occasion at the site of the beautous assistance areas transport stronger areas must be recepted with the composition of the site of the sit	Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of
In harbanouse water storage area must be regardered with the competent susmittely. The water storage facility must have carried access covered and signage as supplused in GNN-1, tips of all Neverthee 2013. The water storage facility must be operated as exputated in GNN-1, tips of all Neverthee 2013. All was containing must be produced and any public of GNN-1, tips of all Neverthee 2013. All was contained any facility must be produced and supplused in GNN-1, tips of all Neverthee 2013. Training must be produced acreditationally to ampleyoes watering with wasts. The training programme must records the produced in accordance with GNN-1, tips of all Neverthee 2013. An immergency preparate and an immediate committed in accordance with GNN-1, tips of all Neverthee 2013. An immergency preparate and an immediate committed in accordance with GNN-1, tips of all Neverthee 2013. An immergency preparate and an immediate containing must be conducted in the Neverthee 2013. An immergency preparate and an immediate containing must be conducted in the Neverthee 2013. An immergency preparate and an immediate containing must be conducted in the Neverthee 2013. The water in an immediate distribution of the conducted in the Neverthee 2014. The water in an immediate and an immediate containing must be conducted in the Neverthee 2014. The water in an immediate an immediate an immediate an immediate production of the conducted in the condu	1947), including any other amended version(s) thereof.
 The hebrotists assists protegy area must be agrissed with the component abundancy. The water stronger bodies must have control sources above control and signarge as exposed in CRIR-26-66 of Sourcemap (21)3. The vesses stronger contains must comply with the confidence as explainted in CRIR-160 of 28 November (2013). All vesses stronger contains must comply with the confidence as explainted in CRIR-160 of 29 November (2013). Training must be opticided controllablely to explainted with CRIR-160 of 29 November (2013). All foregraph (Proposedness Plain must be complied in accordance with CRIR-160 of 29 November (2013). All foregraph (Proposedness Plain must be complied in accordance with CRIR-160 of 29 November (2013). Mestering, questing in questing and moves looping must be consecuted in accordance with CRIR-160 of 29 November (2013). Mestering, questing in questing of protection delivers and contained in accordance with CRIR-160 of 29 November (2013). Inglemen et a notice melagories protection-delive stronger (2014). Inglemen et a notice melagories protection-delive stronger (2014). The results management protection-delive stronger of protection-delive stronger (2014). The results management protection-delive stronger of protection-delive stronger (2014). The results management protection-delive stronger (2014) and responsible preserve. The results management protection-delive stronger (2014) and responsible preserve. The results management protection-delive stronger (2014) and responsible preserve. In protection of the season management planting contains contains contains. In protection of the contains of the season management planting contains contains contains. In protection of the contains of the season management planting contains contains contains. All contains of this stronger (2014) and the contains of the season of the contains	Safe disposal certificates for hazardous waste removed from site must be kept on
antitotity. The seasite stronger facility must have correct stress control and signature as explained in CMR, 1001 of 28 November 2013. The variant enough color must be opened as a situative of CMR, 1001 of 29 November 2013. All values derange correctmanes must comply with the conditions del stipulated in CMR, 1001 of 29 November 2013. Training must be provisided continueuely to employees sensing with seatch. The training rangement must be reported continueuely to employees sensing with seatch. The training rangement and include the provisions stipulated in CMR, 1001 of 29 November 2013. All Emergency Proparedoses Plan must be completed in accordance with CMR. 2018 of 29 November 2013. All Emergency Proparedoses Plan must be completed in accordance on accordance with CMR. 2004 of 29 November 2013. Ministering, available, reporting and report feeping must, be conducted in accordance with CMR. 2004 of 29 November 2013. Implaiment in swalls management plan provision. The supplementation of the waster management plan provision and provision and provision. The replanmentation of the waster management plan provision and provision. The replanmentation of the waster management plan provision. The replanmentation of the waster management plan provision and provision must be reported on provision. The replanmentation of the waster management plan provision and provision of the provision of t	record at the site.
antitotity. The seasite stronger facility must have correct stress control and signature as explained in CMR, 1001 of 28 November 2013. The variant enough color must be opened as a situative of CMR, 1001 of 29 November 2013. All values derange correctmanes must comply with the conditions del stipulated in CMR, 1001 of 29 November 2013. Training must be provisided continueuely to employees sensing with seatch. The training rangement must be reported continueuely to employees sensing with seatch. The training rangement and include the provisions stipulated in CMR, 1001 of 29 November 2013. All Emergency Proparedoses Plan must be completed in accordance with CMR. 2018 of 29 November 2013. All Emergency Proparedoses Plan must be completed in accordance on accordance with CMR. 2004 of 29 November 2013. Ministering, available, reporting and report feeping must, be conducted in accordance with CMR. 2004 of 29 November 2013. Implaiment in swalls management plan provision. The supplementation of the waster management plan provision and provision and provision. The replanmentation of the waster management plan provision and provision. The replanmentation of the waster management plan provision. The replanmentation of the waster management plan provision and provision must be reported on provision. The replanmentation of the waster management plan provision and provision of the provision of t	The hazardous waste storage area must be registered with the competent
situation of InCNIN 28 of 28 November 2013. The residence incorpus control must be opened as a stollated in CNIR, 288 of 29 November 2013. All lowest broading control recommend to recommend the conditions as stipulated in GNIR, 280 of 28 November 2013. Tearing must be provided continuously to amployees working with waters. The training programmer must, include the provisions expulsed in GNIR, 280 of 28 November 2013. As invergency Perspeciations Plan must be completed in accordance sets (ANIR, 280 of 28 November 2013. As invergency Perspeciations Plan must be completed in accordance sets (ANIR, 280 of 28 November 2013. Michigania, adulting, reporting and record benefits must be conducted in accordance with GNIR, 280 of 28 November 2011. Implement a seate immagnement planprocedure. The assist immagnement planprocedure is should consider the type of weater, description, source, storage, deposal method, disposal sacily and disposable pressure. The implementation of the weater immagnement planprocedure should extreme. Institution of authorise must be recognised immation, disposal sacily and disposable pressure. The implementation of the weater immagnement planprocedure should extreme. Institution of authorise must be recognised immation, disposal sacily and disposable pressure. The implementation of the source materials are immagnement planprocedure should extreme. Institution of authorise must be recognised immation, disposal extreme the recognised immater. The implementation of the form that because of the pressure of the plan of the plan of the bins, about a think plan of the plan of the bins, about a think plan of the plan of the bins, about a think plan of the bins, about a think plan of the bins, about a think plan of the disposal of general and historium you be temporary that extreme and disposal of general and historium was the analysis of the plan of	authority.
sistuated in CORN, 926 of 28 November 2015. The results incorage hardy must be opened as allocitated in CNR, 926 of 28 November 2015. All lowest betarage containmen must compty with the conditions as assistuated in GNR, 926 of 28 November 2015. Tomorg must be provided continuously in employees working with words. The failining programme must-include the provisions stoutaged in GNR, 926 of 28 November 2015. An immogranty preparathese. Plan must be complicate in accordance with GARR, 920 of 28 November 2015. An immogranty preparathese. Plan must be complicate in accordance with GARR, 920 of 28 November 2015. Monitorine, audition, regorting and record leveling must be conducted in accordance with GARR, 920 of 28 November 2015. Incollecting, audition, regorting and record leveling must be conducted in accordance with GARR, 920 of 28 November 2015. Incollecting, audition, regorting and record leveling must be conducted in accordance with GARR, 920 of 28 November 2015. Incollecting, audition, regorting and record leveling and responsible present. The waster immugrance preparable records. The region must be considered present immunos, dispocal socily and responsible present. In the region of the district and the waster immugranted philariphocodium value immunos. The design of the district and the value immunos must ensure considerance. In containing this, a place of the Considerance must ensure considerance. The design of the district and the value immunos must ensure considerance. In containing this, a place of the design and and the propagal of the disposal of general and the access waster must be commenced accordingly. Waster material must put be temporally state and access and advanced as a cell and and the access and	The waste storage facility must have correct access control and signage as
The washe bronge houliny must be operated as allocated in CNRI, 926 of 29 November 2013. All visite datage containing must comply with the conditions as otherwise. All visites datages containing and programs are precised continuously to employees working all wiscent. The training programs may assist include the provisions signated in CNRI, 920 of 29 November 2013. All Chargegory Propagateless Plan nast be completed in accordance with CNRI, 937 of 29 November 2013. All Chargegory Propagateless Plan nast be completed in accordance with CNRI, 937 of 29 November 2013. Memorang availing, repromise and nests leaguing make be conducted in successfrom with GNRI, 933 of 29 November 2013. In experiment, a visitor invariagement prophysiciation. The existing management prophysiciation standard consister that you of expendite person. The introducement prophysiciation standard consister that you of expendite person. The introducement prophysiciation standard consister that you of expendite person. The introducement prophysiciation standard consister that you of expendite person. The introducement prophysiciation standard consister that you of expendite person. The introducement prophysiciation standard consister that you of expendite person. In the introducement prophysiciation standard consister that you design and responsible person. In the introducement of the consistency standard on the deposal of passes and must be passed on a sequent person of the person of the consistency of the person o	
November 2013. All valued at onage paramiters must comply with the conditions as objusted in GNR. 931 of 28 November 2015. Training must be produced continuously to employees working with weats. The tasking properson must include the provisions applicated in GNR. 991 of 20 November 2013. All Employment programmer must include the provisions applicated in GNR. 991 of 20 November 2013. All Employment productions are part of accord valening must be compliced in accordance with GNR. 991 of 7 November 2013. Include the part of the part of accord valening must be conducted in accordance with GNR. 992 of November 2013. Include the part of the part of the part of the part of valent, objects of the conduction of sufficient valent being a close to the conduction are must ensure that part of the valent of the v	
All some storage contrainment mate concept with the conditions as stipulated in GNR. 2006 of 29 Newmorther 2013. Training programmer by provided continuously to employees existing with unable. The training programmer must be conspiled in accordance with GNR. 200 of 29 Newmorther 2013. And Employee (Perpurations: Plan must be conspiled in accordance with GNR. 200 of 20 Newmorther 2013). International programmer is profiting and record beging must be conducted in accordance with GNR. 200 of 20 Newmorther 2013. International profiting and record beging must be conducted in accordance with GNR. 200 of 20 Newmorther 2013. Implement a vesicle management participationals. The wasternation and profit and pr	
220 of 29 November 2013. Training must be provided continuously to analysyses working with waster. The stanking programme must include the provisions objusted in CNRI. 926 of 29 November 2013. An Energiancy Preparations Plan must be completed in accordance with CNRI. 928 of 28 November 2013. Noticiting, auditing, reporting and record leveling must be conducted in accordance with CNRI. 926 of 29 November 2013. Inclorating a waster immorphism of planty-procedure. The waster immorphism of planty-procedure. The waster immorphism of planty-procedure should correcte the type of waster, describing, support, advance, describing, and responsible person. The implementation of the waster immorphism of planty-procedure should onsure: Installation of authority waster birts, slope or bluk containers, where necessary. The design of the first, slope or bluk containers waster are accessary. The design of the first, slope or bluk containers and ensure accelerations to prevent screppe, must be convent as prevent waster impress and must be placed on impermentation given, such as extremely about a containers. All containers (pirst, slipe or bluk containers) shall be kept in a clean and hypotein creament. Containers (pirst, slipe or bluk containers) shall be kept in a clean and hypotein manner. Containers (pirst, slipe or bluk containers) was the desponal of general and hazardous waster must be enter containery. Vistar material may only be temporarily stored at areas demandated for such access. General and hazardous waster shall be doubt in a manner that prevents he hartcuring of speas. General and hazardous waster shall be doubt in a deposal of impermentation.	
 Training must be provided continuously to employees softening with variety. The training programme must include the provisions officialised in CNR 525 of 29 Momentum 2013. An Emergency Preparachesa Plan must be compiled in accordance with CNR. 100 of 21 Momentum 2014. Mominamy, auditing, recombined orders of longing must be conducted in accordance with CNR. 255 of 29 Movember 2013. Implement a weater management plancycocecure. The water immagement plancycocecure. The vaste management plancycocecure. The supplementation of the outside management plancycocecure. The implementation of the outside management plancycocecure. The implementation of the outside management plancycocecure. Insignation of sufficient voste birs, skyles or bulk containers must resource containment to prevent desegrage, must be curvered to prevent sense. Insignation of sufficient voste birs, skyles or bulk containers must ensure containment to prevent desegrage must be curvered to prevent sense. All containers (birs, skips or bulk containers) will be kept in a clean and hypomen remover. Containers (birs, skips or bulk containers) will be kept in a clean and hypomen remover. Containers (birs, skips or bulk containers) visited for the disposal of general and humanish assessment but be charactered accordingly. Waste material may only be emporatry stored at sees demandated or such storage. General and hazardous waste natural before short of an appropriately demandated by containers and provided by the containers of the storage of the st	
November 2013. An Emergency Preparations Plan must be compiled in acceptance with GAR- 5726 of 28 November 2013. An Emergency Preparations Plan must be compiled in acceptance with GAR- 5726 of 28 November 2013. Montoner, auding, reporting and record keeping must be conducted in accordance with GAR- 5726 of 28 November 2013. Implement a waste management planiprocedure. The vaste management planiprocedure should consider the type of waste, discription, source, storage, disposed method, disposed traility and responsible person. The implementation of the waste management planiprocedure should ensure. Installation of sufficient vaste lost, stops or bulk containers, where necessary. The design of the Sims, stops or bulk containers must ensure containment to prevent segange, must be containers) shall be kept in a clean and hygienic manner. And containers plans, stops containers) shall be kept in a clean and hygienic manner. Containers plans, stops containers) while the disposal of general and hazardisus assets must be demanatered accordingly. Waste maintain may only be temporaryly stored at areas demanrasted or such storage. General vaste shall be stored in a manner that prevents the hundred of such storage. General vaste shall be stored in a manner that prevents the hundred of pasts. General vaste shall be stored in a manner that prevents the hundred of such storage. General vaste shall be stored be reputed to the stored of in appreprinterly demancrated bins. Since are then emptiled into appropriately domancrated sites of the storage of the stored of the stored of the species of in appreprinterly demancrated bins. Since are then emptiled into appropriately domancrated sites or balk containers stored as day on the stored on a meastry landfill site on a regular basis. No bulls up of vastes is permitted only. Side of public confidences should be requested from general and hazardius bundli sites with every vaste disposal. Watter good place to Landfill in accordance waste the November 2012.	
November 2013. • In Timergroup, Preparations Plan must be completed in accordance with GNR. 306 of 29 November 2013. • Monitoring, sudding, reporting and record keeping must be conducted in accordance with GNR, 926 of 29 November 2013. • Implement a waste management plantypicoedure. • The waste management plantypicoedure. • The waste management plantypicoedure should consider the type of waste, description, source, storage, disposal method, disposal fucility and responsible person. • The implementation of the waste management plantyprocedure should ensure: • Installation of sufficient waste bins, siles or bulk containers, where necessary. The design of the films, siles or bulk containers must ensure containers to prevent sepage, must be occurred to prevent water ingress and must be placed on impermentate surfaces within bunded stress. • All containers (bins, siles or bulk containers) while be kept in a clean and hypisical management. • Containers (bins, siles or bulk containers) while be kept in a deen and hypisical management. • Containers (bins, siles or bulk containers) while be kept in a deen and hypisical management. • Containers (bins, siles or bulk containers) while be kept in a deen and soft and hazardous waste must be demanated accordingly. • Waste material may only be temporarily stored at areas demancated or such storage. • General waste shall be betroot in a manner that prevents the harbouring of posts. • General and hazardous waste should always be stored and disprased of separately. • General and hazardous waste should be reposed from general and hazardous familia in accordance or to be special to landle in accordance. • Sale of disposal continuers who to be reposed from general and hazardous landle lists. Bins are then empleted too apportately emerated skips or bulk containers should be removed to a nearty landlell site on a require basis. No bulk out of visite is permitted crisis.	
An Emergency Proprietedness Plan must be campited in accardance with GNR. 926 of 29 November 2013. Monitoring: audding, reporting and record keeping must be conducted in accordance with GNR. 926 of 28 November 2013. Implement awaste management plansyrocadure. The waste management plansyrocadure should consister the type of waste, description, source, storage, disposal method, disposal facility and responsible person. The implementation of the waste management plansyrocadure should ensure: Installation of sufficient waste first, skips or fouls containers, where necessary. The design of the form, skips or fouls containers must ensure containment to prevent seesage, must be covered to prevent waster gives and must be placed on impermeable surfaces which bunded areas. All containers (lone, skips or bulk containers) shall be kept in a clean and hygienic manner. Containers (lone, skips or bulk containers) utilised for the diaposal of general and hazardicas waste must be demanicated accordingly. Waster material may only be temporally stored at streas demacated for such statinge. General waste shall be stored in a manner that prevents the hadacuring of presis. General and hazardous waste should always be stored and disposed of separately. Coeral and hazardous waste should be disposed of in appropriately demacrated bis Sins are then emptied into appropriately demacrated on a final province of the stating of	
Monitoring, auditing, reporting and record keeping must be conducted in accordance with ONR, 926 of 29 November 2013. Implement a waste management plant/procedure. The waste management plant/procedure. The waste management plant/procedure should consider the type of waste, description, source, storage, disposal method, disposal facility and responsible portron. The implementation of the waste management plant/procedure should ensure: Installation of attained waste bins, sleps or bulk containers, where measure, The design of the bins; or bulk containers waste transic containers, where measure, The design of the bins; or bulk containers waste transic containers to prevent seeps, must be covered to prevent water ingress and must be placed on impermeable surfaces within bunded areas. All containers plans, skips or bulk containers will be kept in a clean and hygiène manner. Containers plans, skips or bulk containers will be kept in a clean and hygiène manner. Containers plans, skips or bulk containers will be kept in a clean and hazardous waste must be demandated accordingly. Waste material may on temporally stored at areas demarcated for such storage. General and hazardous waste must be demandated accordingly. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demancated skips or bulk containers should be more often. If required. Skips or bulk containers should be removed to a meatry laradill site or a regular basis. No bull-ty or beat is permitted on the stored on the	
 Monitoring, qualifying, reporting and record keeping must be conducted in accordance with CNR, 925 of 22 November 2013. Implement a wester management plans/procedure should consider the type of waste, description, source, storagement plans/procedure should ensure. The waster management plans/procedure should ensure interest to the past of the past o	An Emergency Preparedness Plan must be compiled in accordance with GNR.
accordance with GNR, 926 of 29 November 2013. Implement a waste management plans/procedure should consider the type of waste, description, source, storage, disposal method, disposal facility and responsible person. The implementation of the waste management plans/procedure should ensure: Installation of sufficient waste bins, skips or bulk containers, where necessary. The design of the bins, skips or bulk containers must ensure containment to prevent seepage, must be covered to prevent water ingress and must be placed on impermedule survival hoursed areas. All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material any be temporarily stored at areas demarcated for such storage. General and hazardous waste must be demarcated accordingly. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptide into appropriately demarcated bins. Bins are then emptide into appropriately demarcated size of bulk containers and bulk containers and bulk containers are should be disposed of separately. General and hazardous waste should be requested from a perspirately demarcated size of bulk containers and size perspirately demarcated sizes of bulk containers and size perspirately demarcated sizes of bulk containers and size perspirately demarcated sizes. Bins are then emptide into appropriately demarcated bins. Bins are then emptide into appropriately demarcated bins. Bins are then emptide into appropriately demarcated bins. Bins are then emptide into appropriately demarcated sizes of bulk containers and size permitted onsite. Size disposal certificates should be requested from general and hazardous landfill is accordance with the Norms and Standards for Disposal to Landfill in	926 of 29 November 2013.
 Implement a wester management plani/procedure. The waster management plani/procedure should consider the type of waste, description, source, generate, disposal facility and responsible person. The implementation of the waster management plani/procedure should ensure: Installation of surficient waster bins, skips or bulk containers, where necessary. The design of the bins, skips or bulk containers must benaute on imprevent severage. The provent severage are be covered to prevent waster ingress and must be placed on imprevent severage to be covered to prevent waster ingress and must be placed on imprevent severage. All containers (bins, skips or bulk containers) shall be kept in a clean and hygiens manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demancated accordingly. Whate material may only be temporarily stored at areas demancated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demancated bins. Bins are then emptied into appropriately demancated ships or bulk containers should be removed to a nearly lardill site on a regular basis. No build-cast is prevented to remove to a nearly lardill site on a regular basis. No build-cast is prevented to requested from general and hazardous landill is to containers should be requested from general and hazardous landill is accordance with the Norms and Standards for Disposal to Lundilli in accordance with the Norms and Standards for Disposal to Lundilli in 	Monitoring, auditing, reporting and record keeping must be conducted in
 The waste management plan/procedure should consider the type of waste, description, source, storage, disposal including disposal facility and responsible person. The implementation of the waste management plan/procedure should ensure: Installation of sufficient waste bins, skips or bulk containers, where necessary. The design of the bins, skips or bulk containers must ensure containment to prevent seepage, must be covered to prevent vater ingress and must be placed on impermental vaces within brunder areas. All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. Containers (ins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demandated accordingly. Waste material may only be temporarily stored at areas demandated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demandated skips or bulk containers and personal manual personal per	accordance with GNR. 926 of 29 November 2013.
description, source, storage, disposal method, disposal facility and responsible person. The implementation of the waste management plan/procedure should ensure: Installation of sufficient waste bins, skips or bulk containers, where necessary. The design of behins, skips or bulk containers must ensure containment to prevent sepage, must be covered to prevent water ingress and must be placed on impermeable surfaces within bunded areas. All containers (kins, skips or bulk containers) shall be kept in a clean and hyglenic manner. Containers (kins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated ships or bulk containers once a day or more often, if required. Skips or bulk containers should be requested from general and hazardous bulk containers once a day or more often, if required. Skips or bulk containers should be requested from general and hazardous landlill sites with every waste disposed for peneral and hazardous landlill sites with every waste disposed for moneral and hazardous landlill sites with every waste disposed for one peneral and hazardous landlill sites with every waste disposed for Disposed to Landlill in accordance with the Norms and Standards for Disposed to Landlill is	Implement a waste management plan/procedure.
 The implementation of the waste management planiphrocedure should ensure: Installation of sufficient waste bins, skips or bulk containers, where necessary. The design of the bins, skips or bulk containers must ensure containment to prevent seepage, must be covered to prevent water ingress and must be placed on impermeable surfaces within bunded areas. All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and bazardous waste must be demarcated accordingly. Waster measured may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately; General and hazardous waste should always be stored and disposed of separately; General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated ships. Bins are then emptied into appropriately demarcated ships. Bins are then emptied into appropriately demarcated ships. Sins are then emptied into appropriately demarcated ships. Sale disposal certificates should be requested from general and hazardous landfi	The waste management plan/procedure should consider the type of waste,
 The implementation of the waste management plan/procedure should ensure: Installation of sufficient waste bins, skips or bulk containers, where necessary. The design of the bins, skips or bulk containers must ensure containment to prevent seepage, must be covered to prevent water ingress and must be placed on impermeable surfaces within bunded areas. All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demancated accordingly. Waste material may only be temporarily stored at areas demancated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste is should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins, Bins are then emptied into appropriately demarcated skips or bulk containers one a day or more often. If required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfills with very waste stipposal. Yet properties to Landfill in accordance with the Norms and Standards for Disposal to Landfill in 	description, source, storage, disposal method, disposal facility and responsible
Installation of sufficient waste bins, skips or bulk containers, where necessary. The design of the bins, skips or bulk containers must ensure containment to prevent seepage, must be covered to prevent water ingress and must be placed on impermeable surfaces within bunded areas. All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should be disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emplied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill in accordance with the Norms and Standards for Disposal to Landfill in	person.
Installation of sufficient waste bins, skips or bulk containers, where necessary. The design of the bins, skips or bulk containers must ensure containment to prevent seepage, must be covered to prevent water ingress and must be placed on impermeable surfaces within bunded areas. All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should be disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emplied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill in accordance with the Norms and Standards for Disposal to Landfill in	The implementation of the waste management plan/procedure should ensure:
The design of the bins, skips or bulk containers must ensure containment to prevent seepage, must be covered to prevent water ingress and must be placed on impermeable surfaces within bunded areas. All containers (bins, skips or bulk containers) shall be kept in a clean and hygleric manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers bonded the more often in general and hazardous land it is possible to a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill site with every wasted skips or by be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	 Installation of sufficient waste bins, skips or bulk containers, where necessary.
prevent seepage, must be covered to prevent water ingress and must be placed on impermeable surfaces within bunded areas. All containers (bins, skips or bulk containers) shall be kept in a clean and hyglenic manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	
on impermeable surfaces within bunded areas. All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated blins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill site with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill in	
 All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No bullic-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as 	
hygienic manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	All containers (bins, skips or bulk containers) shall be kept in a clean and
 Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as 	
and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	
 Waste material may only be temporarily stored at areas demarcated for such storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as 	
storage. General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	
 General waste shall be stored in a manner that prevents the harbouring of pests. General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as 	
 General and hazardous waste should always be stored and disposed of separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as 	
separately. General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	
 General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as 	
demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	
bulk containers once a day or more often, if required. Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	
 Skips or bulk containers should be removed to a nearby landfill site on a regular basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as 	
basis. No build-up of waste is permitted onsite. Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	
Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	
landfill sites with every waste disposal. Waste may only be disposed of at landfill in accordance with the Norms and Standards for Disposal to Landfill as	
in accordance with the Norms and Standards for Disposal to Landfill as	
stipulated in Section 7(1) of the NEMWA, 2008.	
	stipulated in Section 7(1) of the NEMWA, 2008.



Soil, surface water and groundwater pollution. Soil, surface water and groundwater pollution.	Prevent soil, surface and groundwater pollution from unsanitary conditions onsite. To prevent and minimise soil and water pollution as a result of poor management and accidental spills of hazardous chemical substances, including fuel, greases and oils used onsite, and leaking equipment and vehicles.	 composting facility on the groundwater resource. Regular review of the monitoring programme by a competent person to identify areas of improvement as well as areas that require attention. Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers. Ablution facilities shall be inspected and maintained to prevent and minimise blockage and leakages. Ablution facilities are to be serviced weekly or more frequently if required. Toilets should have properly closing doors and be supplied with toilet paper. Awareness of the importance of proper hygiene should be created among employees. Ablating anywhere other than in the toilets shall not be allowed. A septic tank system should be considered instead of french drains. Routine maintenance must be undertaken. Implement a surface- and groundwater monitoring programme. Undertake regular geohydrological studies to determine the impact of the composting facility on the groundwater resource. Regular review of the monitoring programme by a competent person to identify areas of improvement as well as areas that require attention. Identify all chemical substances used onsite including fuel, greases, detergents etc. Material Safety Data Sheets for all chemical products must be kept on site in an easily accessible location to employees. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation Ongoing and as soon as the site receives Environmental Authorisation	Site Manager Site Manager
		 These safe disposal certificates should be kept on file to illustrate compliance with the cradle to grave principle. All waste generated at the facility must be classified in terms of GNR. 634 of 23 August 2013 (National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008): Waste Classification and Management Regulations). Safety data sheets must be obtained or prepared for all hazardous waste as stipulated in GNR. 634 of 23 August 2013. All waste storage containers must be labelled, as stipulated in GNR. 634 of 23 August 2013. Detailed records must be kept of all waste generated, as stipulated in GNR. 634 of 23 August 2013. This includes the classification of the waste, quantities of waste generated and re-used, recycled, recovered, treated or disposed of (in tons or m³ per month), and by whom the waste was managed. Waste manifest documents must be compiled for all hazardous waste generated onsite, as stipulated in GNR. 634 of 23 August 2013 (specifically Annexure 2). All waste transporters must also complete waste manifest documents for each load of waste transported, as stipulated in GNR. 634 of 23 August 2013 (specifically Annexure 2). Waste manifest documentation must be retained for a period of at least five (5) years. No incineration of any kind of waste will be permitted onsite. Implement a surface- and groundwater monitoring programme. Undertake regular geohydrological studies to determine the impact of the 			



France that the graterial and the data charte have cufficient information to public
Ensure that the material safety data sheets have sufficient information to enable the year to take the mace and material safety data sheets have sufficient information to enable the year to take the mace and material safety and enforced the safety and enforced th
the user to take the necessary measures to protect his/her health and safety and
that of the environment.
Develop and implement a dangerous goods management plan based on the
material safety data sheets of all identified chemical substances and the 1995
Hazardous Chemical Substances Regulations in terms of the Occupational Health
and Safety Act, 1993 (Act No. 85 of 1993).
Keep a stock inventory register of all chemicals in the store.
Powders must be stored above liquids.
Proper storage of chemicals in a lockable, well ventilated building.
Ensure adequate access control for the storage area.
Storage areas for hazardous chemicals are to comply with standard fire safety
regulations.
Safety signage including "No Smoking", "No Naked Lights" and "Danger", and
product identification signs, are to be clearly displayed in areas housing chemicals.
Appropriate equipment to deal with emergency spill incidents is to be readily
available on site. This includes fire extinguishers, spill kits for hydrocarbon spills,
drip trays for equipment and/or machinery leaks, drums or containers for
contaminated water.
Chemicals are to be properly labelled and handled in a safety conscious manner.
All personnel handling hazardous chemicals and hazardous materials are to be
issued with the appropriate Personal Protective Equipment (PPE).
Ensure that diesel or fuel tanks are in a bunded area with capacity of holding 110%
of the total storage volume.
The removal of only the daily-required amount of chemicals to be used from the
shed.
If refuelling on site or from drums, the ground must be protected and proper
dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not
be tipped to dispense fuel.
Use of drip trays during filling of machinery or equipment. Drip trays should be
emptied into secondary containers on a regular basis.
Ensure that any spilled chemical cannot exit the designated storage area by
constructing a berm or bump at the exit, or store chemicals in a spill tray.
Immediately clean all spillage of fuels, lubricants and other petroleum based
products.
The contaminated material must be disposed of in accordance with the waste
management procedure.
No hazardous chemical must be discarded in the sewage or stormwater system.
Train staff on the use of chemicals in accordance with the risks as described in the
material data sheets.
Implement a surface- and groundwater monitoring programme.
Undertake regular geohydrological studies to determine the impact of the
composting facility on the groundwater resource.
Regular review of the monitoring programme by a competent person to identify
areas of improvement as well as areas that require attention.
Inspection and maintenance of equipment and vehicles owned by Goldi shall take
place on a regular basis.



	Security shall inspect vehicles on entering the facility to ensure vehicles are in
	sound condition. This will reduce the risk of oil or diesel spillages.
	Equipment and vehicles are to be repaired immediately upon developing leaks.
	Drip trays shall be supplied for all repair work undertaken on machinery on site.
	Drip trays are to be utilised during daily greasing and re-fuelling of machinery and
	to contain incidental spills and pollutants.
	Drip trays are to be inspected daily for leaks and effectiveness and emptied when
	necessary. This is to be closely monitored during rain events to prevent overflow.
	Soil contaminated with hazardous substances, fuel or oil shall be treated as
	hazardous waste and removed from site.
	All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids.
	Onsite fuelling and servicing of equipment and motor vehicles may only occur in a
	designated area. A motor vehicle requiring maintenance must be removed from
	the site and repaired at a garage or service workshop.
Decommissioning Phase	
Closure and decommissioning of the composting facility is not	
anticipated for the foreseeable future. Should the facility close, a	
detailed closure and rehabilitation plan will be submitted to the	
Mpumalanga Department of Agriculture, Rural Development,	
Land and Environmental Affairs for approval not more than one	N/A
(1) year prior to closure of the facility. The owner of the facility,	
including the subsequent owner of the facility, will remain	
responsible for any adverse impacts on the environment, even	
after operations have ceased.	

5.1.4 Fauna, Flora and Wetlands

Table 6: EMP – Fauna, Flora and Wetlands

Activity: Operation of the composting site.					
Aspect:					
Establishment and potential expansion of the composting site.					
Poor veld management.					
		Nature and significance of environmental impact			
Impact Description	Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring and Compliance Reporting	Timeframe	Responsibility
Construction Phase					
As the composting facility is already operational, this phase is not applicable.	N/A				
Operational Phase					
An assessment of the ecological consequences of the composting facility on vertebrates found the following:	To prevent pollution and eutrophication of the waterways in the vicinity of the	• It is suggested that the compost heaps are regularly monitored to ensure their prerequisite microbial health and to ensure that seepage from the compost heaps	Goldi must verify implementation of the mitigation measures proposed in	Ongoing and as soon as the site	Site Manager
	composting site, i.e. the dammed drainage	are properly controlled and ecologically benign.	this EMP on a monthly basis	receives	



Environmental

Authorisation

The site is too small and too homogenous to be ecologically line to the south of the site as well as the | • It is suggested that the furrow between the composting site and the dam capable of supporting genetically viable vertebrate Brakspruit downstream of the dam. downslope from the site be adapted as a trap and attenuation sump for possible populations. It is furthermore agricultural land and was used contaminates as a precaution against excessive runoff. for growing maize until recently. It is currently fallow. Since cessation of maize production, regeneration of basal cover has not been managed. As a consequence, noxious weeds such as cosmos, blackjacks and khaki weeds are rife. The substrate consists of heavy clay that, when dry, is unyielding for burrowing species. • The conservation status of the site is ranked as "Zero", or very little more than that. • Ecological damage on the site is a historical event and another agricultural application (the composting) will not detract from or improve its conservation ranking. However, the site is on the upper edge of a gradient towards a dammed seasonal drainage line. Although the dam wall is broken, the reservoir still holds sufficient water to attract water birds such as sacred ibises, flamingos, geese, ducks and cormorants. • Downstream of this dam the drainage line flows into the perennial Brakspruit that is flagged as being ecologically sensitive. The risk (albeit small) of noxious fluids from the compost heaps contaminating the Brakspruit requires management to prevent pollution and eutrophication of the waterways. This is considered a significant risk given the

•	It is understood that efficient composting does not leach
	hazardous exudates, and so scientifically optimised
	composting procedures should thus be a first level of risk
	management to avoid contamination of the Brakspruit. As a
	second level of risk management, it is suggested that the
	existing furrow between the proposed site and the dam be
	adapted as a trap and attenuation sump for possible
	contaminates as a precaution against excessive runoff. The
	dam itself, especially if its wall is repaired, could be
	developed as a final, third level of risk management.

high clay content of the soils on site, which will provide little absorption of any runoff from the manure stored on site.

 From a vertebrate perspective, no reasonable objection can be raised to a switch in land-use practice from maize production to the efficient disposal of a waste product arising from the mass production of broiler chickens.



One in The regelation on this is a well law about most of the site. The regelation on this is a set all as a work work of the compositing activities. No plant of conservation content were desired. The compositing activities in the position is a single profession of the site. The coverest content were desired in the interference of the desired profession in the compositing activities of not have any improved on the order and the compositing activities of the control of the site. The coverest conductives and value rand from the compositing area between the control of the site. **Married the content is control of the site. **Married the control of the control of the site. **Married the control of the site. **In exame reasonable work of the site. **The exame reasonable work of th	A flora assessment of the composting site found the following:				
Once The weaker and approach control site, see well as about chine of the see the extension of the site of the composing addition. No plants of commontance occords used to be composing addition, by plants of commontance occords used to be composing addition, by plants of commontance occords used to be composing addition, and it is may written by the final power of the see The course composing addition, and the see The course country and the see that the se	A field decedement of the composting die feding the following.				
on the Near Threatened Kninhaffa tunhaffa tunhaffa Thayafara the main	Illegal commencement of activities: On site: The vegetation on site, as well as around most of the site, were in a degraded state prior to the commencement of the composting activities. No plants of conservation concern were observed on the site and it is highly unlikely that these plants persist here. Therefore, the commencement of the composting activities had no negative, direct impacts on the vegetation on the site or its immediate surroundings. Moist grasslands and Brakspruit north of the site: The current composting activities did not have any impacts on the moist grasslands north of the site. Moist grassland south and south-west of the site: The site slopes southwards and water runoff from the composting area flows towards the dammed wetlands south and south-west of the composting site. The vegetation here is not in a natural state and no plants of conservation concern were observed. The composting activities had no direct impact on off-site moist grasslands. However, it is likely that the water separation management system (drainage channel and berm) that formed part of the composting activities, had some impact on the hydrology of the moist grassland. This could be confirmed by a wetland specialist or hydrologist. Wetlands and riparian areas, such as the Brakspruit, are protected by national legislation and must be regarded as sensitive, no-go areas. Therefore, no on-site activities are allowed to impact on these off-site areas. Operation of the composting facility The continuation of the composting activities to the remainder of the site, are not considered to have a detrimental impact on the vegetation of the site or immediate surroundings. However, the composting area could have an indirect impact on the moist grasslands around the site. Polluted water reaching the moist grasslands around the site, as mall possibility exist that pollution could reach the Brakspruit north of the site, could possibly reach the Brakspruit. Betthe Brakspruit about 1.2km downstream from the site, while suitable habit	 to the moist grasslands south and south west of the site. The water management system must be maintained, improved where necessary, and continuously monitored. Note that activities within 500m of a wetland area, as well as release of water into wetlands are likely subjected to a Water Use Licence (WUL). This should be clarified with a representative of the Department of Water Affairs. Ensure that the stormwater management system is adequate in times of high rainfall and flooding. Monitor the effectiveness of the water management system regularly. Ensure that no polluted water reaches the Brakspruit. No edge effect should be allowed to impact on any vegetated area, other than the 	the mitigation measures proposed in	soon as the site receives Environmental	Site Manager



the quality of water released into the wetland area south and

south-west of the site, and subsequently the Brakspruit.

Loss of moist grassland and habitats for fauna species surrounding the site as a result of runaway veld fires.	To prevent the occurrence and spreading of	 A fire break on the inside of the boundary fence surrounding the composting site must be regularly maintained (kept free of vegetation). Should the fire break be burnt, the provisions in terms of the National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998) must be complied with. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager
Decommissioning Phase					
Closure and decommissioning of the composting facility is not					
anticipated for the foreseeable future. Should the facility close, a					
detailed closure and rehabilitation plan will be submitted to the					
Mpumalanga Department of Agriculture, Rural Development,					
Land and Environmental Affairs for approval not more than one	N/A				
(1) year prior to closure of the facility. The owner of the facility,					
including the subsequent owner of the facility, will remain					
responsible for any adverse impacts on the environment, even					
after operations have ceased.					

Visual

Table 7: EMP - Visual

Activity: Operation of the composting site.	Activity: Operation of the composting site.							
Aspect: Existence of the site in view of receptors in the vicinity of	the site, such as adjacent neighbours.							
	Nature and significance of environmental impact							
Impact Description	Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring and Compliance Reporting	Timeframe	Responsibility			
Construction Phase								
As the composting facility is already operational, this phase is not applicable.	N/A							
Operational Phase								
Negative impact on neighbours having to see the composting facility from their residences. Also, a negative impact on the neighbour's value of their properties, being within viewing distance of the composting site.	To minimise the visual impact of the composting site on receptors in the vicinity of	 Operational measures must be put in place to keep the weed, pest and vermin populations as practicably low as possible. Operational measures must be put in place to ensure that vehicles leaving the composting site do not track loose mud and litter outside the facility. Operational procedures that minimise the generation and proliferation of windblown litter must be introduced at the composting facility. A screen of fast growing trees must be planted along the north-western boundary of the composting site to screen the site from the adjacent land owners to the west. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager			



	Scrape or sweep all areas where compostable material is mixed, screened or stored on a daily basis so that minimal compostable material is visible in areas surrounding the process and storage piles.
Decommissioning Phase	
Closure and decommissioning of the composting facility is not	
anticipated for the foreseeable future. Should the facility close, a	
detailed closure and rehabilitation plan will be submitted to the	
Mpumalanga Department of Agriculture, Rural Development,	
Land and Environmental Affairs for approval not more than one	N/A
(1) year prior to closure of the facility. The owner of the facility,	
including the subsequent owner of the facility, will remain	
responsible for any adverse impacts on the environment, even	
after operations have ceased.	

5.1.5 Atmosphere

Table 8: EMP – Atmosphere

Activity: Operation of the composting site.	ctivity: Operation of the composting site.				
Aspect:					
Generation of dust.					
Generation of noise.					
Release of odours and other atmospheric emissions.					
		Nature and significance of environmental impact			
Impact Description	Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring and Compliance Reporting	Timeframe	Responsibility
Construction Phase					
As the composting facility is already operational, this phase is not applicable.	N/A				
Operational Phase					
Degradation of ambient air quality.	To minimise the impact of dust generated by the increased traffic frequency on the ambient air quality.	 A dustcart needs to be onsite to water down dusty roads so that the dust generation does not pose a threat to human health or the environment. Speed bumps or traffic speed signs need to be erected to reduce speeding onsite that could result in the generation of dust. Regular maintenance of vehicles to address wear of tires and breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions. A complaints register must be kept onsite. The register must record the following: Date when complaint was received, name of person who reported the complaint, details of the complaint and when and how concern was addressed. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager
Disturbance and nuisance to neighbours due to operational activities.	To maintain a dB reading of less than 50dB at the site boundary and minimise nuisance to neighbours.	 The site workers and contractors will adhere to the requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) regarding hearing protection and noise control measures. Regular maintenance of vehicles, back-up generators and equipment. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives	Site Manager



	All equipment and machinery should be fitted with adequate silencers.	Environmental
	No sound amplification equipment such as sirens, loud hailers or hooters are to be	Authorisation
	used on site except in emergencies and no amplified music is permitted on site.	
	If work is to be undertaken outside of normal work hours permission must be	
	obtained from the ECO and the facility manager.	
	No noisy work is to be conducted over the weekends or on public holidays.	
	A complaints register must be kept onsite. The register must record the following:	
	Date when complaint was received, name of person who reported the complaint,	
	details of the complaint and when and how concern was addressed.	
	Reasonable measures must be put in place to minimise odour emissions from	
	odorous organic waste such as highly biodegradable organics, at the composting	
	site. Should no effective preventative measures exist, provision must be made for	
	the processing and storage of the waste in enclosed storage and processing	
	facilities.	
	Rapidly biodegradable organics, such as organic sludge, must be covered and the	
	quantity of this material that is exposed to the atmosphere, must be minimised.	
Generation of atmospheric emissions, odours and nuisance to	Alternatively, such organics must be stored in moisture- and vermin-proof bins that	
neighbours.	can withstand the action of organic acids.	
	Organics that are being processed must always be kept reasonably moist [at least]	
Composting processes may result in significant atmospheric	25% (m/m) moisture content] to minimise the emissions of airborne pathogens.	
emissions of Ammonia (NH ₃), Nitrous oxide (N ₂ O) and Methane	Emissions of biogas in aerobic processes must be controlled by keeping the	
	organics adequately aerated.	
(CH ₄). Ammonia is the most significant emission from composting.		
Important factors that affect NH ₃ emissions during composting is	Maintain a minimum oxygen content of at least 5%, by volume, in the free air space of overvice and overige compact pile. Each compact pile must be tested at least.	
temperature, pH, aeration, the initial nitrogen content of the	of every active and curing compost pile. Each compost pile must be tested at least	
manure substrate and the composting process itself (Zhao et al.,	once a week to determine the oxygen content.	
2008). Ammonia emissions increase exponentially during the	Maintain the moisture content of every active and curing compost pile between	Ongoing and as
thermophilic first phase (>45°C) and then linearly during the To minimise the generation of odours at the	45% and 60%, by weight. The moisture content must be tested every day that the	Goldi must verify implementation of soon as the site
mesophilic final stage (25-40°C) of composting (Pagans <i>et al.</i> , composting facility and thus the nuisance to	pile is turned to determine the moisture content.	he mitigation measures proposed in receives Site Manager
2006). High pH (>7) and aeration rate increases NH ₃ volatilisation, neighbours.	Manage every active compost pile such that the initial carbon to nitrogen ratio is	his EMP on a monthly basis Environmental
while a high C:N ratio decreases it (Matsuda et al., 2002).	at least 25:1. The ideal C:N ratio is between 25:1 and 30:1.	Authorisation
	Compost stockpiles and windrows must regularly be turned to ensure that they	Authorisation
Once in the atmosphere, NH ₃ reacts with other particles to form	have sufficient moisture contents. The piles should, however, not be turned more	
smog and reduces air quality (Aneja et al., 2001). N₂O emissions	than required, as this stimulates aerobic decomposition processes and leads to	
contribute to global warming (IPCC, 2007). Atmospheric NH ₃	elevated NH ₃ emissions (Parkinson et al., 2004).	
deposition is also linked to increasing soil acidification and	Cover all active compost piles within 3 hours of each turning with one of the	
accelerated eutrophication of surface water (Aneja et al., 2001).	following: a waterproof covering, a layer of finished compost or soil.	
	Cover all curing compost piles within 3 hours of each turning with one of the	
The final product from the process (compost) can be stored and	following: a waterproof covering, a layer of finished compost or soil.	
applied to the soil with little to no odour, pathogen, weed or fly	Covering the piles has been shown to reduce air exchange and therefore NH ₃	
breeding potential (Zhao <i>et al.</i> , 2008).		
stooding potential (2000).	emissions (Gottschall & Vogtmann, 1988).	
	VOC emissions must be tested quarterly.	
	The quantities of incoming and processed organics must not exceed the design	
	requirements of the storage and processing areas.	
	Operational measures must be put in place to ensure that the storage times for	
	raw organics are controlled so as to minimise emissions of offensive odours.	
	Containers or vehicles transporting waste, including blood, to the composting	
	facility must be leak-proof.	
	, i	



		 Incoming waste should be processed in a timely manner (i.e. when fresh). An Odour Management Plan must be developed and implemented. A complaints register must be kept onsite. The register must record the following: Date when complaint was received, name of person who reported the complaint, details of the complaint and when and how concern was addressed. 	
Decommissioning Phase			
Closure and decommissioning of the composting facility is not			
anticipated for the foreseeable future. Should the facility close, a			
detailed closure and rehabilitation plan will be submitted to the			
Mpumalanga Department of Agriculture, Rural Development,			
Land and Environmental Affairs for approval not more than one	N/A		
(1) year prior to closure of the facility. The owner of the facility,			
including the subsequent owner of the facility, will remain			
responsible for any adverse impacts on the environment, even			
after operations have ceased.			

5.1.6 Infrastructure

Table 9: EMP- Infrastructure

Activity: Increased traffic frequency on road infrastructure.	Activity: Increased traffic frequency on road infrastructure.					
Aspect: Wear of access roads and insufficient vehicle inspections.	Aspect: Wear of access roads and insufficient vehicle inspections.					
		Nature and significance of environmental impact				
Impact Description	Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring and Compliance Reporting	Timeframe	Responsibility	
Construction Phase						
As the composting facility is already operational, this phase is not applicable.	N/A					
Operational Phase						
Wear of access roads, accidents on access roads, unpermitted transport of materials and loss of materials being transported on access roads	To minimise the impact of an increase of traffic on access roads to the facility.	 Ensure that all vehicles using access roads are roadworthy. All loads are to be securely fastened when being transported. All vehicles are to adhere to the tonnage limitation and acquire a permit as required. All speed limits and other traffic regulations on the public roadways must be adhered to. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager	
Decommissioning Phase						
Closure and decommissioning of the composting facility is not anticipated for the foreseeable future. Should the facility close, a detailed closure and rehabilitation plan will be submitted to the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs for approval not more than one (1) year prior to closure of the facility. The owner of the facility, including the subsequent owner of the facility, will remain	N/A					



responsible for any adverse impacts on the environment, even after operations have ceased.

5.1.7 Resource usage

Table 10: EMP – Resource usage

Astivity Llegge of recourses such as weter					
Activity: Usage of resources, such as water.					
Aspect: Inefficient and redundant use of valuable resources (such	as water).				
		Nature and significance of environmental impact			
Impact Description	Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring and Compliance Reporting	Timeframe	Responsibility
Construction Phase					
As the composting facility is already operational, this phase is not applicable.	N/A				
Operational Phase					
Wastage or depletion of valuable resources, such as water, due to inefficient or redundant usage. A water cart will be used to supply water to the composting site.	To prevent the wastage or depletion of valuable resources like water.	 Ensure that all employees have been informed of the importance of natural resources (proper environmental training and awareness). Regular site inspection by supervisors. Inspect operations regularly to determine areas of improvement with regards to resource consumption. Regular maintenance and inspection of equipment such as hose pipes, to prevent leaks. Monitoring of resource consumption. Identify areas where resource consumption can be minimised. Set targets to try minimise resource consumption. Identify technologies and practices that may reduce resource consumption. Implementation of technologies and practices that can reduce resource consumption. Water Running water taps and pipes may not be left unattended. All pipe, hose and tap connections are to be fitted with correct and appropriate plumbing fittings. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager
Decommissioning Phase					
Closure and decommissioning of the composting facility is not anticipated for the foreseeable future. Should the facility close, a detailed closure and rehabilitation plan will be submitted to the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs for approval not more than one (1) year prior to closure of the facility. The owner of the facility, including the subsequent owner of the facility, will remain	N/A				



responsible for any adverse impacts on the environment, even after operations have ceased.

5.1.8 Heritage

Table 11: EMP- Heritage

Activity: Operation of the composting site.					
Aspect: Disturbance of artefacts or sites of cultural heritage (archae	Aspect: Disturbance of artefacts or sites of cultural heritage (archaeological and historical) significance.				
		Nature and significance of environmental impact			
Impact Description	Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring and Compliance Reporting	Timeframe	Responsibility
Construction Phase					
As the composting facility is already operational, this phase is not applicable.	N/A				
Operational Phase					
Loss of artefacts or sites protected by the National Heritage Resources Act, 1999 (Act No. 25 of 1999).	To protect artefacts or sites of cultural heritage (archaeological and historical) significance.	 If any sites, features or objects are found during operational activities, all activities must cease and a heritage expert must be contacted to investigate the site. No sites, features or objects may be disturbed (e.g. picked up) by employees. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager
Decommissioning Phase					
Closure and decommissioning of the composting facility is not anticipated for the foreseeable future. Should the facility close, a detailed closure and rehabilitation plan will be submitted to the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs for approval not more than one (1) year prior to closure of the facility. The owner of the facility, including the subsequent owner of the facility, will remain responsible for any adverse impacts on the environment, even after operations have ceased.	N/A				

5.1.9 Worker's safety and health of neighbouring residents

Table 12: EMP - Worker's safety and health of neighbouring residents

ctivity: Operation of the composting site.							
Aspect:							
Employees conducting work at the composting site and residual	Employees conducting work at the composting site and residents living in the vicinity of the site.						
Unauthorised access to the site	Unauthorised access to the site						
Nature and significance of environmental impact							
Impact Description	Environmental Objective	Management / Mitigation / Monitoring Measures		Timeframe	Responsibility		



			Monitoring and Compliance Reporting		
Construction Phase					
As the composting facility is already operational, this phase is not applicable.	N/A				
Operational Phase					
Employees and neighbouring residents being exposed to pathogens or unhygienic conditions emanating from the composting site. Close proximity to animal wastes increases human exposure to pollutants and pathogens.	To ensure a safe working environment for employees at the composting site.	 Incoming waste should be processed in a timely manner (i.e. when fresh). Installation of showers for all staff working on site. Encourage workers to wash hands regularly. Installation of rodent bait traps and flytraps. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager
Unsafe conditions on site in case of emergency, fire establishment and during the release of flammable gases.	To ensure safe conditions at the composting site.	 Unauthorised access to the site must be prevented, as far as practicable. The site must be fenced off or secured to prevent unauthorised entry. Entrance gates must be manned during operational hours and locked outside of operational hours. Access to the premises should only be by prior arrangement. The composting site must allow ready access to emergency response personnel and equipment. A fire management plan or strategy must be in place, containing at least the following: Fire extinguishers that are in good working condition must be made available at the facility. Fires at the working surfaces must be extinguished immediately through for example, spreading and smothering of burning waste. Sources of fire should be identified and appropriate operational procedures be undertaken to bring the fire under control. A firebreak must be constructed around the perimeter of the site to avoid the spread of fires. Fires should not be lit on or near areas where waste is deposited. Response measures must be put in place to deal with any eventuality of fires resulting from the working surfaces or at any other area on the site. Emergency incidents must be dealt with in accordance with Section 30 of the National Environmental Management: Waste Act, 2008. The design and operation of aerobic composting must ensure that methane generation is minimised. The design and operation of aerobic composting must ensure that controls are in place for the containment, extraction and treatment of any biogas generated. 	Goldi must verify implementation of the mitigation measures proposed in this EMP on a monthly basis	Ongoing and as soon as the site receives Environmental Authorisation	Site Manager
Decommissioning Phase Closure and decommissioning of the composting facility is not					
anticipated for the foreseeable future. Should the facility close, a detailed closure and rehabilitation plan will be submitted to the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs for approval not more than one	N/A				



including the subsequent owner of the facility, will remain	(1) year prior to closure of the facility. The owner of the facility,	ner of the fac	acility,	,																							
responsible for any adverse impacts on the environment even	including the subsequent owner of the facility, will remain	cility, will rem	emain	۱																							
responsible for any adverse impacts on the chiment, even	responsible for any adverse impacts on the environment, even	nvironment, e	even	۱																							
after operations have ceased.	after operations have ceased.																										

6. ENVIRONMENTAL AWARENESS PLAN

The following Environmental Awareness Plan must be implemented by Goldi – A division of Astral Operations Limited in order to inform their employees and contractors of the environmental risk that may result from their work. The plan must be conducted as part of the induction process for all new employees (including contractors) that will perform work in terms of the proposed activities. Proof of all training provided must be kept on-site.

The Environmental Awareness Plan is referred to as the "SHE match" training programme. The training programme focuses on the following aspects:

- 1. Explaining clearly what the environment is and what the environment consist of namely: air, water, soil, fauna, flora and people.
- 2. Once participants have grasped the description of what the environment entails, the training focuses on the potential impacts that the construction and operational activities may have on each one of these environmental components. This is done by making use of the aspect register, where each one of the environmental aspects and associated impacts has been identified.
- To ensure that the training is effective, visual aids are used. Photos are taken of actual and
 potential impacts occurring on site and in some cases role-play is used to illustrate a potential
 impact.
- 4. The participants are then exposed to a poster that reflects the various environmental components. The various photos taken are posted on the poster on a rotational basis and the participants indicate (based on the visual component) what environmental component was or could have been affected by the activities portrayed on the photo.
- 5. By doing this the participants visualise the action as well as the potential consequence (environmental impact) of their action.
- 6. This general awareness training must be done before construction commences and also when new employees start work. The training should be done every two years during the Operational Phase. The poster is posted in the communal area where the impacts are visualised and the photos rotated on a monthly basis.

