



## **Mpact Operations (Pty) Ltd**

### **Springs Recycling Yard Development Project – Draft Environmental Management Programme**

Locality: Springs

Departmental Ref No: Gaut: 002/16-17/E0309

Date: **XXXX**

**SHANGONI**  
*Management Services (Pty) Ltd*



## **DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME (EMP)**

**Mpact Operations (Pty) Ltd**  
**Springs Recycling Yard Development**  
**Project – Draft Environmental**  
**Management Programme**

**Locality: Springs**

**Departmental Ref No: Gaut: 002/16-17/E0309**

**DATE**


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**PROJECT DETAILS**

<b>Department</b>	<b>Gauteng Department of Agriculture and Rural Development</b>
<b>Reference No.:</b>	<b>Gaut: 002/16-17/E0309</b>
<b>Project Title:</b>	<b>Springs Recycling Yard Development Project</b>
<b>Project Number:</b>	<b>MPA-SPR-16-10-10</b>
<b>Compiled by:</b>	<b>Karien Venter</b>
<b>Date:</b>	<b>XXXX</b>
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<b>Location:</b>	<b>Springs</b>
<b>Technical Reviewer:</b>	<b>Jan Nel</b>
<b>Technical Review Sign-off</b>	



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## LIST OF ABBREVIATIONS

EAP	–	Environmental Assessment Practitioner
ECO	–	Environmental Control Officer
EIA	–	Environmental Impact Assessment
GDARD	–	Gauteng Department of Agriculture and Rural Development
GN	–	Government Notice
NEMA	–	National Environmental Management Act, 1998
NEM:WA	–	National Environmental Management: Waste Act, 2008
NWA	–	National Water Act, 1998
R	–	Regulation
SAHRA	–	South African Heritage Resources Agency
SWMP	–	Storm Water Management Plan

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# 1. INTRODUCTION

Mpac Operations (Pty) Ltd is one of the largest paper and plastic packaging businesses in Southern Africa. Mpac Paper, a division of Mpac Operations (Pty) Ltd, operates a paper recycling plant in Springs on Erf 228 New Era Extension 1.

## 1.1 The EMPr in terms of the requirements of NEMA

Appendix 4 the 2014 EIA Regulations indicates aspects that must be included in the EMPr. Table 1 below indicates the parts where information has been provided as part of this EMPr.

Table 1: The EMPr in terms of the requirements of NEMA

Regulation No:		Description	Section of EMPr
GN982 Appendix 4 (1) (a)	(i)	the EAP who prepared the EMPr; and	2
	(ii)	the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	
GN982 Appendix 4 (1) (b)		a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	2
GN982 Appendix 4 (1) (c)		a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;	2
GN982 Appendix 4 (1) (d)		a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-	5
	(i)	planning and design;	
	(ii)	pre-construction activities;	
	(iii)	construction activities;	
	(iv)	rehabilitation of the environment after construction and where applicable post closure; and	
	(v)	where relevant, operation activities;	
GN982 Appendix 4 (1) (e)		a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	5
GN982 Appendix 4 (1) (f)		a description of proposed impact management actions, identifying the manner in which the impact	5



Regulation No:	Description	Section of EMPr
	management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to -	
	(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	
	(ii) comply with any prescribed environmental management standards or practices;	
	(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and	
	(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	
GN982 Appendix 4 (1) (g)	the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	
GN982 Appendix 4 (1) (h)	the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	7
GN982 Appendix 4 (1) (i)	an indication of the persons who will be responsible for the implementation of the impact management actions;	7
GN982 Appendix 4 (1) (j)	the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	7
GN982 Appendix 4 (1) (k)	the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	7
GN982 Appendix 4 (1) (l)	a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	
GN982 Appendix 4 (1) (m)		6
	(i) an environmental awareness plan describing the manner in which-	6
	(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and	





Regulation No:		Description	Section of EMPr
	(ii)	risks must be dealt with in order to avoid pollution or the degradation of the environment; and	
GN982 Appendix 4 (1)(n)		any specific information that may be required by the competent authority.	8

## 1.2 Specific triggered listed activity

Mpact proposes to expand and upgrade the existing paper storage area on site. The proposed development involves the increase in the hard-standing surface area for the storage of recyclable material. It involves the implementation of improvement stormwater management, comprehensive fire protection and better traffic control measures.

Table 2: Listed activities in terms of GNR 983 and GNR 984 of 4 December 2014

Number and date of the relevant notice	Activity No	Description
GN.R. 983 (Listing Notice 1) of 4 December 2014	Listing Notice 1, Activity 27	The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for- (i) The undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
		The expansion and upgrading of the storage yard will involve the clearance of ±4 hectares of vegetation. According to SANBI the site is located within the Soweto Highveld Grassland Ecosystem. However, according to the vegetation specialist, no remnants of the Soweto Highveld Grassland are present on site any more.
GN.R. 985 (Listing Notice 3) of 4 December 2014	Listing Notice 3, Activity 2 c (iv)	The development of reservoirs for bulk water supply with a capacity of more than 250 cubic metres. <b>(c) Gauteng:</b> iv. Sites identified as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans.
		A fire water tank with a capacity of 850m <sup>3</sup> will be installed on site. An attenuation pond with a capacity of 1400m <sup>3</sup> will also be constructed on site.
GN.R. 985 (Listing Notice 3) of 4 December 2014	Listing Notice 3, Activity 4 c (iv)	The development of a road wider than 4 metres with a reserve less than 13.5 metres. <b>(c) In Gauteng:</b> iv. Sites identified as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans.



		<p>Access roads with the following dimension will be constructed on site:</p> <ul style="list-style-type: none"> <li>▪ 8.25 m wide and 122 m long</li> <li>▪ 12.25 m wide and 96 m long</li> <li>▪ 22.5 m wide and 130 m long</li> <li>▪ 25 m wide and 250 m long</li> </ul> <p>The two main entrances will be widened by <math>\pm 2</math> m.</p>
GN.R. 985 (Listing Notice 3) of 4 December 2014	Listing Notice 3, Activity 12 a (i)	<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p><b><u>(a) In Eastern Cape, Free State, Gauteng, Limpopo, North West and Western Cape Provinces:</u></b></p> <p>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004.</p> <p>The expansion and upgrading of the storage yard will involve the clearance of <math>\pm 4</math> hectares of vegetation. According to the Gauteng Conservation Plan, the site is located within an Ecological Support Area and an Important Area.</p>

The proposed locality of the Mpack Operations Storage Yard is shown in the figure below.





## 2. ENVIRONMENTAL ASSESSMENT PRACTITIONER

<b>Name of firm</b>	Shangoni Management Services (Pty) Ltd.	
<b>Postal address</b>	PO Box 74726 Lynwood Ridge Pretoria 0040	
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<b>E-mail</b>	karien@shangoni.co.za	
<b>Team of Environmental Assessment Practitioners (EAP) on project</b>		
<b>Name</b>	<b>Qualifications</b>	<b>Responsibility</b>
Mr Jan Nel	<ul style="list-style-type: none"> <li>• M.Sc. Environmental Management (University of the Free State).</li> <li>• More than 20 years' experience conducting Environmental Impact Assessments and Waste Management License Applications.</li> </ul>	Project Director
Ms Karien Venter	<ul style="list-style-type: none"> <li>• B.Sc. (Hons) Environmental Management.</li> <li>• More than 2.5 years' experience conducting Environmental Impact Assessments and Waste Management License Applications.</li> </ul>	EAP



### 3. SITE DOCUMENTATION

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

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

### 4. LEGISLATION

Table 3: Applicable legislation, policies and / or guidelines

Title of legislation, policy or guideline	Administering authority	Aim of legislation, policy or guideline	Reference where in the document it is applied
<b>Laws of General Application</b>			
Environment Conservation Act, 1989 (Act No. 73 of 1989 as amended)	Gauteng Department of Agriculture and Rural Development	To control environmental conservation.	Section 5
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Gauteng Department of Agriculture and Rural Development	To provide for the integrated management of the environment, and to regulate the 'Duty of Care' Principle.	Section 1.2
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.	Monitoring?
<b>Air Quality and Noise</b>			
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	Ekurhuleni Metropolitan 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.	Section 5
<b>Water Management</b>			



Title of legislation, policy or guideline	Administering authority	Aim of legislation, policy or guideline	Reference where in the document it is applied
National Water Act (NWA), 1998 (Act No. 36 of 1998)	Department of Water and Sanitation	To provide for fundamental reform of the law relating to water resources.	Section 5
Government Notice (GN) 509, dated 2016 under the NWA, 1998		Replaces the need for a water user to apply for a licence in terms of the National Water Act (Act 36 of 1998) provided that the water use is within the limits and conditions of this General Authorisation.	Section 5
<b>Waste Management</b>			
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)	National Department of 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.	Section 5
<b>Biodiversity</b>			
National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	Gauteng Department of Agriculture and Rural Development	To provide for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998.	Section 5
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	Gauteng Department of Agriculture and Rural Development	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.	Section 5
<b>Soil and Land Management</b>			
National Environmental Management Act, 1998 (Act No. 107 of 1998).	Gauteng Department of Agriculture and Rural Development	To provide for the integrated management of the environment and to regulate the 'Duty of Care' Principle.	Section 5



Title of legislation, policy or guideline	Administering authority	Aim of legislation, policy or guideline	Reference where in the document it is applied
Environment Conservation Act, 1989 (Act No. 73 of 1989 as amended)	Gauteng Department of Agriculture and Rural Development	To control environmental conservation.	Section 5
<b>Heritage and Archaeological Resources</b>			
National Heritage Resources Act, 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.	Section 5
<b>Protected Areas</b>			
National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) as amended	Gauteng Department of Agriculture and Rural Development	To provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.	Section 5
<b>Planning of New Activities</b>			
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Gauteng Department of Agriculture and Rural Development	To provide for the integrated management of the environment and to regulate the 'Duty of Care' Principle.	Section 1.2
EIA Regulations R 983, R 984, R 985, dated December 2014) under the NEMA, 1998	Gauteng Department of Agriculture and Rural Development	To regulate and control the authorisation of certain listed activities.	Section 1.2
Ekurhuleni Metropolitan Municipality Spatial Development Framework	Ekurhuleni Metropolitan Municipality	To indicate to members of the public and others with an interest in the city, the desired long term proposals which will affect the spatial form of the Ekurhuleni Metropolitan area.	Section 5



Title of legislation, policy or guideline	Administering authority	Aim of legislation, policy or guideline	Reference where in the document it is applied
Ekurhuleni Metropolitan Municipality Integrated Development Plan	Ekurhuleni Metropolitan Municipality	Guides and informs all planning, budgeting, management and decision-making processes in the municipality.	Section 5





## 5. ENVIRONMENTAL MANAGEMENT PROGRAMME

Refer to the tables below for the EMP. Responsibility is assigned to the relevant parties, keeping in mind Mpact Operations (Pty) Ltd 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 Springs Recycling Yard.

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

### 5.1 EMP – Government Notice No. R983 (Listing Notice 1), Activity 27, Government Notice No. 985 (Listing Notice 3), Activity 2C(IV), 4C(IV) and 12A(I)

#### 5.1.1 Planning and Design Phase

Table 4: EMP – Planning and Design Phase

Activity:						
<ul style="list-style-type: none"> <li>Design and planning of the proposed upgrade of the storage yard.</li> </ul>						
Aspect:						
<ul style="list-style-type: none"> <li>Inadequate planning and design of the storage yard.</li> </ul>						
Nature and significance of environmental impact						
Impact Description		Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring Compliance and Reporting	Timeframe	Responsibility
Project Phase Applicability	Planning and Design Phase	X	<ul style="list-style-type: none"> <li>Development planning and design, including stormwater and wastewater management, must ensure that the construction and operation of the storage yard will not impact on the environment. All environmental components are considered in the design and the planning of the layout and operations of the proposed facility.</li> <li>Project engineers will compile a method statement, outlining the construction methodologies. Mitigation measures will be included in this method statement which must be approved by the ECO and be available on site.</li> <li>The approved EMP and Environmental Authorisation must be binding on the construction contractors and included in the service agreements.</li> <li>The contractor is to ensure that all employees, including subcontractors and their employees, attend Environmental Awareness Training, which include the conditions of the EMP and Environmental Authorisation, prior to commencing work onsite.</li> <li>Adequate planning and scheduling of construction activities to allow for disruptions caused by rain and wet conditions. The scheduling must make provision for environmental training/awareness raising for workers prior to the commencement of construction. Records of training must be maintained.</li> <li>Appoint an independent Environmental Control Officer (ECO) prior to the commencement of the construction phase.</li> <li>A complaints register must be maintained onsite from the first day of construction.</li> <li>Ensure that the Environmental Authorisation and EMP are kept at the construction site.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the planning and design of the storage yard.	<ul style="list-style-type: none"> <li>Facility manager</li> <li>Design engineer</li> </ul>
	Construction					
	Operation					
	Decommissioning					
Harm to the environment due to inadequate planning and design of the storage yard.		To prevent harm to the environment through effective and thorough planning and design, taking the environment into consideration.				

5.1.2 Construction and Operational Phases

Table 5: EMP – Soil, Surface Water, Stormwater and Groundwater

Activity:						
<ul style="list-style-type: none"> <li>The storage and handling of raw material.</li> <li>Site clearance.</li> <li>The handling, storage, mixing and disposal of cement and concrete.</li> </ul>						
Aspect:						
<ul style="list-style-type: none"> <li>Inadequate storage of raw material.</li> <li>Soil erosion.</li> <li>The inadequate handling, storage, mixing and disposal of cement and concrete.</li> </ul>						
Nature and significance of environmental impact						
Impact Description		Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring Compliance and Reporting	Timeframe	Responsibility
Project Phase Applicability	Planning and Design Phase					
	Construction	X				
	Operation	X				
	Decommissioning					
Decreased impact on soil and groundwater due to removal of raw material from open ground.		To remove the impact on soil and groundwater.	<ul style="list-style-type: none"> <li>All raw material must be stored on concreted areas. No raw material may be stored on open ground.</li> <li>All water flow must be directed through controlled management into existing drainage system.</li> <li>The Stormwater Management Plan must be implemented effectively (Theo van Niekerk &amp; Associates, 2016).</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>Construction contractor</li> <li>Facility Manager</li> <li>ECO</li> </ul>
Exposure to soil erosion. Erosion can lead to destruction of natural habitats and sedimentation of proximate watercourses.		To prevent soil erosion and subsequent sedimentation of proximate watercourses.	<ul style="list-style-type: none"> <li>The contractor is to ensure that all reasonable measures are taken to limit erosion during the construction phase.</li> <li>All areas susceptible to erosion should be protected. Erosion protection measures include sand bags, cut-off drains and/or berms.</li> <li>Retain vegetation and soil in position as long as possible. It should only be removed immediately before construction.</li> <li>Colonisation of the disturbed areas should be monitored to ensure that vegetation cover is sufficient within one growing season, if not, the areas has to be rehabilitated.</li> <li>Construction should be conducted in winter months if possible to limit further impacts such as sedimentation within the canal or downstream waterbodies.</li> <li>The Stormwater Management Plan must be implemented effectively(Theo van Niekerk &amp; Associates, 2016).</li> <li>Landscaping and revegetation should be done after construction.</li> <li>Re-vegetated areas should be continuously monitored to verify whether re-vegetation was successful.</li> <li>Fertilisers can be used to promote vegetation growth.</li> <li>Ensure regular maintenance of the attenuation structure to ensure adequate capacity and successful containment of any silt.</li> <li>Should additional erosion control measures be required, these must be installed in consultation with the design engineer.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>Construction contractor</li> <li>Facility Manager</li> <li>ECO</li> </ul>



<p>Soil and surface water pollution as a result of spillage, improper handling, storage, mixing or disposal of cement and concrete.</p>	<p>To prevent soil and surface water pollution as a result of spillage, improper handling, storage, mixing or disposal of cement and concrete.</p>	<ul style="list-style-type: none"> <li>• Cement may only be mixed on an impermeable surface or areas to be covered with cement or concrete.</li> <li>• Dry cement and cement spillages must be removed from the soil surface to prevent an impermeable layer forming. The cement must be disposed of with building rubble.</li> <li>• Ready-mix trucks may only clean chutes into foundations or a dedicated cleaning pit.</li> <li>• Bricklayers and plasterers are to minimise any cement spills or runoff in their work area. They also have to ensure that the work area is cleaned of all cement spillage at the end of each workday.</li> <li>• Both used and unused cement bags are to be stored in weatherproof containers so as not to be affected by rain or runoff.</li> <li>• Soil contaminated by cement or concrete, including residue produced by the washing of cavities, are to be removed immediately after the spillage has occurred and disposed of appropriately.</li> <li>• Measures must be taken to prevent dirty water (wash water) from contaminating a watercourse. Water has to be contained by excavations or berms.</li> <li>• The following measures should be implemented at the concrete mixing area: <ul style="list-style-type: none"> <li>▪ Concrete may only be mixed in designated areas.</li> <li>▪ Stormwater must be diverted around the mixing area.</li> <li>▪ After use, all waste remaining at the mixing area must be removed and disposed of appropriately.</li> </ul> </li> </ul>	<p>Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.</p>	<p>During the construction and operational phases.</p>	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> <li>• ECO</li> </ul>
<p>Soil, groundwater and surface water pollution through increased contaminated wash water or contaminated stormwater runoff.</p>	<p>To prevent soil, groundwater and surface water pollution due to increased contaminated wash water or stormwater runoff.</p>	<ul style="list-style-type: none"> <li>• All water flow must be directed through controlled management into existing drainage system.</li> <li>• No wastewater/ wash water may be disposed of on site, onto the soil or into any water body.</li> <li>• Runoff from the washing of equipment is to be contained by excavations or berms.</li> <li>• The attenuation channel and stormwater pipes and channels are to be cleaned and de-slugged at the beginning of the raining season, at least once a month during the raining season and at the end of the raining season.</li> <li>• Stormwater flow from the undeveloped area to the west must be diverted away from the attenuation pond to prevent sediment build-up into the attenuation channel.</li> <li>• The Stormwater Management Plan must be implemented effectively.</li> </ul>	<p>Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.</p>	<p>During the construction and operational phases.</p>	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> <li>• ECO</li> </ul>
<p>Soil, surface water and groundwater pollution due to poor waste management.</p>	<p>To prevent soil, groundwater and surface water pollution due to poor waste management</p>	<ul style="list-style-type: none"> <li>• Building waste must be disposed of appropriately.</li> <li>• Sufficient waste bins, skips or bulk containers must be available on site.</li> <li>• All containers must be kept clean and hygienic.</li> <li>• General waste should always be stored or disposed of separately from hazardous waste.</li> <li>• Containers for different waste streams must be demarcated accordingly.</li> <li>• Waste must be stored in a manner that prevents the harbouring of pests.</li> </ul>	<p>Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.</p>	<p>During the construction and operational phases.</p>	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> <li>• ECO</li> </ul>
<p>Soil, surface water and groundwater pollution due to unsanitary conditions onsite.</p>	<p>To prevent soil, groundwater and surface water pollution due to unsanitary conditions onsite.</p>	<ul style="list-style-type: none"> <li>• Sufficient ablution facilities must be provided to contractors.</li> <li>• Ablution facilities should be located on impermeable surfaces at least 50m from wetlands, drainage lines or places where stormwater may accumulate.</li> <li>• Ablating anywhere other than in the toilets must not be allowed.</li> <li>• Ablution facilities are to be secured.</li> <li>• The contractor shall ensure that no chemicals and/or waste from the ablution facilities are spilled on the ground at any time.</li> <li>• Ablution facilities should be serviced as a minimum on a weekly basis or more frequently if required.</li> <li>• Contents are to be removed from site on a regular basis.</li> <li>• Ablution facilities should be inspected and maintained to prevent and minimise blockage and leakages.</li> <li>• Toilets should have properly closing doors and be supplied with toilet paper.</li> <li>• Awareness of the importance of proper hygiene should be created among employees.</li> </ul>	<p>Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.</p>	<p>During the construction and operational phases.</p>	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> <li>• ECO</li> </ul>
<p>Soil, surface water and groundwater pollution due to poor management and accidental spills of hazardous chemical substances including fuel, greases and oils used onsite.</p>	<p>To prevent soil, groundwater and surface water pollution due to poor management and accidental spills of hazardous chemical substances.</p>	<ul style="list-style-type: none"> <li>• Identify all hazardous chemical substances used onsite, including fuel, greases and oils.</li> <li>• Obtain the material safety data sheet of each of the hazardous chemical substances. These must be kept readily available onsite.</li> <li>• Ensure adequate access control of the chemical storage area.</li> <li>• Safety signage including "No Smoking", "No Naked Lights" and "Danger", and product identification signs, are to be clearly displayed in areas housing chemicals.</li> </ul>	<p>Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.</p>	<p>During the construction and operational phases.</p>	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> <li>• ECO</li> </ul>



		<ul style="list-style-type: none"> <li>• 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.</li> <li>• Chemicals are to be properly labelled and handled in a safety conscious manner.</li> <li>• All personnel handling hazardous chemicals and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE).</li> <li>• Ensure that diesel/fuels tanks are in a bunded area with capacity of holding 110% of the total storage volume.</li> <li>• Appropriate equipment for dispensing chemicals must be used at all times.</li> <li>• Immediately clean all spillages of fuels, lubricants and other petroleum based products.</li> <li>• Soil and other material contaminated with hazardous chemical substances shall be treated as hazardous waste and removed from site.</li> <li>• No hazardous chemicals may be discarded in the sewage or stormwater system.</li> <li>• Train staff on the use of chemicals in accordance with the risks as described in the material safety data sheets.</li> </ul>			
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Table 6: EMP – Atmosphere and Noise

Activity:						
<ul style="list-style-type: none"> <li>• Construction activities.</li> <li>• Excavation activities, loading and offloading activities and vehicles travelling to and from the site.</li> <li>• Increased traffic to and from the site.</li> <li>• Operational activities of the storage yard.</li> </ul>						
Aspect:						
<ul style="list-style-type: none"> <li>• Dust generation.</li> <li>• Release of emissions by vehicles.</li> <li>• Generation of noise and nuisance.</li> </ul>						
Nature and significance of environmental impact						
Impact Description		Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring Compliance and Reporting	Timeframe	Responsibility
Project Phase Applicability	Planning and Design Phase					
	Construction	X				
	Operation	X				
	Decommissioning					
Degradation of ambient air quality due to dust and exhaust emission generation.		To prevent the degradation of ambient air quality due to dust and exhaust emission.	<ul style="list-style-type: none"> <li>• A water cart should be available onsite to water down dusty roads and cleared areas.</li> <li>• A complaints register must be kept on site. 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 the concern was addressed.</li> <li>• Open areas should be re-vegetated as soon as possible.</li> <li>• Regular maintenance of vehicles and equipment should be undertaken. Optimal engine combustion will allow for “cleaner” exhaust emissions.</li> <li>• Vehicles and equipment must be switched off when not in use. No unnecessary idling should be allowed.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> <li>• ECO</li> </ul>
Disturbance of sensitive receptors due to the generation of noise.		To prevent disturbance of sensitive receptors due to noise generation.	<ul style="list-style-type: none"> <li>• Activities that will generate the most noise should be scheduled during times of the day that will result in the least disturbance to neighbours.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> </ul>

		<ul style="list-style-type: none"> <li>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.</li> <li>If excessively noisy work is to be conducted or work is to be conducted outside normal work hours, neighbours should be informed in advance.</li> <li></li> </ul>			<ul style="list-style-type: none"> <li>ECO</li> </ul>
Increased traffic.	To reduce environmental impacts and impacts on the surrounding area due to increased traffic.	<ul style="list-style-type: none"> <li>Access roads should be kept open.</li> <li>Traffic signs, promoting the flow of traffic to and from the site, must be erected on site.</li> <li>Security measures at the gate should be streamlined in order to promote the flow of traffic.</li> <li>A complaints register should be kept on site. 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 the concern was addressed.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>Construction contractor</li> <li>Facility Manager</li> <li>ECO</li> </ul>

Table 7: EMP – Fauna and Flora

<b>Activity:</b> <ul style="list-style-type: none"> <li>Disturbance and stockpiling of soil. Movement of construction vehicles and equipment.</li> <li>Construction and operational activities associated with the storage yard.</li> </ul>						
<b>Aspect:</b> <ul style="list-style-type: none"> <li>Spread of alien invasive plant species through contaminated soil or the movement of construction vehicles and equipment.</li> </ul>						
Nature and significance of environmental impact						
Impact Description		Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring Compliance and Reporting	Timeframe	Responsibility
Project Phase Applicability	Planning and Design Phase					
	Construction	X				
	Operation	X				
	Decommissioning					
Spread of alien invasive vegetation.		To prevent the spread of alien invasive vegetation	<ul style="list-style-type: none"> <li>Category 1 alien invasive vegetation must be removed from the site.</li> <li>Applications for permits for all Category 2 alien invasive species that remain on site would have to be launched with DEA.</li> <li>Landscaping and re-vegetation should be conducted with indigenous vegetation.</li> <li>All alien seedlings and saplings must be removed as they become evident for the duration of construction.</li> <li>Manual/mechanical removal is preferred to chemical control.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>Construction contractor</li> <li>Facility Manager</li> <li>ECO</li> </ul>
Removal of alien invasive vegetation.		To promote the removal of alien invasive vegetation.	<ul style="list-style-type: none"> <li>Category 1 alien invasive vegetation must be removed from the site.</li> <li>Applications for permits for all Category 2 alien invasive species that remain on site would have to be launched with DEA. If no applications will be launched, the applicable vegetation have to be removed.</li> <li>All alien seedlings and saplings must be removed as they become evident for the duration of construction.</li> <li>Manual/mechanical removal is preferred to chemical control.</li> <li>Removed vegetation must be properly disposed of to prevent further spread of alien invasive species.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>Construction contractor</li> <li>Facility Manager</li> <li>ECO</li> </ul>
Possible impact on or loss of a bee colony within a large <i>Schinus molle</i> tree at the following GPS coordinates: 26°15'22.34"S, 28°24'43.59"E.		To protect the bee colony on site.	<ul style="list-style-type: none"> <li>The <i>Schinus molle</i> tree should be conserved with the associated bee colony.</li> <li>The area around the tree should be demarcated with danger tape or another form of effective demarcation.</li> <li>Workers, including construction workers and contractors, must be informed on the presence of the bee colony.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>Construction contractor</li> <li>Facility Manager</li> <li>ECO</li> </ul>

		<ul style="list-style-type: none"> <li>• Conservation measures and safety guidelines must be included in training material.</li> <li>• The development must be contained within the proposed footprint.</li> </ul>			
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Table 8: EMP – Resource Usage

Activity:						
<ul style="list-style-type: none"> <li>• Usage of resources, such as electricity and water.</li> </ul>						
Aspect:						
<ul style="list-style-type: none"> <li>• Inefficient and redundant use of valuable resources (electricity and water).</li> </ul>						
Nature and significance of environmental impact						
Impact Description		Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring Compliance and Reporting	Timeframe	Responsibility
Project Phase Applicability	Planning and Design Phase					
	Construction	X				
	Operation	X				
	Decommissioning					
Wastage and depletion of valuable resources (electricity and water) due to inefficient or redundant usage.		To prevent the wastage or depletion of valuable resources (electricity and groundwater).	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• Ensure that all employees have been informed of the importance of natural resources (proper environmental training and awareness).</li> <li>• Regular site inspection by supervisors should be conducted.</li> <li>• Inspect operations regularly to determine areas of improvement with regards to resource consumption.</li> <li>• Equipment must be regularly inspected and maintained.</li> </ul> <p><b>Water</b></p> <ul style="list-style-type: none"> <li>• Regular inspection and maintenance of all boreholes, tanks, reservoirs, toilets, water pipes, valves, taps and the attenuation pond must be conducted.</li> <li>• Leaking tanks, reservoirs, taps, toilets and pipes must be repaired immediately.</li> <li>• Running water taps and pipes may not be left unattended.</li> </ul> <p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>• Save electricity by turning off lights when not in use.</li> <li>• Energy saving light bulbs should be used.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> <li>• ECO</li> </ul>

Table 9: EMP – Risk of Fire

Activity:						
<ul style="list-style-type: none"> <li>• Storage of paper.</li> </ul>						
Aspect:						
<ul style="list-style-type: none"> <li>• Increased risk of fire.</li> </ul>						
Nature and significance of environmental impact						
Impact Description		Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring Compliance and Reporting	Timeframe	Responsibility



Project Phase Applicability	Planning and Design Phase					
	Construction	X				
	Operation	X				
	Decommissioning					
Increased risk of fire.		To reduce and manage the risk of fire at the storage yard.	<ul style="list-style-type: none"> <li>• Firefighting equipment must be maintained in good working order.</li> <li>• All workers and contractors must receive sufficient training with regards to fire prevention and firefighting measures.</li> <li>• No open fires are permitted on site.</li> <li>• Emergency procedures must include measures for events of fire outbreaks.</li> <li>• Emergency numbers should be readily available on site.</li> <li>• Firewalls should be effectively maintained on site.</li> <li>• The storage area must be inspected continually.</li> <li>• Avoid extensive storage times by processing material as soon as possible.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> <li>• ECO</li> </ul>

Table 10: EMP – Heritage and Palaeontology

Activity:						
<ul style="list-style-type: none"> <li>• Construction and operation of the storage yard.</li> </ul>						
Aspect:						
<ul style="list-style-type: none"> <li>• Disturbance of artifacts or sites of cultural heritage (archaeological and historical) significance.</li> <li>• Disturbance of fossils and bedrock of Palaeontological sensitivity.</li> </ul>						
Nature and significance of environmental impact						
Impact Description		Environmental Objective	Management / Mitigation / Monitoring Measures	Monitoring Compliance and Reporting	Timeframe	Responsibility
Project Phase Applicability	Planning and Design Phase					
	Construction	X				
	Operation	X				
	Decommissioning					
Disturbance or destruction of sites, features or artifacts of archaeological and/or historical importance.		To protect artefacts or sites of cultural heritage (archaeological and historical) significance.	<ul style="list-style-type: none"> <li>• If, during any construction or operational activities, any sites, features and objects of a cultural heritage (archaeological or historical) nature are exposed, an expert should be called in to investigate and suitable mitigation measures must be implemented.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> <li>• ECO</li> </ul>
Disturbance or destruction of fossils or bedrock of palaeontological sensitivity.		To protect fossils and features of palaeontological significance.	<ul style="list-style-type: none"> <li>• The ECO must be informed of the fact that a Very High Palaeontological Sensitivity was allocated to the entire development site and due to the highly-weathered nature of the sedimentary rocks, no significant fossils is expected before the start of excavations for foundations.</li> <li>• The entire team at the construction site must be introduced to Palaeontological material that is likely to be found on site. It is best to pre-arrange a once-off information session with the Palaeontological specialist, who must present a simple and understandable, preferably audio-visual presentation (in an "interpreted voice" of the majority of the contractual workers on site), during the initial site visit that must form part of the EMPr for the project.</li> <li>• Mitigation measures as identified in the "Chance Find Protocol" must be included the the EMPr of the project.</li> <li>• A reasonable budget must be allocated to ensure compliance with the legal responsibility of the developer in terms of the proper conservation of and storage of Palaeontological Heritage.</li> <li>• The SAHRA must be informed of the content of this "Chance Find Protocol" and EMPr arrangements.</li> </ul>	Mpact Operations must verify the implementation of the mitigation measures proposed in this EMP.	During the construction and operational phases.	<ul style="list-style-type: none"> <li>• Construction contractor</li> <li>• Facility Manager</li> <li>• ECO</li> </ul>

### **5.1.3 Closure Phase**

Decommissioning of the storage yard and recycling facility is not anticipated for the foreseeable future. Should the storage yard or recycling facility be decommissioned a detailed closure and rehabilitation plan will be submitted to the Gauteng Department of Agriculture and Rural Development prior to decommissioning.





## 6. ENVIRONMENTAL AWARENESS PLAN

The following Environmental Awareness Plan must be implemented by Mpact Operations (Pty) Ltd 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 consists 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.
3. 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.



## 7. MONITORING

Table 11 below refers to the monitoring plan for the Springs Recycling Yard.

*Table 11: Monitoring measures to be implemented*

Method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Environmental Control Officer.
Frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Monthly during the construction phase. Annually during the operational phase.
Responsible for the implementation of the impact management actions;	Mpac Operations (Pty) Ltd.
Time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	During the relevant phases, as indicated in Section 5 of this document.
Mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Independent compliance audits.
Program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Monthly compliance audit reports to be submitted to the competent authority by the designated ECO, for the duration of the construction phase.  Annual compliance audit reports to be submitted to the competent authority by the designated auditor, for the duration of the operational phase.

