

	<p align="center">Work Instruction</p>	<p align="center">Medupi Power Station Project</p>
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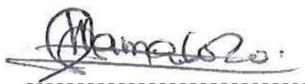
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1. Introduction

This document describes the approach in which waste both general and hazardous will be managed on the Medupi construction site. This requires active involvement of both the Team Medupi and its contractors. It does not relieve any employee or contractors from fulfilling requirements set in the environmental legislations.

2. Scope

2.1.1 Purpose

The purpose of the Medupi Waste Management Work Instruction is to outline critical elements of managing waste at Medupi Construction Project. The Project aims to avoid, minimise and dispose of waste in an environmentally sound manner and in compliance to the applicable legislative requirements.

2.1.2 Applicability

This document shall apply throughout Eskom Group Capital Medupi Power Station.

2.1.3 Effective date

This work instruction shall be effective as of the 19 August 2019.

2.2 Normative/Informative References

2.2.1 Normative

Document Title	Document Number
Project Execution Plan	200-5919
Project Quality Plan	200-1679
Development and Change of Medupi QMS Documents	200-5665
Document and Record Management Procedure	200-1680
Unit Construction Procedure Manual	200-163680
Medupi Power Station Integrated Waste Management Plan	200-73768
Monthly Environmental Compliance Report	200-84052
Environmental Incident Management Procedure	200-10506
The Construction Environmental Management Plan for the Medupi Coal-fired Power Station in the Lephalale Area, Limpopo Province	200-35208
Medupi Power Station Water Use Licence and Amendments	27086983
Medupi Environmental Policy Statement	200-73979
Eskom Waste Management Standard	32-245

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2.2.2 Informative

Document Title	Document Number
Procedure for the handling of HSE Non-conformities and Corrective and Preventive Action	200-38426
National Water Act (Act No. 36 of 1998)	External
National Environmental Management Act (Act No. 107 of 1998)	External
National Environmental Management: Waste Act (Act No. 59 of 2008)	External
Occupational Health and Safety Act (Act No. 85 of 1993) and Construction Regulations	External
National Norms and Standards For the Remediation of Contaminated Land and Soil Quality, GN 331, 2 May 2014	External
Waste Classification and Management Regulations, GN 634, 23 August 2013	External
National Norms and Standards for the Assessment of Waste for Landfill Disposal, GN 635, 23 August 2013	External
National Norms and Standard for Disposal of Waste to Landfill, GN 636, 23 August 2013	External
Hazardous Chemical Substance Act (Act No. 15 of 1973)	External
National Road Traffic Act (Act No. 85 of 1993)	External
National Waste Information Regulations, GN 625, 13 December 2012	External
Waste Tyre Regulation, GN 1064, 29 September 2019	External
National Norms and Standards for the Sorting, Shredding, Grinding, Crushing, Screening, Chipping or Bailing of General Waste, GN 1096, 11 November 2017, GN 926,	External
List of waste management activities that have, or are likely to have, a detrimental effect on the environment, GN 921, 29 November 2013	External
Regulations regarding the control of the import of waste, GN 22, 21 January 2019	External
Basel Convention on the trans-boundary movement of hazardous waste and their disposal	External
Stockholm Convention on the identification and removal of persistent organic pollutants	External
Rotterdam convention on the banning of hazardous substances	External
Montreal Convention, the phase-out of ozone depleting substance	External
Kyoto Protocol on the removal of greenhouse gases	External
Bamako Convention on the Ban of the Import into Africa and the control of Transboundary movement of Hazardous Waste within Africa	External
SANS ISO 14001 Environmental Management System: Requirements with guidance for use	External
SANS 10248 Management of Health Care Waste	External
SANS codes for transportation of hazardous waste - 10228 to 10234, 10206, 10265 at minimum.	External
ISO 9001 Quality Management Systems	External

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2.3 Definitions

Term	Definition
Best Environmental (BPEO) Practical Option	Means the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term.
Best practice	Means to perform or exercise a particularly activity or activities in the most suitable, appropriate, advantageous or best advised manner in order to achieve the highest standards while performing or excising such activity or activities.
Building and demolition waste	Means all waste produced during the construction, alteration, repair or demolition of any structure, and includes building rubble, earth, vegetation and rock displaced during such construction, alteration, repair or demolition. means waste, excluding hazardous waste, produced during the construction, alteration, repair or demolition of any structure, and includes rubble, earth, rock and wood displaced during that construction, alteration, repair or demolition
Business waste	Means waste that emanates from premises that are used wholly or mainly for commercial, retail, wholesale, entertainment or government administration purposes.
Colour coding	Means the use of colour on a container or bag or the label attached to such that serves to identify the category of waste it contains.
Contaminant	Means any substance present in an environmental medium at concentrations in excess of natural background concentrations that has a potential to cause harm to human health or the environment.
Contractor	An employer who performs construction work and includes principal contractors. Contracted companies are specifically viewed as employers in their own right, as per the OHS Act.
Cradle to grave principle	A policy of controlling a waste from its inception to its ultimate disposal.
Disposal	Means the burial, deposit, discharge, abandoning, dumping, placing or release of any waste into, or onto, any land.
Domestic waste	Means waste, excluding hazardous waste, that emanates from premises that are used wholly or mainly for residential, educational, health care, sport or recreation purposes,
Duty of care	Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.
Environment	The surrounding in which humans exist that is made up of: <ul style="list-style-type: none"> i. the earth's land, water and atmosphere, ii. micro-organisms, plant and animal life, iii. any part or combination of (i) and (ii) and the interrelationship among and between them and iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.
Extended Producer Responsibility Measures	Means measures that extend a person's financial or physical responsibility for a product to the post-consumer stage of the product.

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General waste	Means waste that does not pose an immediate hazard or threat to health or to the environment, and includes domestic waste, building and demolition waste, business waste and inert waste.
General Waste Storage Facility	Means a storage facility that has a capacity to store in excess of 100m ³ of general continuously.
Health care risk waste	Means the hazardous portion of the waste generated at the health care facility. This is any waste that poses a hazard to human health or the environment.
Hazardous waste	Any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment and includes hazardous substances, materials or objects within business waste, residue deposits and residue stockpiles.
Hazardous Waste Storage Facility	Means a storage facility that has a capacity to store in excess of 80m ³ of hazardous continuously.
Integrated pollution and waste management	Is a holistic and integrated system and process of management, aimed at pollution prevention and minimisation at source, managing the impact of pollution and waste on the receiving environment and remediating damaged environments.
Life-cycle assessment	Means a process where the potential environmental effects or an impact of a product or service throughout the life of that product or service is being evaluated.
Litter	Means any object or matter which is left behind or discarded by a person in any place except in an approved receptacle provided for that purpose or at a waste handling facility.
Precautionary principle	Where a risk is unknown; the assumption of the worst case situation and the making of provision for such a situation.
Pollution	Any change in the environment caused by substances, radioactive or other waves, noise, odours, dust or heat emitted from any activity, including the storage or treatment of waste or substances, construction and the provisions or services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such effect in the future.
Polluter pays principle.	The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.
Recycle	Means a process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material.
Remediation	Means the management of a contaminated site to prevent, minimise, or mitigate harm to human health or the environment.
Re-use	Means to utilise the whole, a portion of or a specific part of any substance, material or object from the waste stream for a similar or different purpose without changing the form or properties of such substance, material or object.
SANS 10234	Means the latest edition of the South African National Standard Globally Harmonised System of Classification and Labelling of Chemicals.
Temporary storage	Means a once off storage of waste for a period not exceeding 90 days.

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Waste	<p>Means:</p> <ul style="list-style-type: none"> a) any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object can be re-used, recycled or recovered and includes all wastes as defined in Schedule 3 to the Act (NEMWA, 2014); or b) any other substance, material or object that is not included in Schedule 3 that may be defined as a waste by the Minister by notice in the Gazette, but any waste or portion of waste, referred to in paragraphs (a) and (b), ceases to be a waste— <ul style="list-style-type: none"> (i). once an application for its re-use, recycling or recovery has been approved or, after such approval, once it is, or has been re-used, recycled or recovered; (ii). where approval is not required, once a waste is, or has been re-used, recycled or recovered; and (iii). where the Minister has, in terms of section 74 of NEMWA, exempted any waste or a portion of waste generated by a particular process from the definition of waste; or where the Minister has, in the prescribed manner, excluded any waste stream or a portion of a waste stream from the definition of waste.
Waste classification	<p>Means establishing, in terms of SANS 10234</p> <ul style="list-style-type: none"> a) whether a waste is hazardous based on the nature of its physical, health and environmental hazardous properties (hazard classes), and b) the degree or severity of hazard posed (hazard categories).
Waste disposal facility	Means any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premise.
Waste management facility	Means a place, infrastructure, structure or containment of any kind, wherein, upon or at, a waste management activity takes place and includes a waste transfer station, container yard, landfill site, incinerator, a lagoon, recycling or a composting facility.
Waste handling facility/Temporary Waste Storage Facility	Means a facility that is used to accumulate and temporarily store waste before it is transported to a recycling, treatment or waste disposal facility.
Waste generator	Means any person whose actions, production processes or activities, including waste management activities, results in generation of waste.
Waste manager	Means any person that re-uses, recycles, recovers, treats or disposes of waste.
Waste transporter	Means any person who conveys or transfers waste (a) between the waste generator and a waste management facility; or (b) between waste management facilities.
Waste manifest system	Means a system of control documentation, which accompanies a load of hazardous waste transported from the point of generation to the waste management facility.
Waste stream	Means a type of waste, including building waste; business waste; bulky waste; dailies; domestic waste; garden waste; hazardous waste; health care risk waste; industrial waste; recyclable waste and special industrial waste.
Waste management activity	Means any activity listed in Schedule 1 or published by notice in the Gazette under section 19 of the NEMWA, 2008.
Waste minimisation programme	Means a programme that is intended to promote the reduced generation and disposal of waste.

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2.4 Abbreviations

Abbreviation or Acronym	Description
DWS	Department of Water and Sanitation
DEA	Department of Environmental Affairs
EA	Environmental Authorisation
ECO	Environmental Control Officer
EMP	Environmental Management Plan
GWIS	Gauteng Waste Information System
GN	Government Notice
HCRW	Health Care Risk Waste
NEMWA	National Environmental Management : Waste Act
ODS	Ozone-Depleting Substances
SANS	South African National Standards
SABS	South African Bureau of Standards
SAWIS	South African Waste Information System
SP	Stockpile
TM	Team Medupi
WML	Waste Management Licence
WUL	Water Use License

2.5 Roles and Responsibilities

a) Responsible (R)

Those who do the work to achieve the task. There is at least one role with a participation type of responsible, although others can be delegated to assist in the work required.

b) Accountable (A) (also approver or final approving authority)

The one ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those responsible. In other words, an accountable must sign off (approve) work that responsible provides. There **must** be only one accountable specified for each task or deliverable.

c) Consulted (C) (sometimes counsel)

Those whose opinions are sought, typically subject matter experts; and with whom there is two-way communication.

d) Informed (I)

Those who are kept up-to-date on progress, often only on completion of the task or deliverable; and with whom there is just one-way communication.

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Table 1 RACI Matrix

Process Step/Activity	TM Project Director	TM Construction Manager	TM Unit Manager	TM Contracts Manager	TM Construction Site Support	TM Environmental Manager	Environmental Practitioners	Principal Contractors	ECO
Ensure that the requirements of this Waste Management Procedure are implemented	I	I	C,I	R,I	C,I	A	R	R	I

Responsibilities

TM and contractors must, within their powers, take all reasonable measures to:

- Avoid the generation of waste and where such generation cannot be avoided, to minimise the toxicity and amount of waste that is generated;
- Reduce, re-use, recycle and recover waste;
- Where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner;
- Manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour or visual impacts; and
- Prevent the waste from being used for any unauthorised purpose.
- TM and Contractors must take reasonable steps to inform the waste transporters and/or managers of the impact of that waste on health and the environment. Waste generated at the project must be disposed of in an environmentally sound manner and life-cycle approach or cradle to grave principle should be implemented for all waste stream generated.
- Service providers used for transportation and disposal of waste are responsible to ensure that facilities used complies with the conditions of the permits/licenses issued as well as all applicable legislations, but the ultimate legal responsibility lies with the waste generators to ensure that the waste is treated, recycled and disposed of correctly. It is required that service providers and waste disposal facilities be inspected/audited by the Contractors, TM Environmental Department and the ECO's in order to fulfil the duty of care, the life-cycle approach to waste management and cradle to grave responsibilities with regard to waste management.

2.6 Related / Supporting Documents

- [1] Appendix A- Anti-Litter Policy Statement (200 - 103621)
- [2] Appendix B – Project’s WIS Registration Certificate (200 - 209909)

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[3] Appendix C –Waste Removal Checklist (348 - 669234)

[4] Appendix D – Medupi Waste Inventory Template (200-218938)

[5] Appendix E – Medupi Waste Hierarchy Implementation Template (200-218940)

[6] Appendix F – Medupi Monthly Waste Reporting Template (200-218936)

[7] Appendix G - Document Self-Assessment Checklist (200 – 75592)

3. Document Content

3.1 Waste Management Strategy

In order to ensure that waste management activities within Medupi Power Station Project (the Project) are undertaken in an environmentally sound manner, contractors are required to develop a strategic planning tool (waste management plan/procedure) that serves as a first step towards informed planning and accountability for waste management within their areas of responsibility.

Waste management plans/procedure shall be developed and implemented to meet the requirements stipulated in Part 5 of the National Environmental Management Waste Act, 2008 (herein referred to as NEMWA). The plan/procedure should amongst others include:

- Waste minimisation programme which sets out actions and target dates to minimise waste and improve resource efficiency and meet the objectives of the waste management procedure/plan. The programme should follow the waste hierarchy and look at ways to prevent, reduce and reuse waste, before recycling and responsible disposal. The programme should also look at actions for education and awareness;
- All waste streams that arise from the activities of the business/company; and
- Measures to prevent any employee or person, under his or her supervision from contravening applicable environmental legislation, as well as consequences of non-conformances to applicable standard or procedures (internal and external).

3.2 Environmental Management Principles

The NEMWA, 2008 introduced a number of guiding principles into South African environmental legislation including the life-cycle approach to waste management, producer responsibility, the precautionary principle and the polluter pays principle. Chapter 5 of the National Environmental Management Act, 1998 (herein referred to as NEMA) provides instruments for integrated waste management. NEMWA also places a duty of care on any person who may cause significant pollution or degradation of the environment, requiring them to institute measures to either prevent pollution from occurring, or to minimise and rectify the pollution or degradation where it cannot be avoided.

The NEMWA echoes the duty of care provision by obliging holders of waste to take reasonable measures to implement the waste management hierarchy.

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3.3 Waste avoidance, waste generation and waste minimisation

The Project focus is no longer looking at how to handle and dispose of waste once it is generated (End of Pipe) but rather at how to avoid waste generation. This is the first step in a list of actions that relate to managing wastes in a sustainable way called the “waste management hierarchy” – trying at first to avoid creating waste, then minimising what is produced by re-using, recycling, recovering and treating where necessary and disposing of as a last resort.

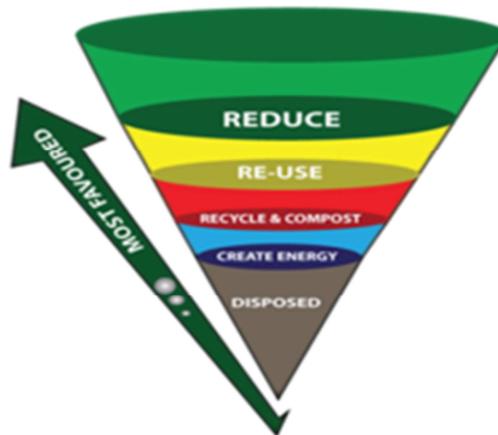


Figure 1: Waste Management Hierarchy

Waste is an inevitable consequence of any development and hence it must be managed in an integrated and sustainable manner. The National Waste Management Strategy defines a waste management hierarchy, which is based on the above-mentioned principles (see Figure 1). One of the mechanisms to resolve this problem is to identify what portions of the waste stream can most readily be avoided, minimised and/or recycled. To do this effectively, quantitative understanding of the total waste stream is necessary.

Team Medupi (TM) and Contractors are required to conduct a waste stream analysis by developing, implementing and maintaining a Waste Inventory (attached 200-218862) which reflects all waste generated. In addition all waste streams must be assessed by following the hierarchy of waste as per attached Waste Hierarchy Implementation Template (200-218854).

Waste should be separated as near to the source (point of generation) as possible where this is reasonably practiceable. This limits the costs of labour and/or machinery associated with sorting after collection, prevent recyclables like office paper from being spoiled or contaminated by other waste streams and prevent legal contraventions (disposal of mixed waste (hazardous and general) at inappropriate waste disposal facilities). Separating recyclables into different types will increase their value when sold to the processors of the materials and reduce the overall cost of managing waste.

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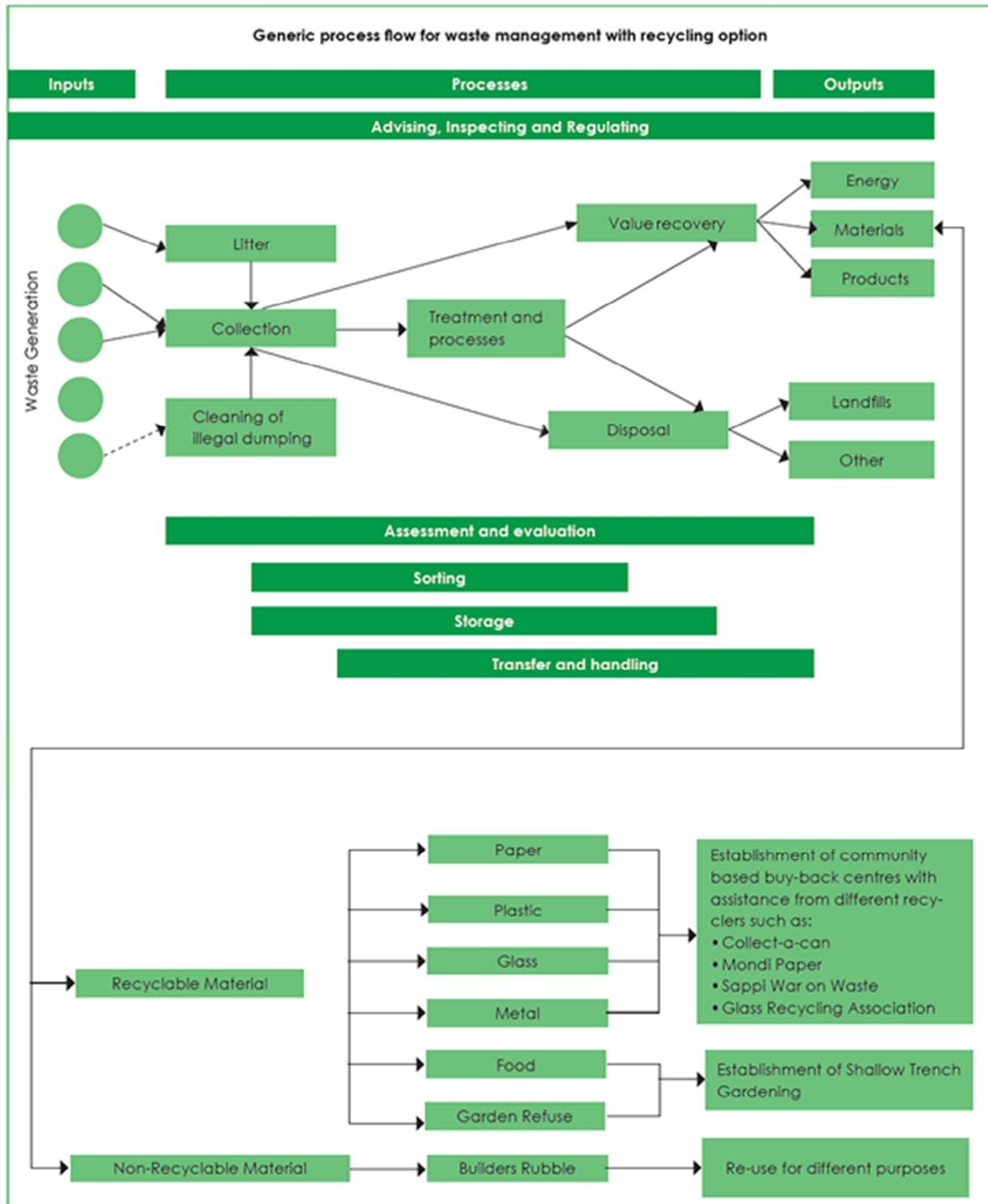


Figure 2: Generic process flow waste management with recycling option

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3.4 Waste classification

Waste Classification and Management Regulations, GN 634 (the Regulations) came into effect on the 23 August 2014. All waste generated at the project must be classified in accordance with SANS 10234 within one hundred and eighty (180) days of generation with the exception of the waste stream mentioned below:

3.4.1 General waste

- Domestic waste;
- Business waste not containing hazardous waste or hazardous chemicals;
- Non-infectious animal carcasses;
- Garden waste;
- Waste packaging;
- Waste tyres;
- Building and demolition waste not containing hazardous waste or hazardous chemicals; and
- Excavated earth material not containing hazardous waste or hazardous chemicals

3.4.2 Hazardous waste

- Asbestos Waste;
- PCB waste or PCB containing waste (> 50 mg/kg or 50 ppm);
- Expired, spoilt or unusable hazardous products and Health Care Risk Waste (HCRW); and
- Mixed waste - general waste which contains hazardous waste or hazardous chemicals

Wastes that were classified in terms of the Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste (2nd Edition, 1998; Department of Water Affairs and Forestry), or waste for which an alternative classification was approved by the Department of Water Affairs or Department of Environmental Affairs, prior to the Regulations taking effect, must be re-classified in terms of Regulation 4(2) within three (3) years from the date of commencement of these Regulations.

Waste must be separated at source and must not be mixed or diluted solely to reduce the concentration of its constituents prior to classification. Waste must be re-classified every five (5) years, or within 30 days of modification to the process or activity that generated the waste, changes in raw materials or other inputs, or any other variation of relevant factors. Waste that has been subjected to any form of treatment must be reclassified, including any waste from the treatment process.

Generators of hazardous waste must ensure that a safety data sheet for the hazardous waste is prepared in accordance with SANS 10234 as stipulated in the Regulations.

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3.5 Safety Data Sheets

As from the 24 August 2016 all hazardous waste generators, except HCRW must ensure that safety data sheet/s prepared in accordance with SANS 10234 are kept.

Safety data sheets for asbestos waste, PCB waste or PCB containing waste (> 50 mg/kg or 50 ppm) and expired, spoilt or unusable hazardous products must be prepared in accordance with SANS 10234 for the product the waste originates from.

Safety data sheets for mixed waste (general waste, excluding domestic waste, which contains hazardous waste or hazardous chemicals; and mixed, hazardous chemical wastes from analytical laboratories and laboratories from academic institutions in containers less than 100 litres) must be prepared in accordance with SANS 10234 reflecting details of the specific hazardous waste/s or hazardous chemical/s in the waste.

3.6 Waste Collection Services

TM and Contractors must develop a waste collection programme which should amongst others include:

- Network of collection points;
- Provision of clearly labelled waste receptacles and a system for the safe collection and transportation of waste;
- Sufficient suitably capacitated staff (employed or contracted);
- Cleaning services this should include provision and servicing of street litter bins, street sweeping, litter picking, clearing of illegal dumping and animal carcasses.

Collection vehicles (bakkie, tractor trailers and open trucks) are used to transport waste from the working areas/collections point to temporary waste storage facility/ies. At temporary storage facilities general waste is placed into waste skips which are emptied using compactors trucks whereas hazardous waste is placed inside the 6m³ and 28m³ skips, 210L drums and removed by the accredited service providers.

3.7 Minimum requirements for management of waste storage facilities

Waste storage facility means any facility on or in which waste is accepted, accumulated, handled, recycled, sorted, stored or treated prior to its transfer for treatment by way of incineration or for final disposal.

National Norms and Standards for the Storage of Waste, GN 926 of November 2013 provide minimum standards for the design and operation of new and existing waste storage facilities and must be read in conjunction with requirements stipulated below.

3.7.1 Location and Construction

Waste storage areas must be located in such a manner that it can provide optimum handling and transportation of waste material. Location of handling areas must also take into consideration the hazards associated with flammability and toxicity of the waste stored and applicable codes and standards.

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The foundations of waste storage containers must be protected from, or resistant to all, forms of internal and external wear, vibration, shock, corrosion, fire, heat, vacuum and pressure which might cause the storage tank foundation to fail.

The liquid waste storage area must have a firm, impermeable, chemical resistant floors and a roof or a container that is coated to prevent direct sunlight and rain water from getting in contact with the waste. The facility must be surrounded by an interception trench with a sump for intercepting and recovering potential spills.

The liquid waste storage area must have a secondary containment system (e.g. bund, drip tray) of sufficient capacity to contain at least 110% of the maximum contents of the storage facility. Where more than one container/tank is stored, the bund must be capable of storing at least 110% of the largest tank or 25% of the total storage capacity, whichever is greater (in the case of drums the tray/bund size must be at least 25% of total storage capacity).

3.7.2 Access Control and Notices

Access to waste storage facility must be limited to employees who have been trained with respect to the operation of the waste storage facility and emergency response procedures and any other person authorized by the owner of the storage facility.

Notices prohibiting unauthorized persons from entering the waste storage facility, as well as a SABS acceptable sign indicating the risks involved in unauthorized entry, must be displayed at the entrance. Notice stating the hours of operation, the name, address and telephone numbers of the person responsible for the management of the waste storage facility must be displayed at the entrance.

3.7.3 Operation

The waste storage facility must be free from odour or emissions at levels likely to cause annoyance. Waste must be sorted into various categories (recyclables and non-recyclables). A procedure or protocols must be developed and implemented to prevent any mixing of hazardous and non-hazardous waste.

The waste storage facility must be operated within its design capacity.

When the waste storage facility is no longer in use method statement for decommissioning and rehabilitation of the facility must be submitted to the TM Environmental Department and ECO's for approval.

Routine inspections which include a review of the adequacy, amount and type waste, secondary containment principle and accessibility of spill response equipment must be conducted on regular basis.

3.7.4 Waste Storage Containers

A waste container must be of sufficient strength and structural integrity to ensure that it is unlikely to burst or leak in its ordinary use. Containers must be handled in accordance with appropriate safety requirements and any waste lost during opening, handling or storage must be contained.

Waste receptacles (e.g. skips, bins, 210L drums with closing mechanism) must be closed to prevent the waste from being blown away or rain entering and increasing volume of waste. Waste receptacles containing hazardous waste must be kept closed unless waste is added or emptied.

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Any container or storage impoundment holding waste must be labelled, or where labelling is not possible, records must be kept, reflecting the following:

- Date on which waste was first placed in the container;
- Date on which waste was placed in the container for the last time when the container was filled, closed, sealed or covered;
- Dates when, and quantities of, waste added and waste removed from containers or storage impoundments, if relevant;
- Specific category or categories of waste in the container or storage impoundment as identified in terms of the National Waste Information Regulations, GN 625 of 13 August 2012; and
- Classification of waste.

3.8 Waste Treatment

Unless otherwise approved by authorities, TM and Contractors when planning to undertake treatment of hazardous waste (e.g. crushing of mercury containing lights) onsite must first check if the activity will trigger a listed activity or not. Contractors must consult with TM Environmental Department prior executing such activity.

Waste must not be mixed or treated where this would reduce the potential for re-use, recycling or recovery; and/or result in treatment that is not controlled and not permanent.

3.9 Waste Transportation

Only an accredited service provider may transport hazardous waste from site and they must do so in accordance with the conditions of permit/s issued to them as well as the requirements of any relevant SANS codes, in respect of the type of vehicle, the markings and manner of construction of such vehicle, procedures for safety and cleanliness, and documentation relating to the source, transportation and disposal of such waste, and subject to the requirements of any other legislation.

Contractors must seek approval from TM Environmental Department prior to removal and disposal of waste. This is done through submission of Waste Removal Checklist (200-112512).

At minimum, waste transporters must be in possession of the following permits/registration certificates:

- Waste handling permit issued by local authority (e.g. Lephalale Local Municipality, City of Tshwane);
- Waste Information Registration Certificate issued by either provincial or national where applicable; and
- Transportation Permit issued in terms of the emergency services By-Laws (any municipality within South Africa) when transporting hazardous waste.

Waste transporters must not accept or transport waste classified as hazardous unless the approved Waste Removal Checklist accompanies the waste.

Transporters of waste classified as hazardous must:

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- Complete a waste manifest, at minimum containing the information stipulated on Annexure 2: Waste Manifest System Requirements of the Waste Classification and Management Regulations GN 634 of 23 August 2013;
- Provide the information to the generator before the waste is transported from the premises of the generator; and
- Provide the information to the waste manager at the time of delivery of the waste to the facility for a waste management activity.

Any person engaged in the transportation of waste must take all reasonable steps to prevent any spillage of waste or littering from a vehicle used to transport waste. Where waste is transported for the purposes of disposal, a person transporting the waste must, before offloading the waste from the vehicle, ensure that the facility or place, to which the waste is transported, is authorised to accept such waste and must obtain written confirmation that the waste has been accepted.

Waste transporters must have emergency response plans. Any environmental incidents that occur whilst transporting waste on the public road must be managed in accordance to the applicable environmental legislation or municipal bylaws. Such incidents must also be reported to TM Environmental Department and Contractors.

3.10 Waste Disposal

No person may dispose of waste, or knowingly or negligently cause or permit waste to be disposed of, in or on any land, water body or at any facility unless the disposal of that waste is authorised by law or dispose of waste in a manner that is likely to cause pollution of the environment or harm to health and well-being.

Waste managers must not store waste for more than eighteen (18) months from the date of receipt from the waste generator.

Waste generators must ensure that the disposal of their waste to landfill is done in accordance with the Norms and Standards for Disposal of Waste to Landfill, GN 636 of 23 August 2013.

3.11 Land Contamination and Rehabilitation

Contaminated in relation to Part 8 of Chapter 4 of the NEMWA, means the presence in or under any land, site, buildings or structures of a substance or micro-organism above the concentration that is normally present in or under that land, which substance or micro-organism directly or indirectly affects or may affect the quality of soil or the environment adversely.

The land contamination provisions provide for 'high risk activities' which are activities of an organisation which could potentially lead to land contamination. If high risk activities are undertaken or are taking place, the site is likely to have contamination.

Contractors who suspects that they operate on a land which is contaminated (with respect to different receptors and land use scenarios) or a person who undertakes an activity that caused the land to be contaminated must notify TM Environmental Department of the contamination as soon as that person becomes aware of that contamination.

No person may transfer contaminated land without informing the person to whom that land is to be transferred to that the land is contaminated. Requirements stipulated in the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality, GN 331 of 2 May 2014 must be adhered to.

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3.12 Management of General Waste

General waste means waste that does not pose an immediate hazard or threat to health or to the environment, and includes domestic waste, building and demolition waste, business waste and inert waste

3.12.1 Scrap Metals

Metals can be divided into two broad categories: ferrous- and non-ferrous metals. Ferrous metals are iron and surface-treated iron, while non-ferrous metals include copper and copper alloys, zinc, lead, aluminium, tin and precious metals such as gold and silver. Metal equipment may be coated with paints (paint may be lead-based) or PCB-containing oil, which may have separate environmental hazards of their own.

In line with the principles of waste minimisation, scrap metal should first be minimised, reused and/or recycled. Contractors are responsible for ensuring that the facilities used to reuse/recycle scrap metal have the necessary operational permits such as waste management licence, WIS registration certificates, municipal waste handling permits, atmospheric emission licences.

3.12.2 Waste tyres

Contractors must manage waste tyres in their possession, control, or causes such tyres to be managed in accordance with the Waste Tyre Regulations GN 1064 of 29 September 2017.

Contractors must before removing waste tyres from site ensure that the end of life cycle is clearly understood and all required permits/licences/registration certificates are in place. Records of waste tyres (in categories) removed from site should be submitted to the TM Environmental Department as part of the Contractors Monthly Environmental Compliance Reports.

No person may dispose of wholly waste tyres at a waste disposal facility or recycle, recover or knowingly or negligently cause or permit tyres to be recycled or recovered at any site, unless the recycling or recovery of those waste tyres is authorised by law.

3.12.3 Building Rubble/Spoil Material/Concrete Waste

Arising from construction activities, large quantities of different soil types, rocks, spoil materials and building rubble/concrete waste is generated. Recycling is considered the best option to manage this waste stream.

Building Rubble/Spoil Material/Concrete Waste is disposed of at the demarcated stockpile areas and processed for reuse within the project. Contractors must ensure that the rubble brought to the stockpile areas is clean and free from other waste materials such scrap metal, paper, plastic and wood etc.

3.12.4 Uncompactable Waste

This includes any general waste that cannot be loaded into a compactor truck but not limited to PVC pipes, redundant office furniture, netting and wood waste.

All types of uncompactable waste generated on site except wood waste are disposed of inside the 28 cubic metres skips. Wood waste is placed on the ground and then loaded onto the truck or 28 cubic metres skips and disposed of at the licenced facility.

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Wood waste can be re-used by the local communities for different purposes. Burning of waste or use of wood waste for fire purposes is not allowed because some might have chemicals coating that could be unsafe or harmful to human-beings and environment.

3.12.5 Compactable Waste

This include any waste that can be reduced in volume by compressing or applying pressure to it (compacting) with the intention to minimise transportation cost. It includes items such as cardboard boxes, paper and plastic bottles etc.

Compacted waste is collected using waste receptacles such as 240L wheelie bins, 6 cubic metres skips or in some instances refuse bags. Contractors collect waste contained in 210L wheelie bins and refuse bags to the central waste areas where waste is disposed of into the 6 cubic metres skips. At the central waste areas, Eskom Rotek Industries uses Rear End loader (REL) Compactor Truck to collect waste contained in the 6 cubic metres skip for final disposal at the licenced waste disposal facility.

3.13 Management of Hazardous Waste

Hazardous waste means any waste that contains organic or inorganic elements of compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment.

PCB's and Asbestos are not used onsite and will therefore not be addressed in this work instruction.

Waste prohibitions and restrictions on the disposal of waste to landfill stipulated under section 5 (1) and 5 (2) of the National Norms and Standards for Disposal of waste to Landfill, GN 636 of 23 August 2013 must be adhered to.

3.13.1 Sewage Related Waste

Management of sewage related waste is detailed in the Sewage Management Plan (200-109294). Sewage sludge, soil contaminated with sewage and screenings/rags are disposed of as hazardous waste at the licenced facility (e.g. Holfontein, Reitfontein).

Recycling of sewage (composting) is an option but the sludge needs to meet the requirements as stipulated in the Guidelines for Utilisation and Disposal of Wastewater Sludge - WRC Report No. TT261/06.

3.13.2 Health Care Risk Waste (HCRW)

HCRW is waste capable of producing an infectious disease. It includes the following: sanitary waste, infectious waste, sharps and vials and expired medicines. HCRW must be managed in accordance to SANS 10248 (1, 2, and 3) which gives details on storage, collection, transportation, treatment and disposal. HCRW generated onsite is collected by waste service providers and disposed of at the licensed hazardous waste facility.

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3.13.3 Electronic Waste

E-waste is the term used to describe discarded appliances that use electricity. It includes computers, printers, cell phones, iPods, iPads and other tablets, gaming consoles, air conditioners, fridges and other household appliances, batteries (wet and dry) and fluorescent light bulbs. E-waste contains valuable materials – such as gold, silver, copper and platinum – and harmful materials, such as lead, arsenic, mercury and brominated flame retardant (BFR) plastics, which require special handling and recycling methods.

The recycling processes and disposal of these components, while being a lucrative business proposition for some, pose serious health risks and environmental dangers. The formation or discharge of hazardous emissions during the recycling of electrical and electronic equipment depends heavily on the handling of electronic waste. Hence hazardous substances contained in computers and televisions do not automatically pose a risk to the environment and human health. Some recycling processes applied in transition and developing countries can cause serious health problems and contaminate air, water and soil.

Electronic waste can be disposed of as solid waste after having completed its life cycle but otherwise should be refurbished or reused or recycled (remanufactured, restored, renovated, repaired, or recharged). Hazardous materials should be disposed as per national requirement.

Wet cell batteries or lead acid batteries are used in cars, trucks and dry cell batteries are used in general household appliances (clocks, torches, cameras, remote controls and some hand held equipment's). Wet cell batteries are changed directly at the suppliers or returned to suppliers for recycling. Dry cell batteries (AA Batteries) are to be recycled or disposed at the hazardous waste licensed facility.

Ozone-depleting substances (ODSs) are compounds that contribute to the depletion of stratospheric ozone. ODSs are generally very stable in the troposphere and degrade under ultraviolet light in the stratosphere, releasing chlorine or bromine atoms, which deplete ozone. ODSs are categorised into two groups such as chlorofluorocarbons (CFCs), and Hydrochlorofluorocarbons (HCFCs). The most common HCFC in use today is HCFC-22 or R-22. Disposal of defected or unwanted equipment's (e.g. air conditioners, refrigeration equipments) must be done in an environmentally safe manner by either returning them to service provider or recycling.

TM and contractors must implement measures that will ensure proper and effective control of ODSs and compliance to the Regulations Regarding the Phasing-out and Management of Ozone Depleting Substances, GN 351 of May 2014. TM and contractors must develop ODSs Phase-out Program which should amongst others include an ODS inventory indicating types and quantities of ODSs used, their location and application as well as quantities stored on site.

3.13.4 Compact Fluorescent Lamps (CFLs) and Mercury-Containing Devices

As from the 23 August 2016 (three years after the inception of the National Norms and Standard for disposal of waste to landfill, GN 636 of 23 August 2013) disposal of Hazardous Waste Electronic Equipment (WEEE) Lamps at the landfill site is prohibited or restricted. Based on the above, TM and Contractors are encouraged recycle all their lighting lamps such as fluorescent tube, HID Lamps, and other associated lamp products such as fittings, ballast etc.

A preferred method by the recycling facilities is that generators should not crush the lamps but rather safely store the lamps in a demarcated lidded bin for recycling purpose. Based on the above crushing of CFL's on site is prohibited.

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3.13.5 Empty printing cartridges

The ink in the cartridge has certain health effects. The potential routes of over-exposure are the skin and the eyes. Inhalation of vapour and ingestion are not considered to be significant routes of exposure under normal use conditions. Ingestion of the ink will pose acute health hazards.

Toner dust contains hazardous materials whereas inkjet inks can also contain a range of chemicals that are harmful to the environment. These materials pose no threat while they are contained within the cartridge. However, these pollutants can escape when cartridges are pulled apart during poorly managed refilling or recycling operations or when dumped cartridges start to deteriorate in landfill.

Empty toner and cartridges are currently disposed of at the landfill sites. TM and Contractors must explore recycling options and ensure that this waste stream is diverted to recycling facilities.

3.13.6 Used Oil or Waste Oil

Waste oil generated from plant maintenance/services and incidents is recycled by the ROSE Foundation accredited service providers. Used oil must be stored in a sealed containers placed in secondary containment. When required the service provider will be contacted for removal or emptying.

Used or contaminated oil that cannot be recycled should be disposed of as hazardous waste at the licenced facility.

3.13.7 Empty Cylinders (B49-SABS 0140)

SF₆ cylinders are classified as Class 1 - Seamless steel containers. The re-use of cylinders for any gas other than SF₆ or any other purpose, is subject to the prior approval of the Department of Labour and compliance with the requirements of SABS 019. Cylinders should be returned to the supplier when empty or leaking. Cylinders contaminated with by-products must be decontaminated by a licensed facility before re-use.

3.13.8 Solvents e.g. used thinners

Used thinners generated from the painting activities are currently disposed at hazardous waste landfill site and also recycled through refining processes. Upon arriving at the refinery the contaminated solvent is put through a series of refining processes which ensure the separation of impurities without any loss of the solvency power of the end product. Once the end product has been thoroughly tested, it is resold into the market as thinners for cleaning purposes only.

As from the 24 September 2018 (five years after the inception of the National Norms and Standard for disposal of waste to landfill, GN 636 of 23 August 2013) disposal of re-usable, recoverable or recyclable used or spent solvents at the landfill site is prohibited or restricted.

3.13.9 Pesticides

Pesticides is a term that includes insecticides (for insect control), herbicides (for weed control) rodenticides (for rodent control), fungicides (for control of plant disease fungi) and miticides (for mite control). Pesticides can contain harmful compounds that can bio accumulate in body fats and move up the food chain as well as pollute soil and water. Pesticides products and containers must be disposed at a licenced hazardous waste facility.

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3.13.10 Ash

Fly ash material solidifies while suspended in the exhaust gases and is collected by electrostatic precipitators or filter bags. They consist mostly of silicon dioxide (SiO₂), which is present in two forms: amorphous, which is rounded and smooth, and crystalline, which is sharp, pointed and hazardous; aluminium oxide (Al₂O₃) and iron oxide (Fe₂O₃).

Fly ash contains trace concentrations of many heavy metals that are known to be detrimental to health in sufficient quantities. These can leach into the ground or surface water and cause contamination. These elements are however, found in extremely low concentrations in fly ash. Fabric filter bags generated during commissioning are disposed at a hazardous waste landfill site.

Fly ash and bottom ash generated during commissioning activities is disposed of at Medupi Ash Dump. Records of Ash disposed of at the facility are filed.

3.14 Waste Recycling

TM Management Team is committed to reduce the amount of waste sent to landfill sites by ensuring that where possible waste is minimised (reduced, reused, recycled and recovered) and waste landfilling is considered as last option in order to protect the environment and reduce projects carbon footprint.

Contractors are required to develop waste inventory to assess disposal options considering the waste hierarchal approach and ensure that disposal of waste at the landfill sites is the last resort. Examples of waste that can be recycled include but not limited to paper, cardboard, tins, glass, plastic, scrap metal, electronic waste, waste tyres, cartridge, batteries, oil rags, used thinners, used oil and fluorescent tubes.

TM and contractors must ensure that only permitted/licenced waste recycling facilities are used.

Records of waste recycled, this include removal slips must be submitted to the project as part of the Contractor's Monthly Environmental Compliance Report (200-84052) which is submitted on monthly basis.

3.15 Prevention and Management of Litter (Anti-Litter Policy)

TM and Contractors should take pride in maintaining the cleanliness onsite.

No person onsite may throw, drop, deposit, spill or in any other way discard any litter into or onto any place, land, open space, drainage system, storm water channels, street or road except in a container or a place specifically provided for that purpose.

TM and its contractors must ensure that sufficient waste containers are provided to contain litter that is discarded or left unattended by the employees and that litter is disposed of before it becomes a nuisance, a ground for a complaint or causes a negative impact on the environment.

TM and its contractors must ensure waste receptacles are provided with external closing mechanism which is scavenger, water and wind proof.

TM and its contractors must ensure waste receptacles are emptied on a regular basis and removed to the construction camp or Central Waste Facility.

Litter management is governed by Medupi Project's Anti-Litter Policy attached (200-102135). TM and Contractors are required to abide by the principles set in the policy.

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3.16 Records and Reporting

Medupi Power Station has been registered on the National Waste Information System established in terms of section 60 of the National Environmental Management Waste Act, 2008 as hazardous waste generator (excess of 20kg per day). The waste information registration number is D01651-01 (200 - 209909). This must be provided to all waste transporters and waste managers (waste disposal facilities) for reporting purposes.

Waste generators must keep accurate and up to date records of the management of waste they generate. Records must reflect:

- Classification of the waste;
- Waste manifest, safe disposal certificate and waste disposal notes/slips;
- Quantity/ies of each waste that has either been re-used, recycled, recovered, treated or disposed of expressed in tons or cubic metres per month; and
- Waste handler or manager (transporter and disposal facility).

Contractors must submit records contemplated above to TM Environmental Department on a monthly basis as part of the Contractor's Monthly Environmental Compliance Report (200 –84052) and Eskom Environmental Expenditure and Income Reporting Template (240 – 83429581) or upon request.

Waste manifest should be submitted to the project within 30 days of waste having been removed from site. Safe disposal certificates for hazardous waste removed from site must be submitted within 60 days of waste having been disposed of.

TM Environmental Department must compile a monthly waste report and biannual waste report for submission to relevant stakeholders.

3.17 Reporting on South African Waste Information System (SAWIS) and/or Provincial Waste Information System

Eskom Waste Centre of Excellence is responsible for reporting volumes of waste treated and/or disposed of within Eskom's owned waste facilities (e.g. Ash Disposal Facilities). Medupi Ash Dump Facility is operated by Eskom Medupi Generation Business Unit. The facility is also registered on the National Waste Information System (WIS Reg No. D01651-01 (200 - 209909). Submission of records of waste handled and/or landfilled at the facility is managed by Eskom Medupi Generation Business Unit. Contractors must ensure that waste managers for external facilities used to treat, recover and dispose waste register and report on SAWIS and/or provincial waste information system. Proof showing that the waste records handled were reported to SAWIS or provincial WIS must be submitted to the project upon request.

Any waste related incidents must be dealt with and be reported in accordance with the Environmental Incident Management Procedure (200 - 10506).

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4. Process for Monitoring

4.1 Key Performance Areas and Indicators

The following Key Performance Areas / Indicators (KPA's / KPI's) shall be measured, analysed and reported. The Process Owner shall be accountable, and assign the responsibility at the frequency as indicated below, documented as part of the QMS measurement, analysis and improvement initiative.

Table 2 KPA's/KPI's

Key Performance Area	Key Performance Indicator	Measure Frequency	Responsibility	Records
Implementation of the waste collection services	Provision of clearly labelled waste receptacles and servicing/emptying of the receptacles	Daily collection or when required	TM Environmental Department /Contractors	Contractors waste procedure
Proper management of waste	Proper disposal of waste	Monthly removal of waste from site	TM Environmental Department /Contractors	Waste records
	Implementation and maintenance of waste inventory	Quarterly basis	TM Environmental Department /Contractors	Waste Inventory
Proper management of Temporary Storage Facilities and Collection Points	Inspections of the temporary storage facilities and collection points	Monthly basis	TM Environmental Department/ Contractors	Inspection records
Implementation of waste minimisation programmes (alternatives to avoid, reduce, reuse, and recycle and implement measures that will lead to effective waste management)	Records of waste recycled	Monthly basis	TM Environmental Department/Contractors	Waste disposal slips
Revision of Document	Revision requirements in line with Medupi Procedures PPZ 200 5665 "Development and Change of Medupi QMS Documents" and PPZ 200 1680 "Document and Record Management Procedure"	Annually or as required	Emile Marell	Revised procedure

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4.2 Document Review and Self-Assessment

4.2.1 Document Self-Assessment

The "Process Owner" identified on page 2 of this document along with departmental personnel and the project QMS Engineer shall undertake a "self-check" review of the process defined in this procedure at six monthly intervals, commencing from the effective date of this document, to check:

- the process / work instruction operational integrity
- process efficiency
- the level of stakeholder knowledge and implementation.

Participants and results of the "self-check" review shall be documented by the Process Owner in the "Self-Assessment Checklist" (***QMS Template No. QMS LDC 200 - 75592***) included as Attachment No. 01 to this procedure which shall be issued to medupiq@eskom.co.za by the Process Owner once completed.

Process Owner shall proceed with any revision requirements in line with Medupi Procedures PPZ 200 5665 "Development and Change of Medupi QMS Documents" and PPZ 200 1680 "Document and Record Management Procedure"

4.2.2 Revision Period

All QMS documents shall undergo a 3-yearly compulsory revision.

4.3 Training Requirements

Induction training and onsite awareness through toolbox talks serve as training awareness in terms of waste management and recycling onsite. Contractors must continuously provide awareness to all employees working with waste and all contract workers that might be exposed to waste. The training/ awareness programme may amongst others include the following:

- Precautionary measures that need to be taken;
- Procedures that they need to apply to their particular type of work;
- Procedures for dealing with spillages and accidents;
- Appropriate use of protective clothing; and
- The risks of the hazardous substances to their health which they are likely to be exposed to.

Sufficient number of employees must receive training to cover for leave periods, absences due to illness and public holidays.

Training records (signed attendance register and material shared) must be submitted to TM Environmental Department as part of the Contractors Monthly Environmental Compliance Report

Only trained persons must be allowed to handle hazardous waste.

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5. Acceptance

This document has been seen and accepted by:

Name	Designation
B Janse Van Rensburg	Senior Construction Manager
E Marell	Environmental Manager
B Mgidlana	Project Quality Manager

6. Revisions

Date	Rev.	Compiler	Remarks
2019/07/25	7	Sakutanya Mamabolo	Revision following External ISO 14001 Audit and aligning to revised Eskom Waste Management Standard (32 – 245)
2018/02/14	6	Emile Marell	New Licence requirements and amend waste removal checklist
2017/09/22	5	Sakutanya Mamabolo	Revised to include the waste manifest template, amend the waste removal checklist and corporate reporting requirements
2017/07/05	4	Sakutanya Mamabolo	Revision following External ISO 14001 Audit and aligning to Eskom EMS Requirements

7. Development Team

The following people were involved in the development of this document:

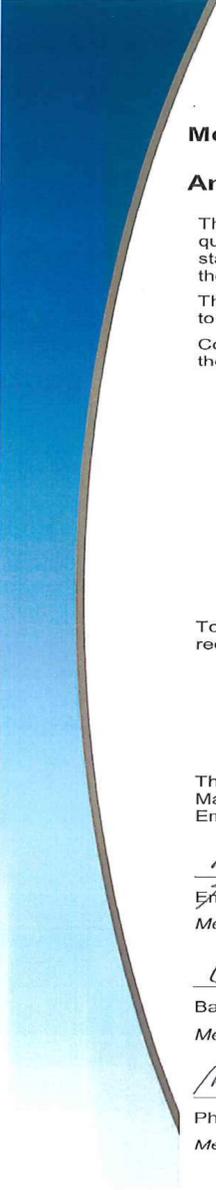
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Appendix A- Anti-Litter Policy Statement (200 - 103621)





Medupi Power Station Project

Anti-Litter Policy Statement

The Medupi Execution Project Team, "Team Medupi", is committed to implementing the highest level of quality in all phases of the project and provide a service and product which, as well as meeting statutory and regulatory requirements, satisfies the requirements and expectations of all stakeholders in the successful completion of Medupi Power Station Project.

The goal of this policy is to create a litter free environment for all persons working at Medupi as well as to foster a culture of responsible waste management.

Commitment by management to the Medupi Environmental Management System is expressed through the following Anti-Littering Objectives which commits "Team Medupi" Management to:

- a) Provide adequate resources, infrastructure, services, training and competent staff to ensure successful execution of the anti-litter policy.
- b) Establish measurable Objectives at all relevant levels and functions and review at regular intervals for adequacy and continual improvement.
- c) Define Roles, Responsibilities, Authorities and Communication channels within the Medupi Power Station Project to ensure effective implementation of the anti-litter policy.
- d) Take an active role in the Anti-Littering activities of all relevant phases of the Project.
- e) Identify all risks related to litter within the Project and implement mitigation measures to reduce the impacts.
- f) Communicate all Environmental aspects related to littering to all stakeholders and contractors and maintain mutual beneficial relationships with our contractors.

To give effect to the policy, Team Medupi, Contractors, Sub-Contractors and Service providers are required to:

- g) Ensure a litter-free site by implementing sound waste management practices.
- h) To pick up litter that is lying around and ensures their work areas are kept neat and clean at all times.
- i) To reduce, re-use and recycle waste whenever possible and ensure that waste is separated at source

The policy and the signature approvals herein are the cornerstone of the "Team Medupi" Quality Management System which is mandatory for all "Team Medupi" Power Station Management, Employees and Contractors.

 <hr/> Emile Marell Medupi Environmental Manager	<hr/> 28/01/2016 Date
 <hr/> Barry Jansen Van Rensburg Medupi Construction Manager	<hr/> 2016/01/28 Date
 <hr/> Phillip Dukashe Medupi Project Director	<hr/> 2016/02/03 Date

200-103621
Rev 2 2016-2019

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Appendix B- Project's WIS Registration Certificate (200-209909)



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Appendix C – Waste Removal Checklist

	MEDUPI WASTE REMOVAL CHECKLIST	Template Identifier	348-64755	Rev	0
		Document Identifier	348-669234	Rev	3
		Effective Date	November 2017		
		Review Date	October 2020		
MEDUPI WASTE REMOVAL CHECKLIST					
SECTION A: WASTE GENERATOR'S CONTACT DETAILS					
Name of Contractor					
*Contact Details:					
Responsible person:		Designation:			
Physical/Postal Address					
Telephone:		Fax:			
Cell Phone:		E-mail:			
SECTION B: TYPE OF WASTE					
Waste description					
Describe the source/origin of waste or processes that resulted with that waste:					
Classification/Categorisation	SANS 10228 e.g. Class 3				
	Waste Classification and Management Regulations, 2013 e.g. Type 3				
	Waste types for reporting to SAWIS e.g. HW 0701 or GW 5003				
Waste type (e.g. solid, liquid, gas)					
Quantity to be handled					
Date of collection					
Is the safety data sheet (SDS) for the waste stream developed?					
Is the waste properly labelled/ placarded/ marked?					

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SECTION C: WASTE TRANSPORTER			
Name of transporter:			
Contact Details:			
Responsible person		Designation:	
Physical/Postal Address			
Telephone:		Fax:	
Cell Phone:		E-mail:	
Waste Information System (WIS) Registration Number:		Validity period	
Lephalale LM's Permit No. in terms of the Municipal Waste Bylaw		Validity period	
Transportation Permit No. in terms of the Emergency Services Bylaw, only for transporters of dangerous goods (hazardous waste)		Validity period	
Transport type (e.g. tanker, truck, and/or container):			
SECTION D: WASTE MANAGEMENT FACILITYIES (STORAGE/TREATMENT/RECYCLING/REUSE/RECOVERY/LANDFILL)			
Name of facility:			
Contact Details:			
Responsible person:		Designation:	
Physical/Postal Address			
Telephone:		Fax:	
Cell Phone:		E-mail:	
GPS Co-ordinates for the site boundary (degrees, minutes, seconds)			
Provincial and/or National Waste information registration certificate number		Validity Period	
Waste Management facility licence/permit No.		Reviewal Period	
		Renewal/Validity Period	

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DEA's/Provincial Environmental Affairs Registration Certificate No. in terms of National Norms and Standard for the Storage Waste, GN 926		Date issued	
DEA's/Provincial Environmental Affairs Registration Certificate No. in terms of National Norms and Standard for the Sorting, shredding, grinding, crushing, screening or bailing of general waste, GN 1093		Date issued	
Registration certificate in terms of the municipal emergency bylaw		Validity period	
Atmospheric Emission Licence No.		Renewal date	
		Validity period	
Water Use Licence No.		Validity period	
Other applicable license/permits/registration certificates not mentioned above should be added e.g. certificate of registration as a second-hand goods dealer, Gauteng Health Care Waste Management Regulations, Municipal Solid Waste Bylaws and Municipal Effluent Discharge Bylaws			
SECTION E: WASTE TRANSPORTER			
Name of transporter:			
Contact Details:			
Responsible person		Designation:	
Physical/Postal Address			
Telephone:		Fax:	
Cell Phone:		E-mail:	
Waste Information System (WIS) Registration Number:		Validity period	
Municipal Permit No. in terms of the municipal waste bylaw)		Validity period	
Transportation Permit No. in terms of the Emergency Services Bylaw, only for transporters of dangerous goods (hazardous waste)		Validity period	
Transport type (e.g. tanker, truck, and/or container):			

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SECTION F: WASTE MANAGEMENT FACILITIES (STORAGE/TREATMENT/RECYCLING/REUSE/RECOVERY/LANDFILL)			
Name of facility:			
Contact Details:			
Responsible person:		Designation:	
Physical/Postal Address			
Telephone:		Fax:	
Cell Phone:		E-mail:	
GPS Co-ordinates for the site boundary (degrees, minutes, seconds)			
Provincial and/or National Waste information registration certificate number		Validity Period	
Waste Management facility licence/permit No.		Reviewal Period	
		Renewal or Validity period	
DEA's/Provincial Environmental Affairs Registration Certificate No. in terms of National Norms and Standard for the Storage Waste, GN 926		Date issued	
DEA's/Provincial Environmental Affairs Registration Certificate No. in terms of National Norms and Standard for the Sorting, shredding, grinding, crushing, screening or bailing of general waste, GN 1093		Date issued	
Registration certificate in terms of the municipal emergency bylaw		Validity period	
Atmospheric Emission Licence No.		Renewal date	
		Validity period	
Water Use Licence No.		Validity period	

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Other applicable license/permits/registration certificates not mentioned above should be added e.g. certificate of registration as a second-hand goods dealer, Gauteng Health Care Waste Management Regulations, Municipal Waste Bylaws and Municipal Effluent Discharge Bylaws			
	Name and Surname	Signature	Date
Contractor's representative			
Team Medupi (TM) Environmental Dept.			

CONDITIONS:

1. Please attach copies of all authorisations/permits/licences/waste information registration certificates and safety data sheet. Failure to do so will result in your current application not being processed.
2. Transportation Permit required in terms of the municipal emergency services bylaw's, is only applicable for transporters of hazardous waste and it should not confused with the registration/permit required in terms of National Road Traffic Act 93 of 1996 and waste bylaws.
3. For waste stream that is removed from site on a weekly basis (e.g. general compactable waste, wood waste, oily rags, sanitary waste), quarterly or annual approval can be granted.
4. Proof that waste transporters submitted waste records to the municipality/ies (as per waste bylaws) and Waste managers' report to the Provincial and/or National Waste Information System.
5. If waste removed from site, will be temporarily stored or treated prior final disposal/further processing then section E and F must also be completed.
6. Should the need to divert waste removed from site arise, contractor/service providers must inform TM Environmental Department before taking waste to the facility that was not part of the initial approval. Contractor and/or service providers must ensure that the facility or place to which waste is transported, is authorised to accept such waste and must obtain written proof that the waste has been accepted.

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Appendix D – Waste Inventory

The waste inventory is captured in document number 200 – 218938 as an excel spreadsheet to enable users to populate their information; below is a screenshot as an example. The inventory has five sheets, sheet one (1) - types of waste register, sheet two (2) – waste transporters, sheet three (3) – name of waste screenshot detailed below is an example of the full version available as document disposal facilities, sheet four (4) – onsite waste storage areas, sheet five (5) - summited waste removal checklist.

Waste description	Activity/Process generating waste	Physical properties of waste (Solid/liquid/sludge/slurry/gas)	Type of waste (General or Hazardous waste)	Rationale for hazardous designation	National Waste Information Regulation, R625, 2012 or as amended	Waste Classification (SANS 10234)/Assessment in accordance with the National Norms and Standards for Assessment of Waste for Landfill Site	Waste Classification (SANS 0228)	Type of container/receptacle stored in/used	Disposal method	Name of waste disposal/treatment/recovery/recycling facility	Annual Quantity (Estimated)
HAZARDOUS WASTE											
HYDROCARBON RELATED WASTE											
Oil sludge	Cleaning of oil separator	Semi liquid/slurry	Hazardous	Waste contains petroleum H/Cs	HW1101	Type 3	Class 9	Waste skips/wheelie bins	Landfilling	Holfontein/Reitfontein/Vlakfontein	23.1 tons
PAINT RELATED WASTE											
Contaminated PPE/Used PPE	Painting	Solid	Hazardous	PPE contaminated with paint	HW9901	Type 1	Class 4	Waste skips and 210L drums	Landfilling	Holfontein/Reitfontein	90 tons
WASTE OF ELECTRONIC AND ELECTRONIC EQUIPMENT (WEEE)											
Fluorescent tubes	Exchanging worn-out lights	Solid	Hazardous	Waste contains mercury	HW1805	Type 1	Class 9	210 L drums	Recycling	Reclite/Beclan Energy	Not disposed
SEWAGE RELATED WASTE											
Sewage sludge	Processing sewage	Solid	Hazardous	Waste contains pathogens	HW2001	Type 3	Class 6	Waste skips	Landfilling	Holfontein/Vlakfontein LS	17.95 tons
GENERAL WASTE											
COMPACTABLE WASTE											
Plastics	Packaging materials	Solid	General	N/A	GW5101/02/03/04/05	N/A	N/A	Wheelie bins, skips	Recycling Landfilling	Nampak/Simmer & Jack LS	1300 tons
Food waste and packaging materials	Food left overs and packaging	Solid	General	N/A	GW2003	N/A	N/A	Wheelie bins, skips	Recycling Landfilling	Simmer & Jack LS	

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Appendix E – Waste Management Hierarchy Implementation

 Eskom	MEDUPI POWER STATION PROJECT						Doc No: 200-218940	Rev: 0	
	WASTE MANAGEMENT HIERARCHY IMPLEMENTATION						Form No: 200-218854	Rev: 0	
		Doc Type: Form							
		Jan-16						Page: 1 of 1	
Waste description or Type of waste generated	Estimated Quantity (m3 of tonnes) per month or quarterly	WASTE MANAGEMENT HIERARCHY						Method (On-Site or Off-Site)	
		Waste avoidance	Reduce	Reuse	Recycle	Treatment and disposal			
e.g. Oil filters	2tons quarterly	Not possible or No	Not possible or No	Not possible or No	Possible or Yes, target 2tons quarterly.	Not viable option	Oil filters will pressed to remove oil. Oil will be recycled at the oil refinery whereas the pressed filter will be recycled as scrap metals at Scaw Metals		
e.g. Soft drink and water bottles (Plastic bottles)	1000 bottles per day	Not possible or No	Not feasible or No	Not feasible or No	Possible or Yes, To recycle 800 plastic bottles per day	Not viable option	To separate plastic bottles at the eating facility, introduce the clearly labelled waste receptacles at the eating facilities. Sorted plastic bottles will be taken to Eskom Rotek Industries for bailing enroute to plastic recycling companies		
Is it possible to avoid generation of this waste? Yes or No, If yes how and when can this be achieved. If yes that can be set as a target	If waste avoidance is not possible, Is it possible to reduce volumes of waste generated? Yes or No, If yes which reduction techniques will be implemented and when can it be achieved. If yes that can be set as a target.	If waste reduction is not possible or is not viable, then explore reuse options. Is it possible to reuse waste generated? Yes or No, If yes which methods will be implemented and when can it be achieved. If yes that can be set as a target.		If waste reduction or reuse options are not possible or not viable, then recycling options can be considered. Is it possible to recycle waste generated? Yes or No, If yes, indicate the targets and implementation thereof. If yes that can be set as a target		If other options are not possible or feasible, waste should be disposed at a licenced/permited waste disposal facility			

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Appendix G - Process Self-Assessment Checklist

Discipline:		Applicable Document No.: PPZ 200 - 75592				Self-Assessment Date: / /
Item No	Ref Section	Self-Assessment Question	Compliant			Comment
			Yes	Part	No	
1		Has site specific waste management Procedure been developed?				
2		Does the content of the Waste Management Procedure contain waste minimisation programme?				
3		Is the waste management hierarchy implemented for all waste stream generated				
4		Are the portions of the waste stream that can be readily avoided, minimised and/or recycled				
5		Is the waste stream analysis conducted and waste inventory developed?				
6		Is waste separated as near to the source as possible?				
8		Are the service providers and waste disposal facilities inspected/audited?				
9		Are there any control measures to prevent/minimise waste mixing implemented?				
10		Is the waste collection programme developed, implemented and maintained?				
11		Are the waste storage areas accessible?				

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12	Is hazardous waste stored at the designated area with secondary containment?				
13	Is the access control maintained (recording vehicles entering waste area)?				
14	Notices prohibiting unauthorised entry, stating hours of operation and contact person in case of emergency displayed?				
15	Does the contractor have waste receptacles?				
16	Does the waste receptacle/s have closing mechanism?				
17	Are the waste receptacles labelled?				
18	Is there any waste stream treated onsite? If was the project informed? What type of treatment is undertaken and which waste is treated?				
19	Are the waste service provider used accredited?				
20	Is prior approval sought from TM Environmental Department prior waste removal from site?				
21	Does the service provider used have all permit/licences/certificates required to transport waste?				
22	Is waste generated disposed of the licenced/permited facility?				
23	Is the contaminated land identified if yes was TM Environmental department informed?				
24	Are waste tyres managed in accordance to the Waste Tyre Regulation?				

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25		Does the contractor have waste receptacles?				
26		Is sanitary waste disposed of in an environmentally sound manner?				
27		Is the any disposal plan for electronic waste – old/damaged air conditioners?				
28		Are worn-out fluorescent tubes and sanitary waste disposed of in an environmentally sound manner?				
29		Is waste recycling option prioritised on site?				
30		Is the TM litter management policy implemented?				
31		Are waste records submitted on monthly basis?				
32		Is training and awareness on these procedure conducted?				
33		Are training records attached to the Monthly Compliance Environmental report?				
Comments:						
Self-Assessment by:		Name:	Position:		Revision Required (Yes / No)	Planned Revision Date:
Attendees:						

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