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## GENERAL NOTICE

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### NOTICE 436 OF 2011

#### DEPARTMENT OF ENVIRONMENTAL AFFAIRS

#### NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 2008 (ACT NO. 59 OF 2008)

#### DRAFT NATIONAL NORMS AND STANDARDS FOR THE STORAGE OF WASTE

I, Bomo Edith Edna Molewa, Minister of Water and Environmental Affairs, hereby give notice of intention to, under section 7(1)(c) read with section 73 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), set the national norms and standards for the storage of waste in the Schedule hereto.

Members of the public are invited to submit to the Minister, within sixty (60) days of publication of this notice in the *Gazette*, written representations or objections to any of the following addresses:

By post to:           The Director-General: Environmental Affairs  
                          Attention: Ms Zingisa Phohlo  
                          Private Bag x447  
                          Pretoria, 0001

By fax to: (012) 322 5515, and by e-mail to: [zphohlo@environment.gov.za](mailto:zphohlo@environment.gov.za)

Hand delivered at: 315 Pretorius street, Pretoria, Fedsure Forum building North Tower, 2<sup>nd</sup> floor (Reception).

The full document can also be accessed at [www.sawic.org.za](http://www.sawic.org.za) under draft documents for comments

Any inquiries in connection with the draft national norms and standards can be directed to Ms Zingisa Phohlo at (012) 310 3382.

Comments received after the closing date may not be considered.



**BOMO EDITH EDNA MOLEWA**  
**MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS**

**SCHEDULE**  
**DRAFT STANDARDS FOR THE STORAGE OF WASTE**

**APRIL 2011**



**environmental affairs**

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Department:  
Environmental Affairs  
**REPUBLIC OF SOUTH AFRICA**

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**CHAPTER 1**  
**INTERPRETATION, PURPOSE AND APPLICATION**

**1. Definitions**

In these Schedule, unless the context indicates otherwise word or expression that is defined in the National Environmental Management: Waste Act, 2008 has the same meaning, and—

**“Applicable legislation”** includes, but is not limited to—

- (a) the National Environmental Management: Waste Act, 2008 (Act No.59 of 2008);
- (b) the National Environmental Management Act, 1998(Act No. 107 of 1998);

**“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;

**“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 that it contains;

**“Director”** means the Director: Authorizations and Waste Disposal Management of the National Department of Environmental Affairs;

**“Disinfection”** means the process or mode of action whereby the number of viable micro-organisms are reduced to safe or relatively safe levels;

**“Ground water”** means water that occupies pores in the soil and cavities and spaces found in the rocks which are situated in the saturated zone of the profile by rising from a deep magmatic source or by the infiltration of rainfall;

**“Handling”** means the functions associated with the movement of waste, including storage, treatment and ultimate disposal, by the use of manual systems and automated systems;

**“Hazard”** means the intrinsic potential property or the ability of any agent, equipment, material or process to cause harm;

**“Health care risk waste”** means waste capable of producing any disease and includes, but is not limited to the following:

- (a) Laboratory waste;
- (b) Pathological waste;
- (c) Isolation waste;
- (d) Genotoxic waste;
- (e) Infectious liquids and infectious waste;
- (f) Sharps waste;
- (g) Chemical waste; and
- (h) Pharmaceutical waste.

**“Health care risk waste storage facility”** means a storage facility that stores healthcare risk waste from 20 kg at any time;

**“Lagoon or surface impoundment”** means the containment of waste in excavations and includes evaporation dams, earth cells or sludge impoundments;

**“General waste storage facility”** means a storage facility that has a capacity to store in excess of 100m<sup>3</sup> of general continuously;

**“Hazardous waste storage facility”** means a storage facility that has a capacity to store in excess of 80m<sup>3</sup> of hazardous continuously;

**“Monitoring”** means continuous or non-continuous measurement of a concentration or other parameters for purpose of assessment or control of environmental quality or exposure and the interpretation of such measurements;

“**Segregation**” means systematic separation of healthcare waste into designated categories;

“**Sharps**” means items such as needles, syringes, blades or clinical glass, that are capable of using cuts, abrasions or puncture wounds;

“**Tank**” means a container, designed for the accumulation of waste.

### LIST OF ACRONYMS

**CBO** -Community Based Organization

**DEA** -Department of Environmental Affairs

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

**NEM: WA**: National Environmental Management: Waste Act, 2008 (Act No.59 of 2008)

**NGO's**: Non Governmental Organizations

**SANS**: South African National Standards

**SEMAS**: Specific Environmental Management Acts

## 2. Purpose

2.1 The purpose of these norms and standards is to—

- (a) provide a uniform national approach relating to the management of waste storage facilities;
- (b) ensure best practice in the management of waste storage;
- (c) provide minimum standards for the designing and operation of new and existing waste storage facilities.

## 3. Legislative framework

3.1 The Constitution of the Republic of South Africa, 1996 (the Constitution) provides the foundation for environmental regulation and policy. Section 24 of the Constitution makes provision for environmental protection for the benefit of present and future generation

and the right to live in an environment that is not harmful to health and well-being. This can only be achieved through a reasonable legislative framework and other measures that prevent pollution and ecological degradation, promote conservation, and secure ecologically sustainable development and the sustainable use of natural resources. The responsibility of ensuring a safe and healthy environment rests upon the State, reference can be made to the provisions of section 7(2) of the Constitution that reads '*that State must respect, protect and fulfill the bill of rights*'. The Department of Environmental Affairs fulfill these rights through the application of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) and its Specific Environmental Management Acts (SEMA) among other tools.

3.2 The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) introduced a number of guiding principles into the South African environmental legislations, including the life-cycle approach to waste management, producer responsibility, the precautionary principle and the polluter pays principle. NEMA also places a duty of care on any person who causes significant pollution or degradation to the environment, requiring them to institute measures to prevent pollution from occurring, or to minimize and rectify the pollution or degradation where it cannot reasonably be avoided.

3.3 The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM: WA) requires the establishment of the National Waste Management Strategy (NWMS) that obliges holders of waste to take reasonable measures to implement the waste hierarchy whilst protecting the environment and public health. The development of the Norms and Standards is the foundation of the regulatory system established in terms Section 7(1)(c) of the NEMWA.

#### **4. Application**

4.1 These norms and standards apply to anyone who stores waste in storage facility as defined in the document.



- 4.2 These norms and standard do not apply to surface impoundments or lagoons.

## **CHAPTER 2 REQUIREMENTS FOR WASTE STORAGE FACILITIES**

### **Part 1**

#### **Location and Construction**

#### **5. Location**

- 5.1 In locating the waste storage facilities the public health and environmental protection must be considered. The location of waste storage facilities must also take into consideration the requirements in respect of existing servitudes.
- 5.2 The storage facilities must be located within an industrial demarcated zone. Storage facilities that are located within residential areas must have a buffer zone of at least 100m unless there is a prescribed buffer zone by the relevant local authority.
- 5.3 Storage areas must be located in such a manner that it can provide optimum handling and transportation of waste material. Location of storage areas must also take into consideration the hazards associated with flammability and toxicity of the waste stored and applicable codes and standards.
- 5.4 All storage facilities must be located in areas accessible by emergency response personnel and equipments.

#### **6 Construction and Design**

- 6.1 Construction and development of the waste storage facility must be carried out under the supervision of a registered professional engineer appointed and according to the approved civil engineering designs. The plan must only be amended and approved by a registered professional engineer.

- 6.2 The liquid waste storage area must have a firm, impermeable, and 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.
- 6.3 The storage area of any other waste must have an impermeable floor, chemical resistant floors.
- 6.4 The liquid waste storage facility must be surrounded by an interception trench with a sump for intercepting and recovering potential spills and must be lined in compliance with condition b above.
- 6.5 The storage facility must be constructed to maintain on a continuous basis a drainage and containment system capable of collecting and storing all runoff water arising from the storage facility in the event of a flood. The system must under the said rainfall event, maintain a freeboard of half a meter.
- 6.6 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).

## **Part 2**

### **Management of Waste Storage Facilities**

#### **7 Access Control and Notices**

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

- 7.2 Notices prohibiting unauthorized persons from entering the waste storage facility, as well as a South African Bureau of Standards (SABS) acceptable sign indicating the risks involved in unauthorized entry, must be displayed at the entrance. The notices must also state the hours of operation, the name, address and telephone numbers of the person responsible for the management of the waste storage facility.
- 7.3 Access to hazardous waste storage areas must be limited to trained individuals.

## **8 Operation**

- 8.1 The waste storage facility must be free from odour or emissions at levels likely to cause annoyance. Waste must be sorted at source into various categories (recyclables and non-recyclables) and a documented procedure must be implemented to prevent any mixing of hazardous and non-hazardous waste.
- 8.2 Waste must be managed in accordance with the Environmental Management System and/or an approved Integrated/ Industry Waste Management Plan, if any.
- 8.3 The waste storage facility must be operated within its design capacity.

## **9 General Requirements of Waste Storage Containers**

- 9.1 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.
- 9.2 Containers must be handled in accordance with appropriate safety requirements and any waste lost during opening, handling or storage must be contained.
- 9.3 Waste must be stored in covered containers except for when waste is added or emptied.

- 9.4 Below-ground pipes connected to the container must be protected from physical damage (e.g. excessive surface loading, ground movement or disturbance). If mechanical joints have to be used, they must be readily accessible for inspection.
- 9.5 Liquid wastes must be stored in leak resistant containers and must be inspected weekly for leaks.
- 9.6 Waste storage containers, associated piping and equipment must be of sufficient structural strength to withstand normal handling and installed on foundations stable under operating conditions.
- 9.7 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.
- 9.8 A monitoring device must be provided on all hazardous waste storage containers and piping to and from the container in order to keep operating personnel informed.
- 9.9 If the containers are lined or internally coated, the coating must be compatible with the substance stored. Furthermore the coating specification must adhere to existing engineering practices and the relevant standards requirements.
- 9.10 The waste storage tank must be a closed system and pressure resistant.
- 9.11 In cases where the tanks or vent pipes are not visible during the filling process an automatic overflow prevention device must be fitted onto the tank.

**10 Minimum Requirements for above ground Waste Storage facilities**

- 10.1 All waste containers which rest on the ground must have a double bottom or be underlain by barriers, which will not deteriorate with a permeability rate of the waste stored.
- 10.2 Bottoms of the containers which are in contact with soil and are subject to corrosion must be protected from external corrosion by either ensuring that the containers are made of corrosion resistant materials or the containers have a cathodic protection system.
- 10.3 The waste storage tanks must not have mechanical joints, except if they can be accessed for inspection.
- 10.4 The screw fitting or other fixed coupling fitted to the tank must be maintained in good condition and must only be used when filling the tank.

**11 Minimum Requirements for Underground Waste Storage Containers**

- 11.1 Underground waste storage containers must have double walled and synthetic liners and underground vaults must be installed.
- 11.2 Steel underground tanks and piping which are in contact with soil must be protected from corrosion using one or combination of corrosion resistant materials or have cathodic protection.
- 11.3 Container components that are placed underground and that are backfilled must be provided with a backfill material that is a non-corrosive, porous, homogeneous substance and that is installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

- 11.4 If external coating is used to protect the tank from external corrosion, the coatings must be fiberglass, reinforced, plastic, epoxy, or any other suitable dielectric material with a minimum thickness of 0.26mm after curing.

## **12 Minimum Requirements for Health Care Risk Waste Storage**

- 12.1 All reusable containers must be effectively disinfected before re-use and meet the standards specified in SANS.
- 12.2 The floors of the storage facility (i.e. receiving area, untreated waste area, treated waste areas) must be cleaned and disinfected twice a day.
- 12.3 Containers used for the storage of pathological waste must be manufactured from materials that are able to withstand the temperatures at which pathological waste must be stored.
- 12.4 A lid used for a pathological waste container or a disposable sharps container must provide an airtight seal to prevent the emission of odours and be secured in such a way that it cannot be reopened once closed.
- 12.5 Sharps must be contained in rigid, puncture-proof, tamper-proof and clearly marked containers.
- 12.6 Plastic bags used as stand-alone containers must have a thickness of 80µm or more.
- 12.7 Plastic bags used as liners which form an integral part of a rigid container must have a thickness of 60µm or more.
- 12.8 The healthcare risk waste storage facility must be in compliance with the following requirements:

- (a) Sharps and pharmaceutical waste must be stored for not more than 90 days from the date of collection from the generator;
- (b) Pathological waste must be treated 24 hours of generation unless it is stored at a temperature below  $-2^{\circ}\text{C}$ ;
- (c) The freezer that is used for storage of anatomical waste must be locked at all times;
- (d) There must be a back-up generator for cases where there are power cuts or failure;
- (e) A generator must store healthcare risk waste other than pathological waste, sharps and pharmaceutical waste for not more than 30 days from the date of generation or the date the waste is received from a minor generator;
- (f) Healthcare risk waste other than pathological waste, sharps and pharmaceutical waste must be treated within 72 hours of collection of the consignment by a transporter from the relevant generators premises unless stored at temperatures below  $-2^{\circ}\text{C}$ .

### Chapter 3 General Provisions

#### 13 Training

13.1 Training must be provided continuously to all employees working with waste and all contract workers that might be exposed to waste.

13.2 The training programme must amongst others include the following:

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

- 13.3 A sufficient number of employees must receive training to cover for leave periods, absences due to illness and public holidays.
- 13.4 An attendance register must be kept and signed by each employee at each training session.
- 13.5 Only trained persons must be allowed to handle hazardous waste.

#### **14 Emergency Preparedness Plan**

- 14.1 Waste can be hazardous or dangerous to the environment if not handled properly or stored inappropriately. To minimize environmental impacts, facilities must have an emergency preparedness plan that includes the following:
- (a) Hazard identification;
  - (b) Prevention measures;
  - (c) Emergency planning;
  - (d) Emergency response;
  - (e) Remedial actions.
- 14.2 Immediate action must be taken to contain spillage and prevent it from entering storm water drains or environment.

#### **15 Monitoring and Inspection**

- 15.1 Containers, tanks, valves and piping containing hazardous waste must be visually inspected for leaks, structural integrity and any sign of deterioration (e.g. corrosion or wearing of protective coatings) on a weekly basis.



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- 15.2 A registered engineer must inspect tanks containing hazardous waste at least once per annum to check tank integrity, corrosion, piping, valves, bunding, and impermeability of the bund wall and bund floor.
- 15.3 The secondary containment system must be examined at least weekly or after each significant precipitation event to ensure that the containment is free of debris, rainwater and other materials that would compromise the capacity and integrity of the system.
- 15.4 Ventilation systems, sump pumps, emergency alarms, impressed current corrosion protection systems, level alarms and other mechanical systems must be inspected on a routine basis to ensure proper functioning based on manufacturer recommendations, regulatory requirements or best practice.
- 15.5 Inspection must include a review of the adequacy, amount and type and accessibility of spill response equipment.
- 15.6 If environmental pollution, nuisance or health risks or water pollution is suspected to be or is occurring on the storage facility, an investigation must be initiated into the cause of the problem or suspected problem.

## **16 Auditing**

### **16.1 Internal Audits**

- 16.1.1 Internal audits must be conducted bi-annually and on each audit occasion an official report must be compiled by the relevant auditor to report the findings of the audits, which must be made available to the external auditor.

### **16.2 External Audits**

16.2.1 An independent external auditor must be appointed to audit the storage facility biennially and this auditor must compile an audit report documenting the findings of the audit, which must be submitted to the Director.

16.2.2 The audit report must:

- (a) specifically state whether conditions of these standards are adhered to;
- (b) include an interpretation of all available data and test results regarding the operation of the storage facility and all its impacts on the environment;
- (c) specify target dates for the implementation of the recommendations to achieve compliance;
- (d) contain recommendations regarding non-compliance or potential non-compliance and must specify target dates for the implementation of the recommendations and whether corrective action taken for the previous audit non conformities was adequate; and
- (e) show monitoring results graphically and conduct trend analysis.

## **17 Departmental Audits and Inspections**

17.1 The relevant authority responsible for waste management reserves has the right to audit and/or inspect the storage facility without prior notification at any time.

17.2 Any records or documentation pertaining management of the facility must be available to the Director upon request, as well as any other information he/she must require.

17.3 The findings of these audits or inspections must be made available to the within 30 days of the end of the audit or inspection.

## **18 Reporting**

- 18.1 Any incidences must be dealt with and be reported in accordance with sections 28 and 30 of NEMA.
- 18.2 An action plan which includes a detailed time schedule, and resource allocation to address any incident must be signed off by the senior management of the organization and submitted within 14 days or a shorter period required by the Relevant Authority.
- 18.3 Complaints register and Incident report must be made available to the external auditor, and the Departmental auditors.
- 18.4 Each external audit report must be submitted to the Director within 30 days from the date on which the external auditor finalized the audit.

## **19 Records**

- 19.1 Each storage facility must be able to provide documentation that verifies:
- (a) The number of waste storage containers/tanks within the facility;
  - (b) The date of collection; and
  - (c) Authorized collector/s and proposed final point of treatment or disposal.
- 19.2 Any deviations from the approved integrated/industry waste management plan must be recorded.
- 19.3 Records must be kept for a minimum of five (5) years and must also be available for inspection.

## **20 Decommissioning of the Waste Storage Facility**

When the waste storage facility is no longer in use an application for the decommissioning and rehabilitation of the facility must be lodged with the Relevant Authority.

**CHAPTER 4**  
**MISCELLANEOUS**

**21 Short title and commencement**

This document is called Norms and Standards for the waste storage facilities and takes effect on a date determined by the Minister in the Gazette.

**22 Transitional provisions**

- 22.1 A person who lawfully owns, manages or controls a waste storage facility prior to the date of the commencement of these norms and standards must ensure that the facility is compliant with these norms and standards within six months after the commencement of these Norms and Standards.
- 22.2 All waste storage facilities must be registered with the Departmental waste information system.
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