



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

**DEVELOPMENT OF A REVISED WASTE
CLASSIFICATION SYSTEM FOR
SOUTH AFRICA**

Updated Framework:

**REVISED WASTE CLASSIFICATION &
MANAGEMENT SYSTEM (WCMS)**

Prepared by:

EScience Associates

| | |
|--------------------------|------------------|
| Report No : | ESA-HAZR-FG-01V4 |
| DEAT Project No : | E1101 |
| Date : | 11/12/2009 |
| Author : | Mr. H. Crous |

TABLE OF CONTENTS

| | |
|--|-----------|
| TABLE OF CONTENTS | 1 |
| FIGURES | 2 |
| TABLES | 2 |
| 1 INTRODUCTION | 3 |
| 2 BACKGROUND | 4 |
| 3 PROPOSED WCMS FRAMEWORK | 6 |
| 3.1 DEFINING WASTE | 6 |
| 3.2 A. WASTE CLASSIFICATION | 7 |
| 3.3 B. WASTE MANAGEMENT..... | 8 |
| 3.3.1 Waste Resource Utilisation Activities & Legal Mechanism..... | 9 |
| 3.4 C. WASTE CATEGORISATION & REPORTING | 12 |
| 4 REGULATING WASTE CLASSIFICATION & MANAGEMENT | 13 |
| 4.1 NEMWA PROVISIONS | 13 |
| 4.1.1 Regulations | 13 |
| 4.1.2 Norms & Standards..... | 14 |
| 4.2 FORMALISING THE WCMS INTO LEGISLATION..... | 15 |
| 4.2.1 General Structure..... | 15 |
| 4.2.2 Specific Inclusions..... | 15 |
| 4.2.3 Other Inclusions | 16 |
| 4.2.4 Proposed Regulatory Framework..... | 16 |
| 5 APPENDIX 1: PREVIOUS DRAFTS – WCMS FRAMEWORK | 19 |

FIGURES

| | |
|---|----|
| Diagram 1: Waste Classification & Management System (WCMS) – Updated Framework (11/12/2009)..... | 5 |
| Diagram 2: Overview of Proposed Regulatory Framework | 18 |
| Diagram 3: Waste Classification & Management System (WCMS) – Draft Framework (First version to stakeholders; Dated 04/09/2009) | 19 |
| Diagram 4: Waste Classification & Management System (WCMS) – Updated Draft Framework (Second version to stakeholders; Dated 23/09/2009)..... | 20 |
| Diagram 5: Waste Classification & Management System (WCMS) – Updated Framework (Third version to stakeholders in report <i>Waste Categorisation for WIS Reporting</i> ; Version 2 dated 01/12/2009) | 21 |

TABLES

| | |
|--|----|
| Table 1: Hazard Classes of the WCMS / SANS 10234 Classification System | 7 |
| Table 2: Proposed Major Waste Types for Categorisation & WIS Reporting..... | 12 |
| Table 3: Proposed Formalisation of Different Requirements of the WCMS | 17 |

1 INTRODUCTION

This report presents an updated framework for the revised Waste Classification and Management System (WCMS) being developed for SA, and replaces the version dated 23/09/2009, which was distributed to stakeholders on 2 October 2009 (Ref: ESA-HAZR-FG-01V3). The document includes an outline of the fundamentals that the system would be based on, the key concepts that are considered both essential and beneficial for inclusion, and how these are interrelated.

Through the past three months in developing a number of outputs forming part of the project, and in consideration of comments received from stakeholders thus far, the draft WCMS framework has been continuously reviewed. During this process some duplication, unnecessary requirements and inaccuracies contained in the framework were identified, and it has been updated and simplified accordingly (Refer to Diagram 1). Previous versions of the WCMS framework have been attached as Appendix 1 for reference.

The main changes that have been effected in the latest version are as follows:

- (i) The ‘characterisation’ of waste in terms of specified physical and chemical properties, previously in Component C, has been removed. It was felt that requiring the full suite of analyses proposed (e.g. moisture content, calorific value and solubility) for every waste stream, without clear reason or benefit, would add an unnecessary burden on waste generators, and would also not inform or be required for reporting. Physical and chemical characteristics would rather be determined as required in terms of, for example, specified landfill acceptance criteria that would form part of proposed regulations. In other words, characterisation would only be required where necessary for a specific waste management activity.
- (ii) Secondly, the ‘categorisation’ of waste and reporting to the national Waste Information System (WIS) is now included as one in Component C (previously in B and E). The separation and apparent ‘up-front’ characterisation of waste (before management) was regarded as unnecessary, and now forms a clear, separate aspect to be formalised under the future WIS Regulations.
- (iii) Priority Waste has been removed from Waste Management (now Component B), as this would not form part of waste management options to be considered in terms of the waste hierarchy and diversion of waste from landfill. The declaration of waste as a priority due to posing a threat to health, well-being or the environment is a specific provision in the National Environmental Management: Waste Act (Act 59 of 2008), not aimed at generally prescribing or influencing waste management requirements and actions.
- (iv) Update on the proposed legal mechanism for general approval of acceptable waste re-use, recycling and recovery activities (‘Acceptable Use’; see Section 3.3.1), and approach to formalisation of the whole revised waste classification and management system into Regulations under the National Environmental Management: Waste Act (NEMWA), 2008 (see Section 4).

2 BACKGROUND

The importance of developing comprehensive systems to properly manage waste has been recognised throughout the project to revise the waste classification system for SA. This means that the importance of providing for the actual management of waste is being considered, and not only the classification ('naming') thereof. Accordingly, the proposed WCMS framework includes provisions for hazardous waste management, and has been informed by a number of first-level principles / objectives:

- Enable the improved and more efficient classification and management of hazardous waste.
- Provide for safe and appropriate handling, storage, recovery, reuse, recycling, treatment and disposal of waste.
- Enable accurate and relevant reporting on waste generation and management.
- Apply common principles applied in the classification of waste as appropriate, including (i) pre-identification of waste, (ii) testing and analyses to determine the characteristics of the waste, (iii) classification of waste based on pre-defined physical, health and environmental hazard criteria, and (iv) further analyses as required to inform waste management options.
- Direct the consideration of higher order management options for waste, in line with the Waste Management Hierarchy.
- Support the beneficial recovery of resources from waste that does not harm the environment or health.
- Promote the diversion of waste from landfill by implementing mechanisms for facilitating waste re-use, recycling and recovery.

The updated WCMS framework (see Diagram 1) includes the following three key sections (or Components A, B and C), which are each described in more detail in Section 3:

- A - Waste Classification: Identifying the specific hazardous properties, characteristics and components of waste in terms of SANS 10234, and assigning a corresponding hazard class and category to the waste as appropriate.
- B - Waste Management: Prescribing procedures, requirements and guidelines for the evaluation and implementation of appropriate waste management options.
- C - Waste Categorisation & Reporting: Setting specific parameters for reporting on waste generation and management to the Department of Environmental Affairs' (DEA) Waste Information System (WIS).

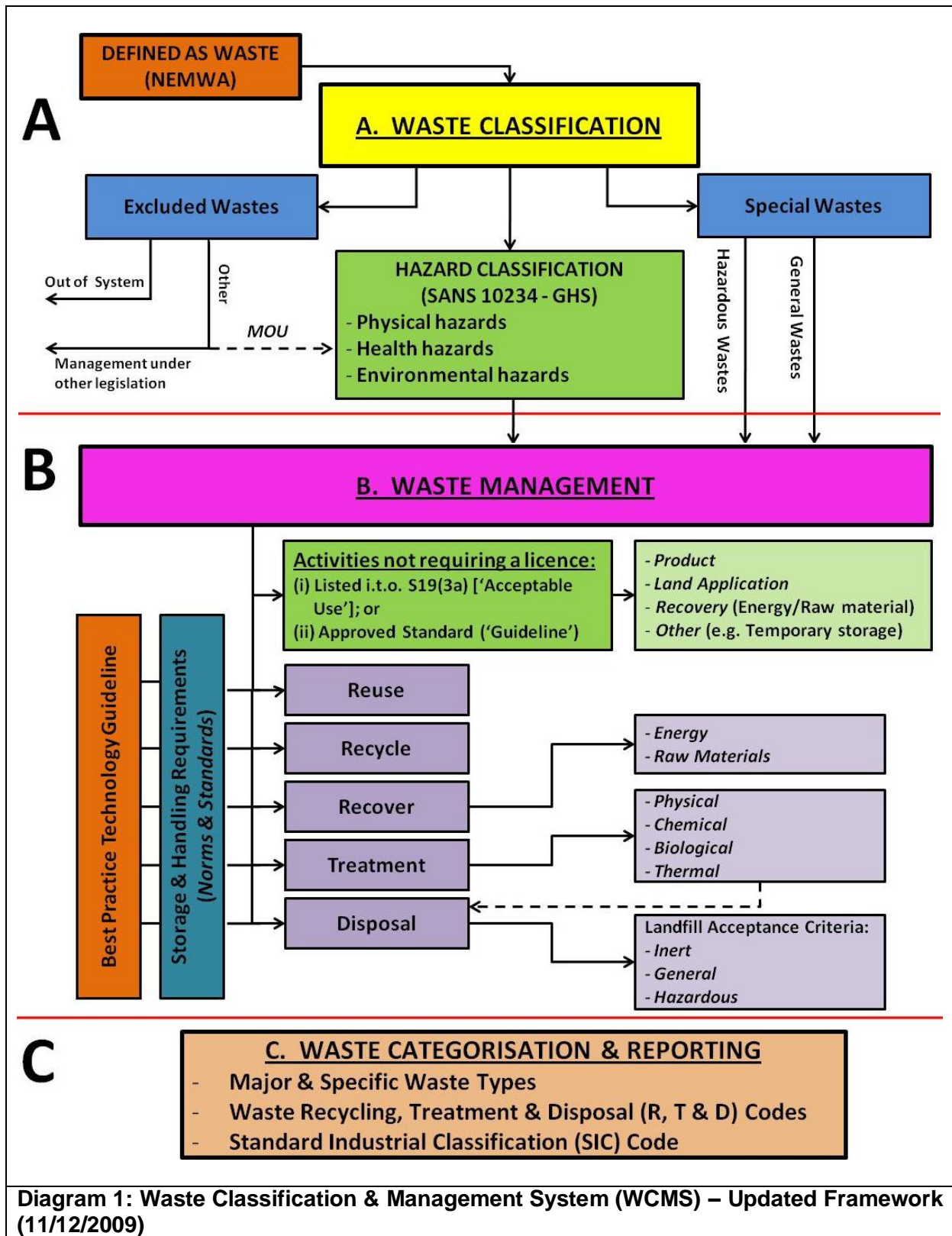


Diagram 1: Waste Classification & Management System (WCMS) – Updated Framework (11/12/2009)

3 PROPOSED WCMS FRAMEWORK

3.1 DEFINING WASTE

The requirement to assess a material in terms of the Waste Classification and Management System (WCMS) would be subject to the definition/s of waste. The definitions that will apply are those contained in the National Environmental Management: Waste Act (NEMWA), 2008 (Act 59 of 2008), as well as its Schedules, Regulations or other provisions in terms of the Act, including future updates and/or amendments. The definition of waste in the NEMWA is currently as follows:

Waste: Any substance, whether or not that substance can be reduced, re-used, recycled and recovered -

- (a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of;
- (b) which the generator has no further use of for the purposes of production;
- (c) that must be treated or disposed of; or
- (d) that is identified as a waste by the Minister by notice in the Gazette, and includes waste generated by the mining, medical or other sector, but-
 - (i) a by-product is not considered waste; and
 - (ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste.

Any material that falls within the above definition would fall within the ambit of the WCMS, and must be classified, managed and categorised/reported on accordingly. Other key definitions applied within this system currently, are:

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.

General Waste: Waste that does not pose an immediate hazard or threat to health or to the environment, and includes -

- (a) domestic waste;
- (b) building and demolition waste;
- (c) business waste; and
- (d) inert waste.

Inert Waste: Waste that -

- (a) does not undergo any significant physical, chemical or biological transformation after disposal;
- (b) does not burn, react physically or chemically biodegrade or otherwise adversely affect any other matter or environment with which it may come into contact; and
- (c) does not impact negatively on the environment, because of its pollutant content and because the toxicity of its leachate is insignificant;

All other terms used in the WCMS would have the same meaning as defined in the NEMWA, if applicable. These definitions include 'recovery', 'recycle', 're-use', 'treatment', 'co-processing', 'incineration' and 'disposal'.

3.2 A. WASTE CLASSIFICATION

After a waste material has been defined as such, the first part of the WCMS applies, which is classifying waste based on its physical, health and environmental hazardous properties in terms of SANS 10234, the Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

Table 1: Hazard Classes of the WCMS / SANS 10234 Classification System

| 1. Physical Hazards | 2. Health Hazards |
|---|---|
| <ul style="list-style-type: none"> - Explosives - Flammable gases - Flammable aerosols - Oxidizing gases - Gases under pressure - Flammable liquids - Flammable solids - Self-reactive substances and mixtures - Pyrophoric substances - Self-heating substances and mixtures - Substances and mixtures that, on contact with water, emit flammable gases - Oxidizing substances and mixtures - Organic peroxides - Corrosive to metals | <ul style="list-style-type: none"> - Acute toxicity - Skin corrosion and skin irritation - Serious eye damage and eye irritation - Respiratory sensitization and skin sensitization - Germ cell mutagenicity - Carcinogenicity - Reproductive toxicity - Specific target organ toxicity – single exposure - Specific target organ toxicity – repeated exposure - Aspiration hazards |
| | 3. Hazards to the Aquatic Environment |
| | <ul style="list-style-type: none"> - Acute aquatic toxicity - Chronic aquatic toxicity |

The proposed WCMS pre-identifies two types of wastes – Excluded Wastes and Special Wastes – which are not subject to classification. *Excluded Wastes* are those that are not subject to the WCMS for very specific reasons, despite being defined as waste in terms of NEMWA. Two types of exclusions have been identified:

- Wastes defined as such in terms of NEMWA, but for the management of which no licence is required in terms of the Act. Only one clear example has been identified, but it is conceivable that this provision may in future apply to other specific waste streams, or wastes subject to specific management procedures/activities. Currently, the specific scenario exists where, in terms of the List of Waste Management Activities in the Schedule to NEMWA (GN R.718, 3 July 2009), the recovery of waste “that takes place as an integral part of an internal manufacturing process within the same premises” does not require a Waste Management Licence in terms of NEMWA. Accordingly, wastes managed in this way do not require classification and is excluded from the whole WCMS.
- Wastes defined as such in terms of NEMWA, but which are specifically excluded from the provisions of the Act in terms of Section 4(1), due to being managed and/or regulated under other legislation. These are radioactive waste, mining residue deposits and stockpiles, explosives and animal carcasses. Where appropriate, the DEA may request other Departments (through agreement by means of a Memorandum of understanding - MOU) responsible for these waste streams, e.g. mining waste, that classification be conducted in terms of the WCMS.

Special Wastes are waste streams that through experience, common knowledge or other, are specifically and clearly identified and need no further sampling and analysis for classification. These wastes would include:

- Health Care Risk Waste (HCRW);
- Asbestos waste;
- Waste tyres;
- Electronic waste (e-waste) / Waste Electrical and Electronic Equipment (WEEE);
- Waste batteries;
- Putrescible waste;
- Municipal waste (including household hazardous waste); and
- Inert waste.

The wastes listed as Special Wastes are only excluded from hazard classification in terms of SANS 10234. These wastes are still subject to the rest of the WCMS, i.e. Management (Component B) and Categorisation & Reporting (Component C).

3.3 B. WASTE MANAGEMENT

Following waste classification (3.2), the actual management requirements for waste would be determined. The intention is to develop the necessary guidance in terms of the evaluation of the most appropriate waste management options for particular wastes, with the aim to promote the diversion of waste from landfill. Provision has therefore been made for the inclusion of a 'Best Practice Technology Guideline', which is one of the future deliverables of the current project. The guideline would form a reference document for waste generators and managers to guide and support the implementation of appropriate waste management options. In addition, Norms and Standards for the storage and handling of waste, which would be developed by the DEA as a separate project in future, would form part of the required waste management practices and procedures.

The main objective of the Waste Management stage of the WCMS would ultimately be the implementation of appropriate waste re-use, recycling, recovery, treatment and disposal options. Specific requirements and/or investigations would therefore be set and/or the relevant guidance provided, in order to evaluate the different available management alternatives. As an example, aspects that would be relevant for considering waste disposal are, firstly, evaluation of alternative, higher order waste management options in terms of the waste hierarchy, and if disposal remains the only feasible option, aspects relevant to disposal, such as pre-treatment, and leach tests (TCLP, other as appropriate) must be considered. Alternatively, should co-processing (thermal recovery) be the desired / most appropriate option, then leach tests would not be relevant, but assessment of the potential impact on air quality would.

Specific aspects that are envisaged for inclusion in the WCMS (related to the above) include:

- *Reuse and Recycling* – Applying the principles of the waste hierarchy, as well as management of waste in terms of the NEMWA and the Best Practice Technology Guideline.
- *Recovery* (energy or raw material) – Applying the relevant aspects of the Best Practice Technology Guideline and setting specific Acceptance Criteria.
- *Treatment* (physical, chemical, biological, thermal) – Applying the principles of the waste hierarchy, as well as management of waste in terms of the NEMWA and the

Best Practice Technology Guideline, and consideration of disposal of residues from treatment.

- *Disposal* – Consideration of disposal as the only feasible option, and application of Landfill Acceptance Criteria for Inert, General and Hazardous landfills.

The waste management component also includes a specific provision for a mechanism that would allow approval of beneficial waste management / utilisation (recovery, re-use and recycling) activities for general implementation, in order to further facilitate the diversion of waste from landfill (see 3.3.1 below).

3.3.1 Waste Resource Utilisation Activities & Legal Mechanism

3.3.1.1 Purpose

One of the objectives of the revised classification system is to divert waste from landfill in line with the Waste Management Hierarchy. Accordingly the DEA, in support of the beneficial recovery of resources from waste in a manner that does not harm the environment or health, intends to promote the diversion of waste from landfill by implementing mechanisms for facilitating waste utilisation. One of these mechanisms is to provide for a manner of approval whereby the re-use, recycling or recovery of a particular waste stream (or related activity e.g. temporary storage) in a specific manner, which has been investigated, assessed and proven safe, can be approved for general implementation, without a Waste Management Licence being required for each individual wishing to follow the particular management option.

The above could apply to waste management options such as uses or application to land (road building, fertiliser), use in end-products (bricks, aggregate in concrete, extenders), as well as energy or raw material recovery/substitution (including thermal recovery). At this stage, the general term ‘Waste Resource Utilisation Activity’ has been selected as it reflects the fact that resources (energy, raw materials and products) are available in general and hazardous wastes, which can be safely utilised (re-used, recycled or recovered) under certain conditions. For further detail, refer to the DEA report *Guidelines on Application for Waste Resource Utilisation Activities (‘Acceptable Use’)* (Ref: ESA-HAZR-FG-02V2; dated 25/11/2009).

3.3.1.2 Legal Mechanism Review

As South African environmental legislation, specifically the National Environmental Management: Waste Act (NEMWA), 2008, does not include a clear and dedicated provision for general approvals such as proposed, the exact legal mechanism and process for approving acceptable Waste Resource Utilisation Activities in terms of NEMWA have been evaluated.

Initially it was thought to make use of provisions in NEMWA regarding declaration of Priority Wastes and associated mechanisms in the Act to then develop plans that can be approved by the Minister, or alternatively, using the provision for Exemption in Sections 74 – 76 of the Act. Both of these options have been dismissed though, mainly due to (i) the Priority Waste provision having a clear purpose not related to what is intended for Waste Resource Utilisation Activities, and (ii) that the Act does not allow for issuing of ‘general’ exemptions, which need to be issued to a specific person (the same for Waste Management Licences).

Another more applicable option is the approval (gazetting) of a specific guideline, norm or standard, which could conditionally allow a specific Waste Resource Utilisation Activity to proceed without a Waste Management Licence being required for each individual wishing to follow the particular activity. An opportunity for this approach exists in terms of the List of Waste Management Activities in the Schedule to NEMWA (GN R.718, 3 July 2009), which states that the recovery of waste where “the Minister has approved re-use guidelines for the specific waste stream” does not require a Waste Management Licence. This provision would allow for development of specific norms or standards, which would fulfil the need to individually regulate these activities, i.e. the norms or standards would include specific operational, management and monitoring requirements (analogous to conditions of approval in a licence), which would ensure these activities proceed in an environmentally safe manner. Although this option seems workable, it does not clearly provide for a particular process to be followed or state who the applicant would be (i.e. who would apply to the Minister and how).

At this stage, the option that seems most feasible and is being explored in detail exist in terms of Section 19(3) of NEMWA (Part 4: Waste Management Activities), which states that a notice published by the Minister listing waste management activities must indicate whether a waste management licence is required to conduct the activity or, *if a waste management licence is not required, the requirements or standards that must be adhered to when conducting the activity*. This means that it may be possible to add (in the NEMWA Schedule) a third, ‘Category C’ list of waste management activities in terms of Section 19(3) (e.g. ‘Approved Waste Resource Utilisation Activities’) that have, or are likely to have, a detrimental effect on the environment (S19(1)), but for which a waste management licence is *not* required, subject to specific requirements or standards.

For the development and approval of specific norms and standards, and based on input from industry, applying the provisions of Section 24 (10) of NEMA was considered as a first. In terms of S24(10)a(i), the Minister *may* develop or adopt norms or standards for activities contemplated in terms of subsection S24(2)(d), which states that the Minister may identify activities contemplated in paragraphs (a) and (b) that may commence without an environmental authorisation, but that must comply with prescribed norms or standards. These provisions provide a clear link between activities, and norms and standards. However, with the amendment of the EIA Regulations GN R.386 and R.387 on 3 July 2009 (when NEMWA came into force), these NEMA provisions only apply to activities already identified that require Environmental Authorisation in terms of the EIA Regulations, and therefore excludes Waste Management Activities. NEMA provisions can accordingly not be used for waste activities, and NEMWA provisions needs to be applied.

In terms of NEMWA Section 7(1), the Minister must set norms and standards for (a) classification of waste, (b) planning and provision of waste management services, and (c) storage, treatment and disposal of waste, including the planning and operation of waste treatment and waste disposal facilities. In terms of Section 7(2)(a), the Minister may set norms and standards for minimisation, *re-use, recycling and recovery* of waste. These provisions, read with Section 19(3), allow the Minister to list approved activities with reference to / subject to specific requirements or standards. It should be noted that there is not a clear link between the norms and standards in Section 7 and Waste Activities in Section 19

(as is the case in NEMA), and these provisions could therefore be considered as separate and unrelated.

At this stage, based on the above, the approach to develop some ‘requirements’ (norms / standards) subject to which certain activities may be listed and continue without requiring a Waste Management Licence, does seem most appropriate and correct in law. What has been lacking is the mechanism through which clear guidance on the application procedure would be provided, as it does not exist in the act. This could however be achieved through specific Regulations, as long as these are in line with NEMWA as a whole, and does not give powers to the Minister that does not exist in terms of the act.

3.3.1.3 Implementation

It is the intention to formalise the revised waste classification management system in the form of Waste Classification and Management Regulations in terms of NEMWA (refer to Section 4 of this report). Section 69(1)(a-ee) allows the Minister to make Regulations regarding a wide range of aspects related to the act, including (h) requirements in respect of waste management activities, (m) the *utilisation* of waste by way of recovery, re-use and recycling, and (dd) any matter that may or must be prescribed in terms of this Act. Based on these provisions, the intention is to formalise the process of listing approved activities through a provision in the envisaged Regulations, by inclusion of a specific Sub-Regulation on Waste Resource Utilisation Activities. In addition, a related provision would be included to accommodate other waste management activities that are conducted within a particular industry or sector according to existing specifications or standards. These could be accepted and set as national norms or standards in terms of 7(1) or 7(2) of NEMWA.

To allow for each of the above two scenarios, the Regulations could provide that:

1. Any waste generator/s or user/s may request the Minister to –
 - a) publish specific general and hazardous Waste Resource Utilisation Activities in terms of Section 19(3) of the Act that do not require a Waste Management Licence, or
 - b) publish other waste management activities in terms of Section 19(3) of the Act that do not require a Waste Management Licence, subject to formalisation of existing standards in terms of 7(1) or 7(2) of the Act.
2. A request to the Minister in terms of 1(a) must include the following (*detailed information requirements to support request would be specified*):
 - (i) *Details on required process;*
 - (ii) *Content of application, i.e. what needs to be investigated and how;*
 - (iii) *Specific assessments required based on type of activity;*
 - (iv) *Development of and requirements for proposed norms/standards/thresholds that would form part of the process and ultimately be formalised in the listing of the approved activity;*
 - (v) *etc.....*
3. A request to the Minister in terms of 1(b) must include the following (*detailed information requirements to support request would be specified as above*).

3.4 C. WASTE CATEGORISATION & REPORTING

In order to allow for, amongst others, adequate planning and prioritisation by the regulator, reporting to the existing DEA Waste Information System (WIS) would form an integral part of the provisions of the WCMS. Reporting would be required from waste managers only, i.e. from the final management point, e.g. disposal, which could be the generator in the case of on-site management. The system would not duplicate the requirements of the WIS Regulations, but will set the parameters in terms of which hazardous waste reporting would have to be conducted. Waste generators' and transporters' responsibility for reporting would be through the waste manifest system. For more detail on waste categorisation, refer to the DEA report *Waste Categorisation System for WIS Reporting* (Ref: ESA-HAZR-FG-03V3; dated 11/12/2009).

The categorisation system incorporates specific reporting codes (numbered system) in five parts for the identification of (i) specific types of waste produced, (ii) the way in which it is managed (final fate, i.e. re-use, recycling, recovery, treatment or disposal), and (iii) the source of the waste (i.e. generator) in terms of industry sectors. The WIS will be configured as required to accept waste reporting under these categories (with associated identification code numbers) and reports for waste re-used, recycled, recovered, treated or disposed would be generated under these categories.

In parts one to three of the categorisation system, the identification of specific waste types would be conducted on 3 levels in line with the waste levels as described in the DEA document on WIS (Waste Information System: Waste Categorisation Discussion Document; NWMSIP, DEAT 2006). On the first level (Waste Level 1), general and hazardous waste would be distinguished based on the classification thereof, with hazardous waste being assigned the prefix "H". On Waste Level 2, Major Waste Types are identified and a corresponding code assigned (see Table 2). Specific waste types are identified at Waste Level 3 in up to seven subcategories of major waste types (where relevant / necessary).

Table 2: Proposed Major Waste Types for Categorisation & WIS Reporting

| Major Waste Types (Waste Level 2) | |
|--|--|
| H01 Gaseous waste | H13 Tarry and Bituminous waste |
| H02 Mercury containing waste | H14 Fly ash and dust from miscellaneous filter sources |
| H03 Batteries | H15 Bottom ash |
| H04 POP Waste | H16 Slag |
| H05 Pesticide containing waste | H17 Mineral waste |
| H06 Inorganic chemical waste | H18 Waste of Electric and Electronic Equipment (WEEE) |
| H07 Asbestos containing waste | H19 Contaminated soil |
| H08 Waste Oils | H20 Metal scrap |
| H09 Organic halogenated and/or sulphur containing solvents | H21 Health Care Risk Waste |
| H10 Organic halogenated solids and compounds with sulphur | H22 Sewage Sludge |
| H11 Organic solvents without halogens and sulphur | H99 Miscellaneous |
| H12 Other organic waste without halogen or sulphur | |

The fourth part of the reporting code would indicate what the final fate of the waste was. Three different types of code have been developed to reflect broad categories of management options for both general and hazardous waste as follows:

- R1 – R9: Waste re-use, recycling and recovery options;
- T1 – T4: Waste treatment technologies; and
- D1 – D5: Waste disposal.

Lastly, the identification of the source of general and hazardous waste (i.e. point of generation) and allocating an identifying code would be carried out in terms of the ‘Divisions’ (falling under 10 Major Divisions) of the Standard Industrial Classification of all Economic Activities (SIC; 5th Edition).

4 REGULATING WASTE CLASSIFICATION & MANAGEMENT

It is the intention that the WCMS described in this document would ultimately be formalised into *National Waste Classification and Management Regulations* under NEMWA, with associated Schedules and/or Norms and Standards in terms of the Act as appropriate. This would address, among others, one of the key shortcomings of the existing classification and management system in the Minimum Requirements Series (DWAf, 1998), which had no legal standing in itself, although some provisions were historically formalised through inclusion into the conditions of waste permits issued in terms Section 20 of the Environment Conservation Act, 1989 (Act 73 of 1989).

4.1 NEMWA PROVISIONS

The recent NEMWA for the first time provides a wide range of mechanisms to formalise requirements for waste management in the country, and that could be utilised to include relevant requirements of the WCMS into enforceable legislation. The relevant provisions in the act that could be utilised are highlighted below.

4.1.1 Regulations

In terms of Section 69(1)(a-ee) of NEMA (“Regulations by Minister”), the Minister *may* make Regulations regarding a wide range of aspects related to the act, including the following that are considered particularly relevant:

- (a) the identification and categorisation of waste;
- (b) the manner in which particular waste types must be dealt with and managed;
- (d) requirements for monitoring of compliance with this Act or any licence issued in terms of this Act;
- (e) waste management planning;
- (g) measures that are required for the environmentally sound management of waste;
- (h) requirements in respect of waste management activities;

- (m) the utilisation of waste by way of recovery, re-use and recycling;
- (q) the control over waste management facilities;
- (s) the location, planning and design of waste management activities;
- (y) the nature, type, time period and format of data and information to be submitted in terms of a waste information system established in terms of this Act;
- (dd) any matter that may or must be prescribed in terms of this Act; and
- (ee) any other administrative or procedural matter that it is necessary for the proper administration and implementation of this Act.

Related to the above, Section 71 relates to General Regulatory Powers, which include:

Section 71(1): Regulations made under this Act may-

- (a) restrict or prohibit any act, either absolutely or conditionally;
- (b) apply-
 - (i) generally to the Republic or a province, or only in a specified areas or category of areas; or
 - (ii) generally to all persons or only to a specified category of persons;
- (c) differentiate between different-
 - (i) areas or category of areas;
 - (ii) persons or categories of persons; or
 - (iii) types, classes or categories of waste;
- (d) *incorporate by reference any guideline, minimum requirements, code of practice or any national or international standard relating to waste management.*

Section 71(3)(a): Before publishing any regulation under this Act, or any amendment to the regulations, the Minister or MEC, as the case may be, must follow a consultative process in accordance with sections 72 and 73.

4.1.2 Norms & Standards

Section 7 of NEMWA includes several provisions related to National Norms and Standards.

Section 7(1): The Minister must, by notice in the Gazette, set national norms and standards for the-

- (a) classification of waste;
- (b) planning for and provision of waste management services; and
- (c) storage, treatment and disposal of waste, including the planning and operation of waste treatment and waste disposal facilities.

Section 7(2): The Minister may, by notice in the Gazette, set national norms and standards for-

- (a) the minimisation, re-use, recycling and recovery of waste, including the separation of waste at the point of generation;...

Section 7(6)(a): Before publishing a notice in terms of subsection (1), (2) or (3), or any amendment to the notice, the Minister must follow a consultative process in accordance with sections 72 and 73.

4.2 FORMALISING THE WCMS INTO LEGISLATION

4.2.1 General Structure

Formalising the WCMS into Regulations would include the incorporation of specific requirements as norms, standards (in terms of NEMWA or SANS) or schedules to the Regulations as relevant, and would broadly provide for the following outlining structure/content:

- Definitions, Principles and Objectives (if required in addition to those included in NEMA and NEMWA).
- Specific requirements for waste Classification and Categorisation.
- Legal ‘trigger’ for application for Waste Resource Utilisation Activities and specific Approval Process for these applications.
- Waste management prohibitions (e.g. landfill or thermal treatment restrictions and acceptance criteria).
- Specific waste management requirements for types of waste management options, e.g. landfill, thermal treatment, recovery etc.
- Reporting requirements (in line with existing WIS).
- Monitoring requirements.
- Requirements for the Waste Manifest system.
- Specific duties of waste generators, transporters and processors (without duplicating requirements of other legislation regulating occupational health and safety or transport aspects).

4.2.2 Specific Inclusions

In terms of the project to revise the current classification system and the WCMS as it currently stands, the following outcomes / deliverables are expected, which would be relevant to the proposed new regulatory framework and form specific aspects/provisions that would be considered for inclusion or reference as appropriate:

- Waste classification in terms of SANS 10234 GHS (Globally Harmonised System of Classification and Labelling of Chemicals).
- Waste Resource Utilisation Activities – Application (Legal Process / Trigger), as well as the Legally required Application Process/ Information Requirements for application, as well as supporting Guideline / Reference document to assist in compiling an application.

- Provision for general approval of other activities (similar to above) – Mechanism and process for approval of other activities (e.g. temporary storage facilities) that require a licence, subject to approval of existing industry norms / standards.
- Best Practice Technology Guideline – Guideline document on best practice waste management options for particular waste streams (similar to tables in current Minimum Requirement for Handling, Classification and Disposal of Hazardous waste, 2nd Ed., DWAF 1998).
- Leach Test Protocol – Requirements / criteria for specific leach test methodologies, as well as set thresholds / limits for leachable and total concentration of chemicals in waste, applicable to ‘Land Application’ of waste (disposal to landfill and re-use or recycling of waste to land, e.g. road building or fertilizer).
- Landfill Acceptance Criteria – Requirements for disposal of waste to landfill, including prohibitions (specific waste types or waste with specific characteristics not allowed to be landfilled) or restrictions (e.g. requiring intermediate treatment before landfill).
- Waste Categorisation System – Requirement and parameters for categorizing waste for WIS Reporting by waste managers.
- Waste Manifest – Requirements for minimum information to be included in the waste manifest (tracking system) for waste generators and transporters.
- Waste Classification and Management Reference Document – Support information document setting out the WCMS framework and Regulations, with some guidance detail on the above aspects, e.g. classification, leach tests, best practice, landfill criteria etc.
- Detailed project documents compiled to inform all of the above.

4.2.3 Other Inclusions

In addition to the above, the following existing documents have been identified which are also closely related to waste classification and management, and could therefore be incorporated in some form or another, in full or in part, as appropriate:

- Minimum Requirements for Waste Disposal by Landfill (2nd Ed., DWAF 1998).
- Minimum Requirements for the Monitoring of Water Quality at Waste Management Facilities (2nd Ed., DWAF 1998).
- Guidelines for Permissible Utilisation and Disposal of Sewage Sludge (DWAF, 2006).
- National Policy on Thermal Treatment of General and Hazardous Waste (DEA, 2009).

4.2.4 Proposed Regulatory Framework

The different means of including the specific requirements discussed before into the regulatory framework (Regulations, Norms, Standards etc.) as currently envisaged are indicated in Table 3 below. Diagram 2 provides an overview of how the different aspects of the regulatory framework would be related.

Table 3: Proposed Formalisation of Different Requirements of the WCMS

| Requirements | NEMWA Regulation | Norm/ Standard | SANS Standard | Guideline / Reference | For Information | Other |
|--|---|-------------------|---------------|-----------------------|-----------------|------------------------|
| | 1. General Regulatory Provisions (see 4.2.1) | | | | | |
| 1.1 Definitions, Principles and Objectives | X | | | | | |
| 1.2 Requirements for Waste Classification | X | | X | | | |
| 1.3 Requirements for Waste Categorisation | X | | | | | WIS Regulations |
| 1.4 Legal Mechanism for Waste Resource Utilisation Activities | X | | | | | |
| 1.5 Application Requirements for Waste Resource Utilisation Activities | X | | | X | | |
| 1.6 Waste Management Prohibitions | X | X | | | | |
| 1.7 Specific Waste Management Requirements | X | X | | X | | |
| 1.8 Reporting Requirements | X | | | | | WIS Regulations |
| 1.9 Monitoring Requirements | X | X | | X | | |
| 1.10 Requirements for Waste Manifest | X | X | | | | |
| 1.11 Specific Duties & Responsibilities | X | | | | | |
| 2. Specific Inclusions (see 4.2.2 & 4.2.3) | | | | | | |
| 2.1 Waste Classification (SANS 10234) | X | | X | | | |
| 2.2 Waste Resource Utilisation Activities | X | X (once approved) | | X | | |
| 2.3 Application & Approval of Other Activities | X | X (once approved) | | X | | |
| 2.4 Best Practice Technology | | | | X | | |
| 2.5 Leach Test Protocol | X | X (now) | X (later) | | | |
| 2.6 Landfill Acceptance Criteria | X | X | | | | |
| 2.7 Waste Categorisation Parameters | | | | | | WIS Regulations |
| 2.8 Waste Manifest | X | X | | | | |
| 2.9 Waste Classification & Management Reference Document | | | | X | | |
| 2.10 Detailed Technical Project Documents | | | | | X | |
| 2.11 Minimum Requirements for Landfill | | X | | X | | |
| 2.12 Minimum Requirements for Monitoring | | X | | X | | |
| 2.13 Guidelines for Disposal of Sewage Sludge | | X | | X | | |
| 2.14 Thermal Waste Treatment Policy | | X | | X | | |

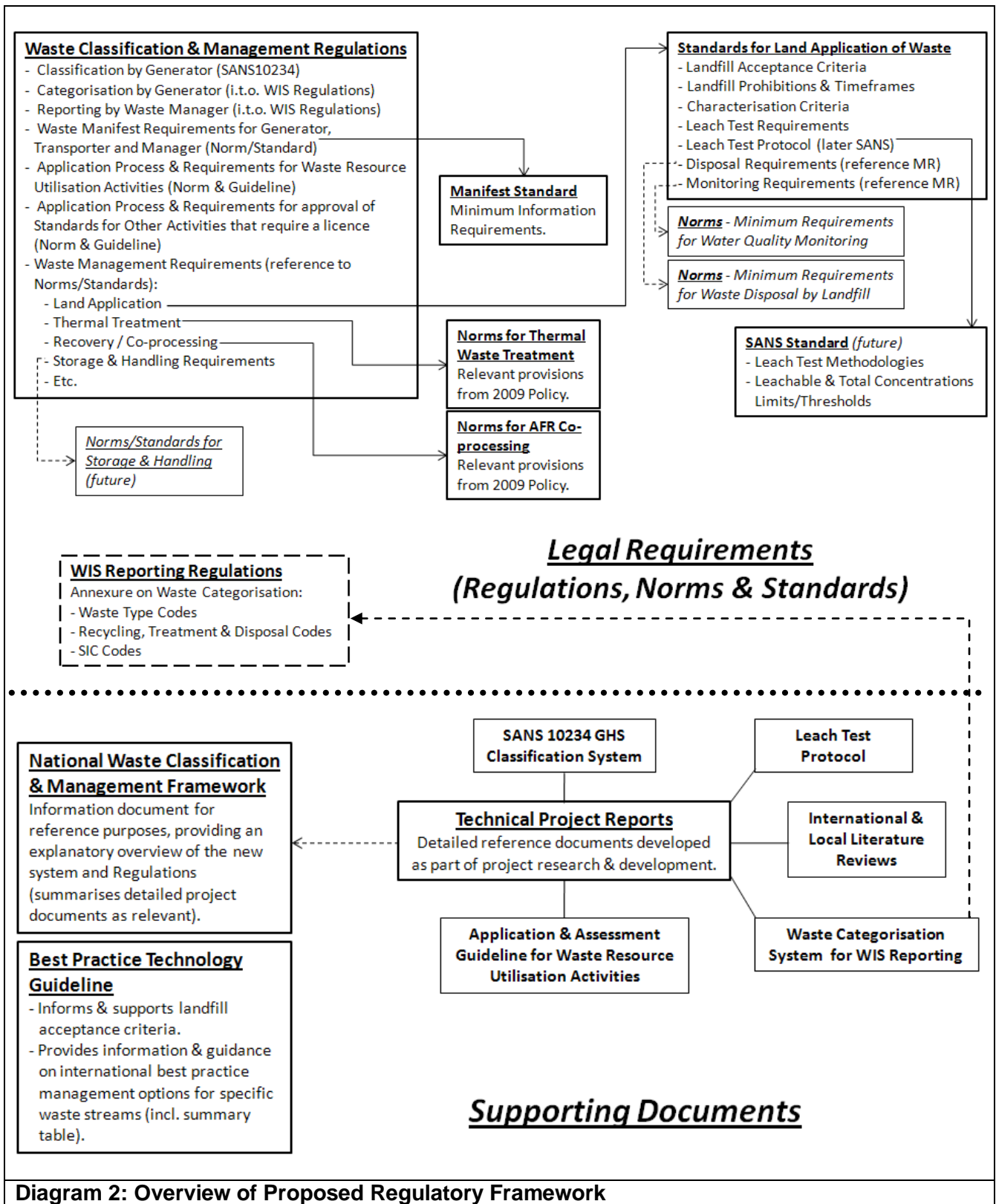


Diagram 2: Overview of Proposed Regulatory Framework

5 APPENDIX 1: PREVIOUS DRAFTS – WCMS FRAMEWORK

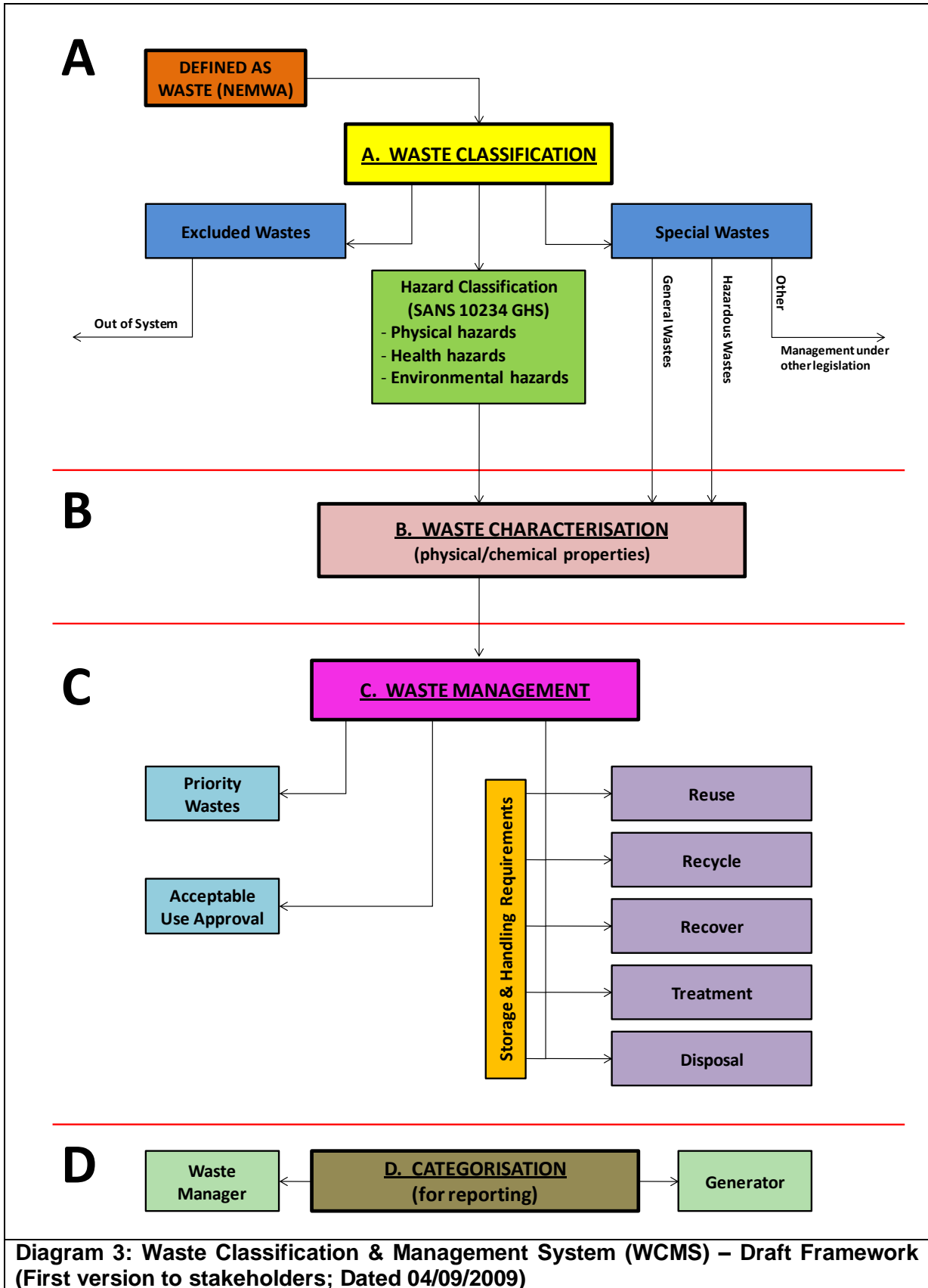


Diagram 3: Waste Classification & Management System (WCMS) – Draft Framework (First version to stakeholders; Dated 04/09/2009)

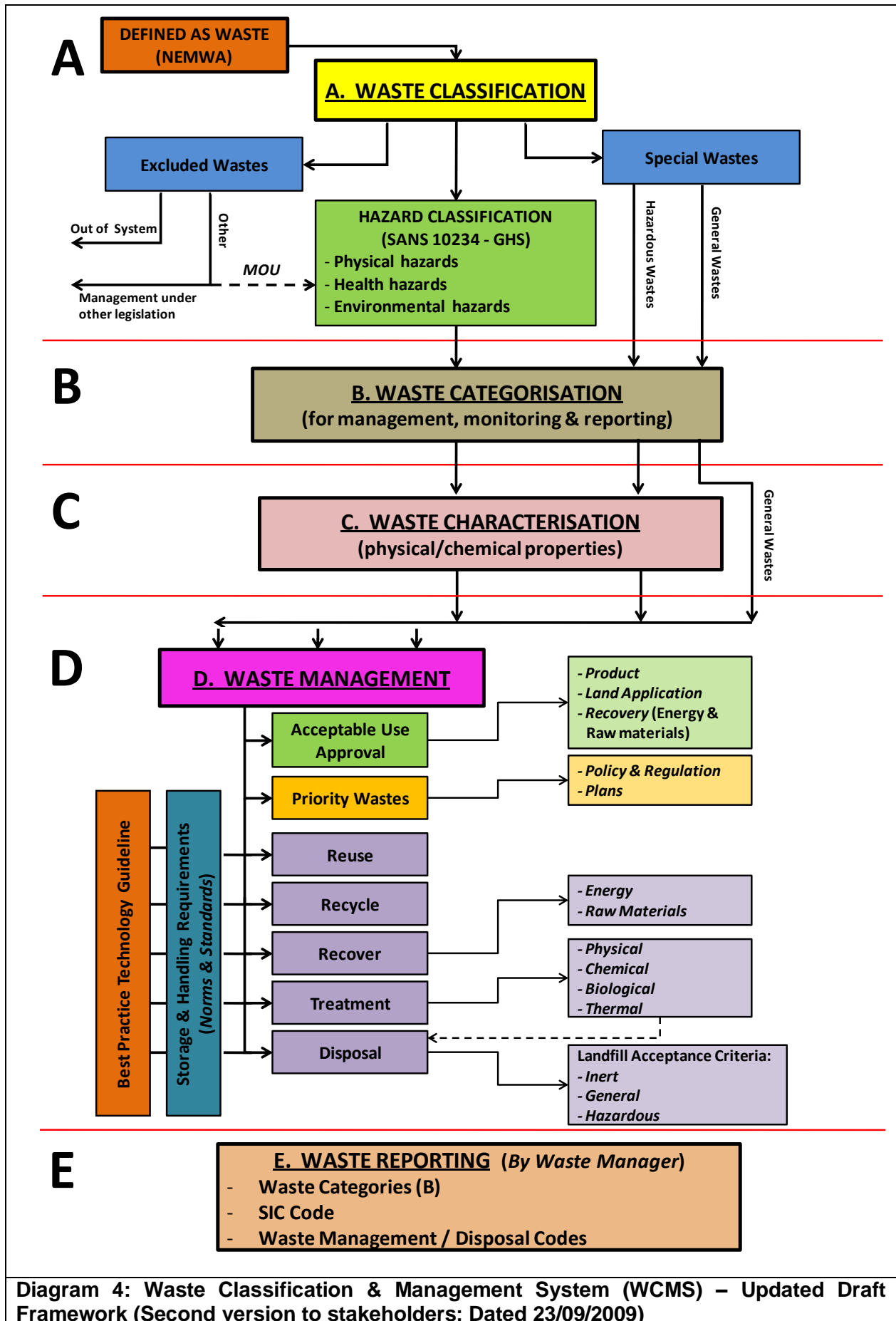


Diagram 4: Waste Classification & Management System (WCMS) – Updated Draft Framework (Second version to stakeholders; Dated 23/09/2009)

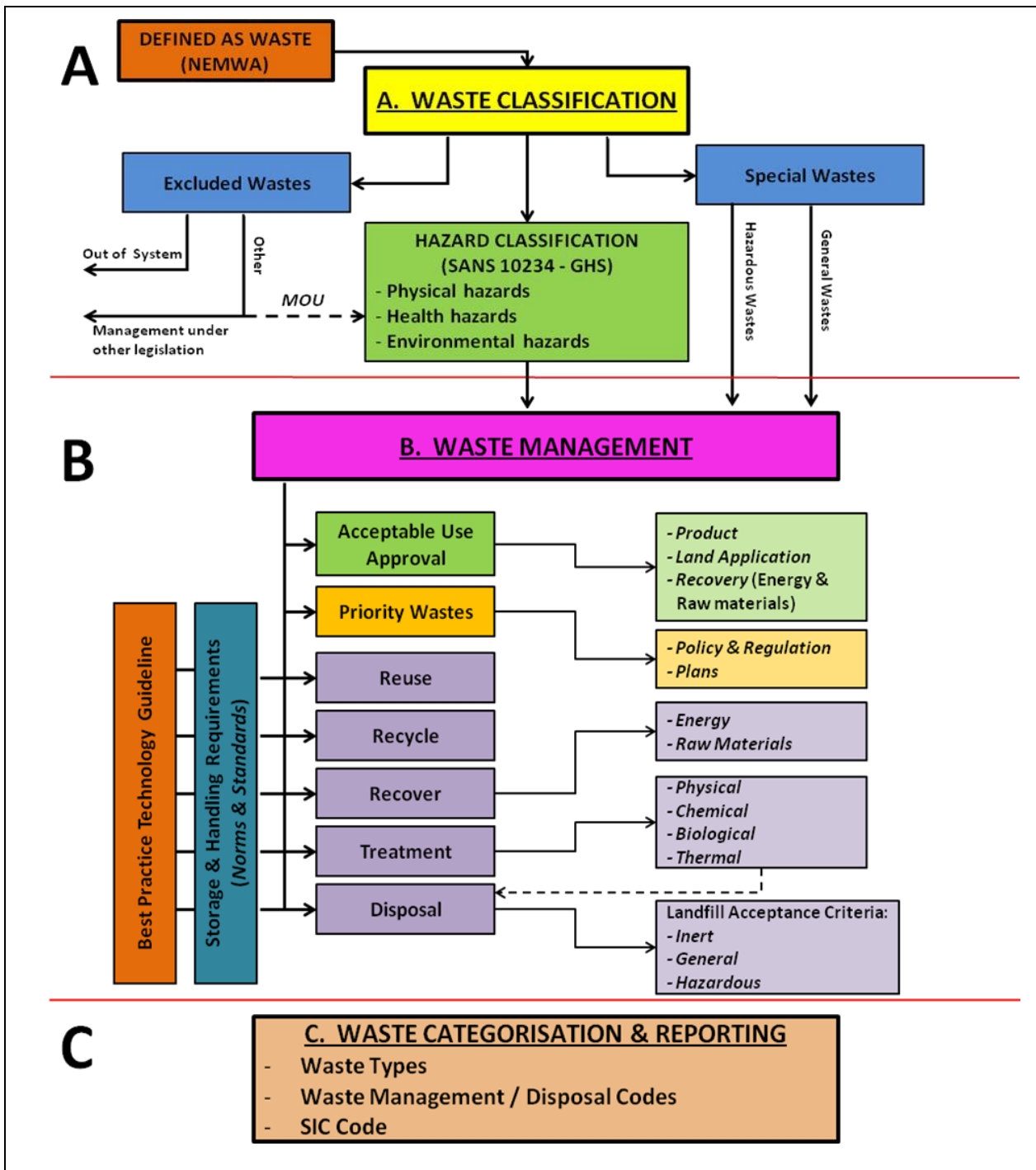


Diagram 5: Waste Classification & Management System (WCMS) – Updated Framework (Third version to stakeholders in report *Waste Categorisation for WIS Reporting*; Version 2 dated 01/12/2009)