

IWMSA/ DEA Workshop on Waste Classification and Management Regulations

8 December 2017, 10:00 – 14:15, Emperor’s Palace Convention Centre

Compiled by IWMSA based on the notes taken during the workshop and with additional written input received from Riva Nortjé, Jones & Wagener (Pty) Ltd and Kobus Otto, Kobus Otto & Associates

1. General Comments

- Schedule 3 is causing problems in classifying waste as it is overriding SANS 10234. Since the terms “waste” is used in the schedule, Schedule 3 does not add any additional value and therefore can be scrapped.
- In many instances waste needs to be transported and therefore require classification in terms of SANS 10228. The current system therefore requires double classification of the waste that does not make sense and is costly.
- The current classification is for waste disposal to landfill, we actually need a classification system that can support the entire waste hierarchy and not only disposal. Disposal is the least preferred option.
- New legislation must preferably be tested in real life situations before it is signed into law and implemented.
- We need a list of accredited labs for specific variables. Not all labs are accredited to do all the required tests.
- We need guidance to the lay person on what SANS 10234 is, or what the template should look like. The problem with SANS10234 is more about its complexity than anything else.
- The clause in the Act on when waste cease to be waste is problematic. We need a method to apply which will make it easier.
- With the new system we no longer distinguish between hazardous and non-hazardous waste landfills. This is problematic due to potential exposure of humans to hazardous chemicals contained in waste especially where access at landfills are not controlled, which is basically the case at all municipal sites.

2. Waste Classification and Management Regulations (R 634)

No. R. 634 of 23 August 2013, Government Gazette No. 36784, Department of Environmental Affairs, set under Section 7(1)(c) of the National Environmental Management: Waste Act (Act No. 59 of 2008)

SANS10234 is complex and difficult to interpret. Applying SANS 10234 to mining waste is inappropriate, and this issue needs to be addressed.

Scrap metal is normally viewed as general waste, but scrap metal from various industries are contaminated and should be classified using SANS 10234. To apply the law strictly, every piece of metal will have to be tested at various labs, which could be very costly.

The regulations currently focus on the inherent characteristics of the waste rather than on the impact of the waste on the environment and the vulnerability of the receiving environment. This is a flaw from an environmental perspective. The National Water Act focus on the risk to the water resources and therefore we need a way to reconcile the requirements and align the processes required in terms of the Waste Act and the Water Act. This problem is specific relating to ash dumps of ESKOM requiring installation of very costly barrier systems in order to meet the requirements of the Waste Act which is not linked to the protection of the environment, but the source. This cost will be carried over to the consumers of electricity.

We need to find a risk approach to classify the waste. There is a distinction between pollution and contamination. There are various risk levels on the whole life cycle of a landfill site that need to be determined and accepted. All landfill liner leak, and this should be taken into account with the risk factor calculation.

What measures are put in place for recycling of waste that has already been pre-classified? There should be more flexibility in looking at what the waste will be used for.

Please add a clause to allow for risk based approach of the whole process.

Item 6.(1) states that "Waste must not be diluted solely to reduce the concentration of its constituent for the purposes of classification...". There are instances where it is not currently technologically possible to treat waste so that it classifies as a Type 1 waste rather than a Type 0 waste, and then dilution would be the only option if the disposal of Type 0 waste is not allowed. There currently is no legal opportunity for a company to consider the disposal of such a Type 0 waste using a risk-based approach. In such instances, the use of a risk-based approach would be supported, provided that the risk-based approach is sufficiently detailed, scientifically sound, and multi-disciplinary.

It was suggested that we go back to the Minimum Requirements, review what is there that has not been included in the regulations, norms and standards and compile that into a guideline that can still be used. There is a lot of good information in the Minimum Requirements that are still relevant.

3. National Norms and Standards for the Assessment of Waste for Landfill Disposal (R 635)

No. R. 635 of 23 August 2013, Government Gazette No. 36784, Department of Environmental Affairs, set under Section 7(1)(c) of the National Environmental Management: Waste Act (Act No. 59 of 2008)

It was suggested that these norms and standards should be for disposal on land and not necessarily for disposal to landfill.

The Assessment regulations are not risk based and only apply to human impacts. This is a flaw since the impacts on the receiving environment should also be considered.

The standards must be more flexible to allow for exceptions with a good motivation without having to go through public participation as is the case with NEMA.

These Norms and Standards should include a pH value of the waste itself without the influence of an acidic or alkaline solution, as pH is important for design. For instance, the pH of pore water from a Type 3 ash may be greater than 11. However, the ash is disposed of on an industrial site with some office and food wastes, as well as putrescible industrial wastes. The assessment methodology therefore uses a pH of 5.0 or 2.9 for the leaching fluid, as appropriate. The leach results do not indicate the relatively high pH, which has implications for the choice of construction materials in design, such as the use of polyester geotextiles. Appropriate pH for the waste streams should be reported, particularly where a waste makes up a considerable proportion of the waste stream to a landfill.

There is an issue with Total Concentrations being used to classify the hazards posed by waste. While Section 7(4) allows a waste with TC of an element or chemical substance above the TCT2 limit, and the concentration cannot be reduced to below the TCT2 limit, but the LC for the for the particular element or chemical substance is below the LCT3 limit, the waste is considered to be Type 1 waste. But there is no opportunity for a waste with a TC above the TCT2 limit and low leachability to be classified as a Type 2 or Type 3 waste, although the actual hazard posed by that waste may be relatively low.

The use of the United States of America's Environmental Protection Agency's Leaching Environmental Assessment Framework (LEAF) is supported for certain sites and risk assessments. "LEAF testing can provide more reliable release estimates by assessing the impact on leaching of environmental factors and waste properties that are known to significantly affect constituent leaching and which vary in the environment and across waste forms."

I support the assessment of actual leachate being considered on sites, as this is often a real-life indication of what will leach out of the wastes. It is noted that leachate may be less hazardous than an actual waste stream, but can also be worse. It is prudent to consider the quality of leachate over a period of time.

4. National Norms and Standards for Disposal of Waste to Landfill (R 636)

No. R. 636 of 23 August 2013, Government Gazette No. 36784, Department of Environmental Affairs, set under Section 7(1)(c) of the National Environmental Management: Waste Act (Act No. 59 of 2008)

The transition period is over (it was three years from 23 August 2013), and domestic waste may only be disposed of on Class B or G:L:B⁺ landfills following the transition period. Most of the municipal landfills in South Africa are not G:L:B⁺ landfills, they are G:L:B⁻, G:M:B⁺, G:M:B⁻, G:S:B⁺, G:S:B⁻, G:C:B⁺, and G:C:B⁻, which may now not accept domestic waste for disposal in terms of the Norms and Standards unless a Class B cell has been constructed. Class B cells have not been constructed for most of these facilities, so that most municipalities in the country are currently disposing of their waste illegally.

Section 5 includes prohibitions and restrictions, but neither term is defined. Prohibition clearly means that something is not permitted, but the meaning of restrictions may be open to interpretation. It is recommended that the list of prohibitions be separated from the list of restrictions, and that restrictions be defined.

Is prohibition on brines practical given desalination plants, acid mine drainage treatment plants etc.

I concur that enforcement at municipalities is a significant concern, and we have seen standards of landfill operation deteriorate significantly over the years. Law is not enforced equitably between private and public facilities. There was a massive fire at a municipal landfill causing seven schools to be closed, and little in the news regarding follow up. Without access control at many municipal sites, are we sure Type 1 wastes aren't going to municipal sites? I also concur that the statement that inconsistent enforcement disrupts the waste management industry in South Africa and is a threat to environment. When legitimate businesses trying to do the right thing can't compete with facilities with poor standards, they close down or elect not to develop state of the art of facilities in the first place. Enforcement, education, and monitoring are key to country-wide environmental protection, and to advancing the waste management hierarchy in South Africa.

I do not concur with the definition read by Carin Bosman that the term "landfill" is only applicable to municipal waste disposal sites, and only applies to filling in of land. If the European Directive for Landfilling is considered, landfills are divided into three classes: landfills for hazardous waste; landfills for non-hazardous waste, and landfills for inert waste. Similarly, the United States of America's Environmental Protection Agency regulates landfills which can accept hazardous waste (under the Resource Conservation and Recovery Act (RCRA) Subtitle C) and those that can accept non-hazardous waste (under RCRA Subtitle D). Subtitle D includes coal combustion residual landfills. Landfilling is widely accepted to including filling in excavations and/or creating a landform above grade, as included in the Minimum Requirements for Waste Disposal by Landfill.

Wording within these regulations should be amended so that they are applicable to other facilities. For example the introduction to Section 3(2), which is key to responsible design, states that “The following containment barrier requirements must be included in an application for waste management licence approval of a landfill site or cell-”, and this could potentially be legally challenged if applied for facilities other than specifically stated.

Although not stated in the workshop, it is recommended that Section 3(2) should include stability assessment requirements. The DWS Engineering Review Panel currently requests additional information in design reports and presentations than is listed in Section 3(2), and it is recommended that this Section be updated.

Also not mentioned in the workshop is the restriction on waste with a moisture content of >40% or that liberates moisture under pressure in landfill conditions, and which has not been stabilised by treatment. If these regulations are to be used for tailings dams (including fine ash and coal discard dams) where tailings are usually hydraulically placed, then this restriction would not be practical to implement.

- **Question:** Was compliance with GNR 636 intended to be voluntary (in which case it should have been published in *Resource*), or was publishing thereof in the *Government Gazette* aimed at making compliance compulsory? If it was intended to be compulsory, it should be enforced; and if it is not enforced, it should be repealed.
- **Comment:** As a case study illustrating the negative impact of differentiating legal standards on the waste industry in SA, reference was made to the problems that arose after promulgation of Gauteng Health Care Waste Regulations in 2004; but without similar HCRW treatment standards set in neighbouring provinces. In anticipation of the new HCRW treatment legislation that was to come into effect in Gauteng in 2004, industry invested huge amounts of money in providing state of the art, legally compliant, HCRW treatment facilities in Gauteng. Since no similar HCRW treatment standards were set in any of the other provinces, an extremely badly designed and operated incinerator in a neighbouring province resulted in unfair competition for the capital intensive, legally compliant HCRW treatment facilities erected in Gauteng. By creating an uneven playing field with differentiating legal standards set, large volumes of HCRW generated in Gauteng was transported across the provincial border for incineration and disposal in the neighbouring province. In addition to the incinerator not meeting the Gauteng standards, incinerator ash from that incinerator was also disposed on a legally non-compliant municipal landfill.

The aforesaid resulted in:

- **Clinical Waste Management (CWM)**, who invested in a state of the art batch loading incinerator, designed and manufactured in Korea, never being awarded a contract by either public or private sector HCRW generators, since CWM they could not compete on price with the “fireplace” in the neighbouring province. Shortly after the Gauteng Department of Health awarded its HCRW management contracts, with CWM still not able to compete in the market and therefore not awarded any contracts, the complete CWM facility burnt down – never to be re-erected. The facility was permanently lost to the HCRW management industry.
- Evertrade invested in an Electro Thermal Deactivation (ETD) plant that met all the required standards – also with state of the art facilities. Evertrade was awarded part of the Gauteng HCRW Contract, but went insolvent shortly after commencement of the contract – since the low prices at which they tendered to compete with the “fireplace” in the neighbouring province did not allow them for recovery their capital costs and operational expenses. The

sudden and unexpected closure of Evertrade facilities in Gauteng caused chaos, particularly since the Gauteng provincial health care facilities did not have any backup arrangements in place.

- Sanumed, who invested in a locally manufactured legally compliant incinerator, withdrew from the HCRW market since they could not compete with the “fireplace” in the neighbouring province.

A similar situation is currently created in the landfill market with GNR 636 not being uniformly enforced. It is impossible for landfill owners with legally compliant landfills to remain competitive, while competitors (private or public landfills) across the road can charge significantly reduced waste disposal fees because their landfills are not legally compliant and the landfill owners did not incur the costs of constructing liners in compliance with GNR 636. *The 3-year window period after which all new AND existing landfills were to comply with GNR 636 came to an end by August 2016, so municipal waste (general waste) may no longer be disposed of on landfills that do not at least have a GLB+, or Class B lining and leachate extraction system.*

DEA is to take note that differentiating standards for development and operation of landfills; OR differentiating enforcement of the legally required standards, creates the risk that owners of landfills that are in compliance with GNR 636 may ultimately be forced to withdraw from the market. This will result in South Africa only remaining with non-compliant landfills.

- **Question:** It is claimed that municipalities cannot afford to have their waste disposed of on GLB+ / Class B landfills. DEA is at the same time investigating the possible introduction of a “landfill tax” to make waste disposal more expensive; allowing for alternative waste management activities (higher on the waste hierarchy) to become financially viable. Why is the landfill tax not used for construction of municipal Class B landfills? That will result in environmental tax being used for the benefit of the environment, rather than to be wasted in ways that is not benefitting the environment. Knowing that the landfill tax is in fact used for the benefit of the environment, will make the introduction of a landfill tax also more acceptable to waste generators in South Africa.