AfriForum

Part of the Solidarity Movement

# MUNICIPAL LANDFILL AUDIT REPORT

2021


by

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# ACKNOWLEDGEMENTS

A big thank you to AfriForum's staff and all the AfriForum branches across South Africa who have made this project possible.

Thank you to every individual member of AfriForum for your participation in this national project, and for sharing the vision of sustainable development and responsible waste management in South Africa with us.

Thank you also to every municipality providing guidance in South Africa and delivering excellent services by ensuring that waste is managed in a responsible manner and thereby complying with appropriate legislation and licences for managing waste. These municipalities should be rewarded for protecting their communities and the environment against pollution and hazards.

Thank you to the Waste Management Division of the Department of Environmental Affairs and the Gauteng Department of Agriculture and Rural Development who supported the project, assisted with the compilation of the new landfill site audit list and made their provincial task team available to participate in branch audits.

This report is a project of AfriForum's #CleanSA initiative, launched by AfriForum Community Affairs' environment division.

# Contents

# Introduction

The civil rights organisation AfriForum launched the #CleanSA initiative in May 2014. This project strives to make a positive change in the management of waste across South Africa by holding the officials involved accountable and by creating cooperation between communities and the three spheres of government: the Department of Environmental Affairs on a national level; the respective provincial departments on the provincial level; and municipalities on the local level of government. From a waste management perspective, the latter is the most important and is also the level of government that is closest to communities. Finally, AfriForum also wants to equip communities through the #CleanSA initiative with solution-driven approaches and therefore we introduce the latest technologies and processes for dealing with the growing waste issue and for processing waste through lower levels of pollution and more efficient recycling.

This initiative gave rise to AfriForum's landfill site audit report. The aim of this audit is to establish the extent to which landfill sites (legal as well as illegal) in the municipalities of AfriForum's 140 branches across the country comply with the minimum and to compare these with their waste management licences. Factors such as inadequate waste management; the collapse of infrastructure; corruption, health and safety issues; a shortage of air space for waste, as well as worldwide concerns about global warming and pollution have compelled AfriForum to implement this project to protect South Africans' constitutional rights and our natural environment. AfriForum is of the opinion that very few municipalities comply with waste regulations, and that local authorities display a lack of accountability for proper waste management, monitoring and licensing.

For the purpose of this report, waste management practices in specific municipalities were assessed to determine whether responsible management takes place and to ensure that recommendations for best practice as well as environmental, health and safety requirements were being met. The audit results for each municipality were analysed and converted to a score out of 100 to measure compliance performance. The results are collated in this investigational report.

*Shacks in which people live on the Klerksdorp landfill site in the North West*


*An impeccable landfill site in Tzaneen, with an operative weighbridge, fence and complete infrastructure*

# The facts

In terms of the South African Constitution, waste management is a service that has to be provided by local governments.

According to the 2012 departmental report on the condition of the environment, it is calculated that 42 million $m^3$ of ordinary (household) waste and 5 million $m^3$ of hazardous waste are generated annually in South Africa. Non-compliance with regulations at landfill sites pollutes the air, soil and water sources. This cannot be tolerated because it directly affects the health and safety of the community.

The management of household waste in South Africa is currently facing many challenges, including law enforcement, management (among others financial and personnel management as well as the management of equipment) and institutional behaviour (management and planning).

The South African waste management strategy is based on a range of laws aimed at managing and preventing pollution of the environment. The most pertinent of these laws are the following:

- **The Hazardous Substances Act 15 of 1973, which regulates the treatment and destruction of hazardous substances**
- **The Environment Conservation Act 73 of 1989**
- **The National Environmental Management Act 107 of 1998**
- **The National Environmental Management: Waste Act 59 of 2008, which was promulgated specifically to regulate waste management in South Africa.**

The Local Government Municipal Systems Act 32 of 2000 furthermore requires waste management services to be provided to all local communities in a financially and environmentally sound manner to promote the accessibility of basic services as well as sustainable waste management.

The current South African legislation to manage waste properly seems to be adequate. However, the appropriate legislation is neither applied nor enforced.

The government is obliged by the Constitution to uphold the rights set out in section 24 of the Constitution through organs of state that are responsible for the implementation of legislation on waste management. The government must introduce uniform measures aimed at reducing the amount of waste that is generated as well as ensuring that waste is reused, recirculated and recycled in an environmentally friendly manner, or treated and disposed of in a safe manner.

# Landfill sites

A landfill site is a place where waste is dumped, levelled, covered with sand and left to decompose. Landfill sites are also called *rubbish dumps*, *rubbish heaps*, or *rubbish tips*. These sites should be located in places where waste can be managed without harming people's health or damaging the surrounding environment. It is therefore illegal to dump waste in places that are not licensed by the Department of Environmental Affairs as landfill sites.

In terms of section 9(1) of the National Environmental Management: Waste Act 59 of 2008 a municipality must employ its executive powers to provide waste management services – including refuse removal and the storage and destruction of waste – in such a way that it does not conflict with national and/or provincial standards.

## Classification of waste

Waste is divided into two categories, namely general and hazardous waste.

1. **General waste** (also called household waste) is waste from urban areas, mainly from houses, offices and construction sites. This includes building rubble, garden refuse, waste from people's houses and waste from towns and cities. The local authority is responsible for the collection, transport and management of waste in urban areas. The local council must use a portion of the money collected from residents in their area to deliver this service. In other words: If you pay rates, you already pay to have your refuse removed. General waste is dumped at general landfill sites, identified in official documents by the symbol G.
2. **Hazardous waste** is waste that can pollute the environment and harm people's health. This waste comes from factories, mines and hospitals and includes toxic substances (toxic waste), germ-bearing waste and explosive or easily combustible waste. Hazardous waste is classified from 1 (very hazardous) to 10 (slightly hazardous). This kind of waste may be dumped only at sites that are equipped to handle this kind of waste. These sites are identified by the symbol H:h or H:H in official documents.

*Hazardous medical waste dumped at the general Springbok landfill site in the Northern Cape.*

**PLEASE NOTE: This AfriForum audit report focuses only on municipal/private landfill sites for general waste. However, carcases, sewage, medical waste and other types of hazardous waste were indeed found on general landfill sites referred to in this report.**

# The problem

Waste from any urban community will not only create an aesthetic problem but can also pose severe health risks if it is not properly controlled. These risks are increased if the waste contains hazardous substances.

Local authorities can and should be held criminally liable for acts of negligence that affect people's health or cause pollution. Local authorities can also be held civilly liable for associated financial costs, particularly relating to the closing or rehabilitation of landfill sites and the rehabilitation of polluted soil or land intended for urban development.

The waste generated by people in towns and cities can be detrimental to people's health and the environment if:

- **the landfill sites are located close to where people live;**
- **the landfill sites are poorly designed and developed (for instance where leached or toxic water gets into the groundwater reservoirs and rivers);**
- **the landfill sites are poorly managed (for example if the sites are not fenced, access control is not applied, animal carcases are lying around, fires occur on a regular basis, or the waste is not covered with sand and compacted on a daily basis; or**
- **the waste is not taken to properly managed landfill sites but illegally dumped on open sites.**

## Problems with landfill sites

People who live or work close to landfill sites are exposed to a number of risks and hazards. These include:

- **Landfill sites can be very unsafe, noisy, smelly and visually unattractive.**
- **Vehicles collecting or dumping waste can pose safety risks.**
- **Spontaneous combustion and fires on the sites can pollute the air.**
- **The gases on landfill sites can cause explosions.**
- **Pollution on the site can penetrate the surrounding natural water sources and soil.**
- **People can become ill if they inhale the polluted air, drink toxic water or eat food that has been grown in poisoned soil.**
- **People can develop cancer or asthma and other lung and chest diseases.**
- **Birth defects may occur and children growing up close to landfill sites can show stunted growth and be sickly.**
- **Landfill sites attract animals and insects that may carry germs and diseases, for instance rats, mice and flies, and that can transmit these germs and diseases to people who come into direct contact with the site.**

# The project

Various communities participated in the project by inspecting their local landfill sites and answering 33 questions (counting 25 points altogether) about these sites. This contributed to the data used for the audit of compliance with the minimum requirements for landfill sites. They were accompanied by AfriForum's provincial coordinators and various other stakeholders, including municipal officials, the media and service providers.

The Director-General for Waste Management of the Department of Environmental Affairs provided AfriForum with the contact details of the department's provincial waste management officials so that they could be invited to the landfill site audits. They are also available to assist AfriForum after the conclusion of the project.

The Gauteng Department of Agriculture and Rural Development (GDARD) as well as waste management officials from private companies joined forces with AfriForum in 2017 to conduct a landfill site audit and provide input for the compilation of a new audit questionnaire.

Almost every licensed landfill site is required to be audited annually by independent parties or organisations. AfriForum is therefore well-positioned as a community watchdog to conduct a reliable audit on the various local landfill sites.

Participants were encouraged to take photos as evidence to increase the credibility of the study. A final score was calculated by awarding one point for each category complying with the minimum requirements. The final score was multiplied by four to achieve a compliance score out of 100.

*Example: 15 of the 33 questions (with a total of 25 points) comply with the requirements. (Please note: Certain points carry more weight than others, depending on the importance of the standard.)*

*Therefore:*

*15 x 4 = 60%*

Each municipality that achieves more than 80% will receive a certificate of appreciation from AfriForum.

Sites that are managed in an excellent way can achieve 100%. Such sites will receive special recognition and a floating trophy on which the name of the municipality concerned will be affixed.

Please refer to the action plan below relating to municipalities obtaining a score of less than 80%.

In 2016 private landfill site companies approached AfriForum to showcase the standards upheld in the private sector. Since 2016, AfriForum has therefore been auditing the private sector's landfill sites as well, in order to compare their results with those of the government.

# Results

AfriForum audits in previous years (as from 2014) at landfill sites all over South Africa were as follows:

- 2014: 83 sites
- 2015: 56 sites
- 2016: 83, of which three in the private sector
- 2017: 105, of which three in the private sector
- 2018: 114, of which five in the private sector
- 2019: 127, of which three in the private sector
- 2020: 135, of which three in the private sector
- 2021: 153, of which four in the private sector

The most remarkable observation was that various sites closed down, while others that are still open must be closed according to their licences.

The results of the landfill sites audited between 2014 and 2020 are also included in this report so that they can be compared with the 2021 results. The results can be summarised as follows:

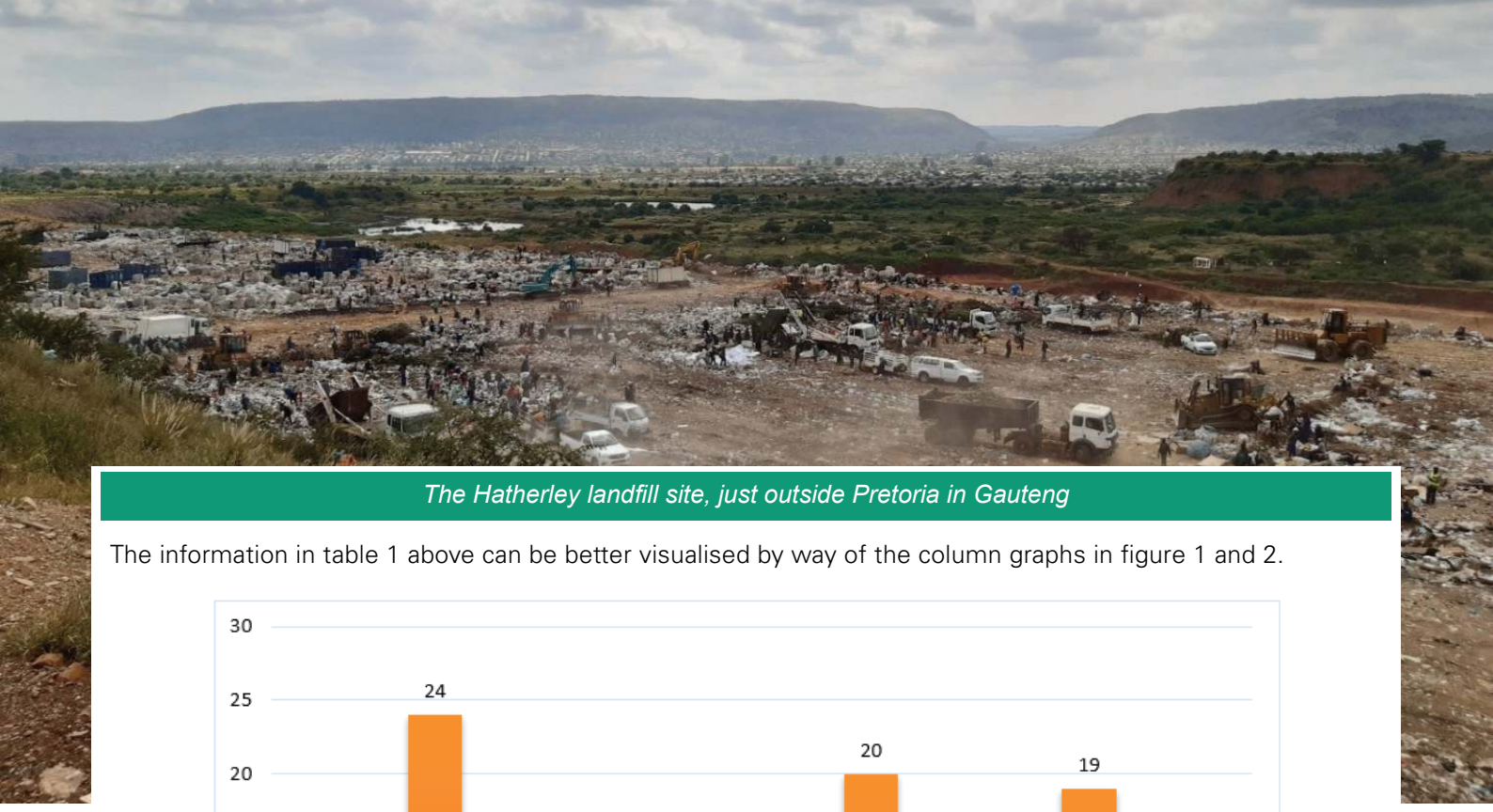
Only 27 of the 153 landfill sites that were audited in 2021 (17%) or more of the minimum requirements for landfill sites. This means that 126 landfill sites within municipalities (82,4%) did not meet the minimum requirements. This clearly points to major shortcomings with respect to systems and people responsible for proper waste management across the entire country.

This indicates a deterioration compared with 2020 of sites that complied with 80% or more of the minimum requirements for landfill sites.

The number of landfill sites that were audited in each province is indicated in table 1 below, as well as the number that complied or did not comply with the minimum requirements for landfill sites.

*Table 1: Statistics on compliance/non-compliance with minimum requirements for audited landfill sites, per province*

| Province | Number of landfill sites that were audited | | | | | | | | Number of audited landfill sites that comply with more than 80% of the minimum requirements | | | | | | | | Number of audited landfill sites that do not comply with minimum requirements | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| **Eastern Cape** | - | 7 | 5 | 3 | 7 | 6 | 6 | 7 | - | 1 | 1 | 0 | 1 | 2 | 1 | 0 | - | 6 | 4 | 3 | 6 | 4 | 5 | 7 |
| **Free State** | 11 | 10 | 13 | 14 | 14 | 20 | 25 | 24 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 10 | 10 | 11 | 13 | 14 | 20 | 25 | 24 |
| **Gauteng** | 12 | 4 | 10 | 22 | 20 | 21 | 16 | 17 | 3 | 0 | 2 | 13 | 15 | 11 | 11 | 9 | 9 | 4 | 8 | 9 | 5 | 10 | 5 | 8 |
| **KwaZulu-Natal** | 13 | 3 | 6 | 7 | 6 | 7 | 8 | 9 | 5 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 8 | 3 | 5 | 6 | 5 | 5 | 7 | 8 |
| **Limpopo** | 10 | 7 | 8 | 9 | 13 | 12 | 9 | 11 | 3 | 1 | 3 | 3 | 4 | 4 | 1 | 1 | 7 | 6 | 5 | 6 | 9 | 8 | 8 | 10 |
| **Mpumalanga** | 11 | 8 | 11 | 17 | 24 | 25 | 19 | 21 | 0 | 1 | 0 | 0 | 5 | 2 | 0 | 1 | 11 | 7 | 11 | 17 | 19 | 23 | 19 | 20 |
| **Northern Cape** | 7 | 5 | 9 | 10 | 8 | 12 | 15 | 16 | 3 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 4 | 5 | 8 | 9 | 8 | 10 | 15 | 15 |
| **North West** | 11 | 7 | 12 | 13 | 14 | 14 | 18 | 21 | 3 | 1 | 3 | 1 | 3 | 1 | 2 | 2 | 8 | 6 | 9 | 12 | 11 | 13 | 16 | 19 |
| **Western Cape** | 8 | 5 | 9 | 10 | 8 | 9 | 19 | 27 | 3 | 2 | 2 | 3 | 4 | 4 | 8 | 12 | 5 | 3 | 7 | 7 | 4 | 5 | 11 | 15 |
| **National total** | **83** | **56** | **83** | **105** | **114** | **127** | **135** | **153** | **21** | **6** | **15** | **23** | **33** | **28** | **24** | **27** | **57** | **50** | **68** | **82** | **81** | **99** | **111** | **126** |



*The Hatherley landfill site, just outside Pretoria in Gauteng*

The information in table 1 above can be better visualised by way of the column graphs in figure 1 and 2.

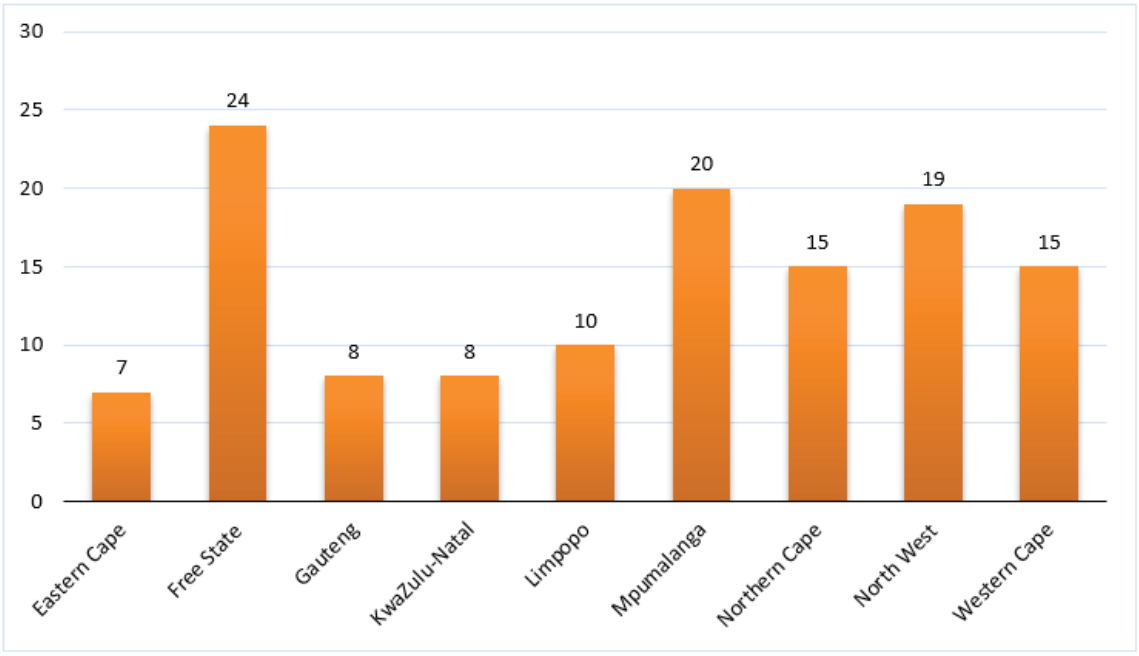



*Figure 1: Number of audited landfill sites per province not complying with minimum requirements, 2021*

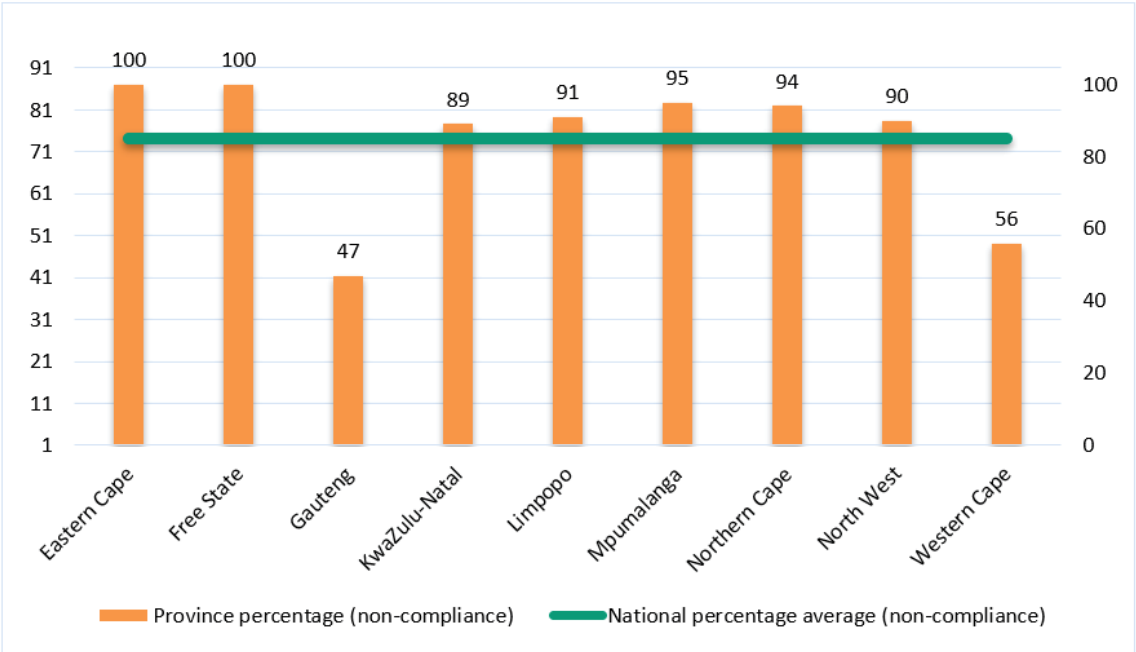



*Figure 2: The national average of audited landfill sites in comparison with the provincial average of audited landfill sites not complying with minimum requirements, 2021*

The percentage of all audited landfill sites that complied with/did not comply with the minimum requirements for landfill sites in 2021 is shown in figure 3 below.

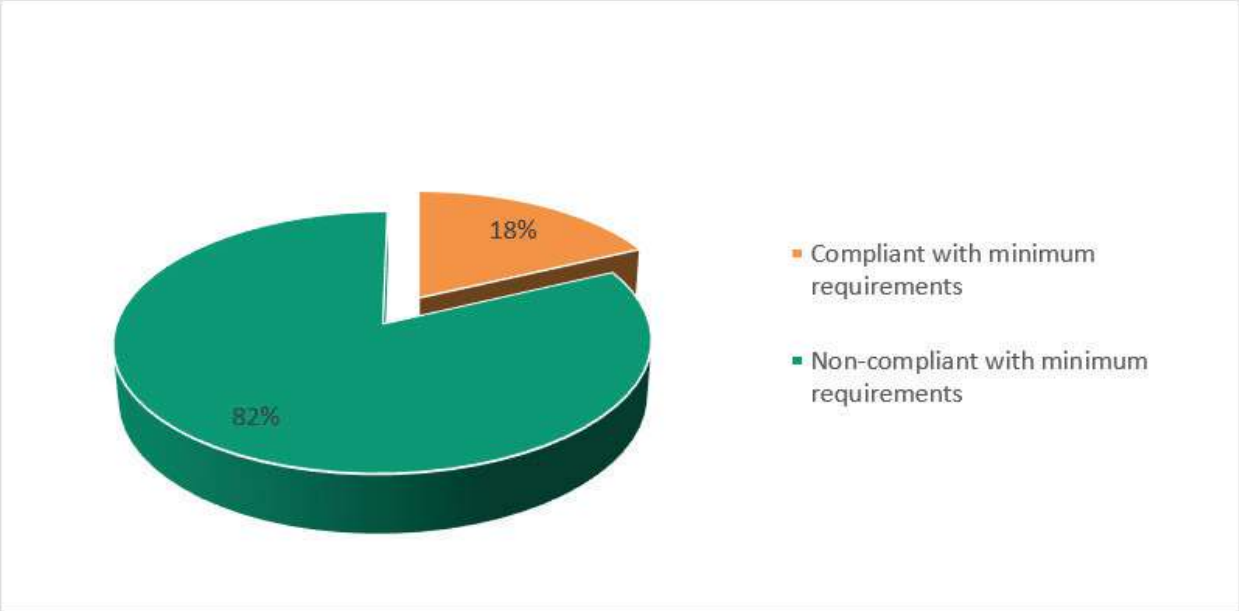



*Figure 3: Percentage of audited landfill sites complying/not complying with minimum requirements*

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The audit results of 2014 to 2020 are compared in figure 4 below. It is not indicated in the graph whether the performance of landfill sites improved or deteriorated.


*Figure 4: Comparison of the number of audited landfill sites complying/not complying for 2014–2021*

In table 2 below, the percentages allocated to all audited landfill sites from 2014 up to and including 2021, based on the landfill site audit questionnaire from each municipality, are shown.

*Table 2: AfriForum audit scores for the period 2014–2021*

**Key:**

| | |
|---|---|
| Landfill site with permit | |
| Landfill site without permit | |
| Private landfill site | |
| Transfer station | |

| EASTERN CAPE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Name of branch or landfill site** | **Municipality or responsible institution** | **Licence number** | **Compliance (%)** | | | | | |
| | | | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| Aliwal North | Maletswai LM | 12/9/11/P131 | - | - | - | 30 | 34 | 36 | 56 |
| Barkly East | Senqu LM | 16/2/7/U601/B3/P470 | 88 | 92 | - | - | - | - | - |
| Burgersdorp | Walter Sisulu LM | | - | - | - | 2 | - | - | - |
| Cradock | Inxuba Yethemba LM | B33/2/1000/33/P122 | 24 | 36 | - | - | - | - | 10 |
| East London | Buffalo City Metro | 16/2/7/R301/D1/29/P381 | - | - | - | 76 | - | - | - |
| Elliot | Sakhisizwe LM | - | 16 | - | - | 0 | 2 | 4 | 0 |
| Hankey | Kouga LM | BB33/2/1100/5/P209 | - | - | - | - | 40 | 72 | 42 |
| Hofmeyr | Enoch Mgijima LM | - | - | - | 0 | - | - | - | - |
| Jeffreys Bay (Humansdorp) | Kouga LM | 12/9/17/P53 | - | - | - | - | 58 | 88 | 68 |
| Krakeel River | Kou-Kamma LM | - | 36 | 40 | - | - | - | - | - |
| Louterwater | Kou-Kamma LM | - | 8 | 32 | - | - | - | - | - |
| Molteno | Enoch Mgijima LM | - | - | - | 0 | 0 | - | - | - |
| Port Elizabeth (Arlington) | Nelson Mandela Bay Metro | 16/2/7/M200/D1/21/P278 | 76 | - | - | 99 | 90 | 78 | 62 |
| Queenstown | Enoch Mgijima LM | - | - | - | - | 14 | - | - | - |
| Tarkastad | Enoch Mgijima LM | - | - | - | 4 | - | - | - | - |
| Twee Riviere | Kou-Kamma LM | - | 12 | 40 | - | - | - | - | - |
| Uitenhage (Koedoeskloof) | Nelson Mandela Bay Metro | 12/9/11/L341/1 | - | - | - | - | 90 | 74 | 36 |

| FREE STATE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Name of branch or landfill site | Municipality or responsible institution | Licence number | Compliance (%) | | | | | | |
| | | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Allanridge | Matjhabeng LM | - | - | - | - | - | - | 0 | 4 |
| Bethlehem | Dihlabeng LM | 12/9/11/L98/2 & WML/1B/03/2010 | - | - | 56 | 22 | 16 | 6 | 32 |
| Bloemfontein North | Mangaung Metro | 16/2/7/C522/D1/Z2/P478 | 72 | 96 | 89 | 18 | 10 | 16 | 22 |
| Bloemfontein South | Mangaung Metro | B33/2/350/2/P162 | 68 | 80 | 68 | 18 | 14 | 20 | 28 |
| Boshof | Tokologo LM | - | - | - | 19 | 11 | 18 | 26 | 14 |
| Bothaville | Nala LM | 16/2/7/C604/D1/Z1/P340 | 8 | 4 | - | 4 | - | 4 | 4 |
| Brandfort | Masilonyana LM | - | 4 | 24 | 9 | - | 2 | 2 | 34 |
| Bultfontein | Tswelopele LM | WML/BAR/07/2014 | - | - | 42 | - | 24 | 28 | 28 |
| Dealesville | Tokologo LM | 12/9/11/L886/2 | - | 52 | 31 | 3 | 26 | 52 | 38 |
| Edenville | Ngwathe LM | - | - | - | - | - | - | 0 | - |
| Frankfort | Mafube LM | - | 48 | 16 | 1 | 0 | 3 | 4 | 0 |
| Harrismith | Maluti-A-Phofung LM | 16/2/7/C801/D2/Z1/P333 & 16/2/7/C801/D2/Z2/P343 | 24 | 16 | - | 20 | 13 | 18 | 24 |
| Heilbron | Ngwathe LM | - | 12 | 8 | 0 | 0 | - | 0 | 2 |
| Henneman | Matjhbeng LM | - | - | - | - | - | 26 | 0 | 0 |
| Hertzogville | Tokologo LM | WML/BAR/10/2014 | - | - | - | 52 | 36 | 56 | 62 |
| Kroonstad | Moqhaka LM | B33/2/360/1/P36 | - | - | - | - | 16 | 8 | 14 |
| Odendaalsrus | Matjhabeng LM | B33/2/325/6/P108 | - | - | - | - | 7 | 2 | 52 |
| Parys | Ngwathe LM | 16/2/7/C233/D1/Z1/P336 | - | - | - | 8 | 16 | 8 | 10 |
| Petrus Steyn | Nketoana LM | - | 8 | - | - | - | - | - | - |
| Reitz | Nketoana LM | 16/2/7/C805/D4/721/P341 | 68 | - | - | - | 13 | 12 | 14 |
| Sasolburg | Metsimaholo LM | - | - | 36 | 16 | 18 | 18 | 20 | 14 |
| Senekal | Setsoto LM | B33/2/340/16/P221 | - | - | - | 23 | - | 22 | 18 |
| Steynsrus | Moqhaka LM | B33/2/340/88/P112 | - | - | - | - | - | 4 | 10 |
| Theunissen | Masilonyana LM | 16/2/7/C402/D3/Z1/P339 | - | 24 | 33 | - | 24 | 8 | 12 |
| Verkeerdevlei | Mosilonyana LM | WML/BAR/15/2014 | - | - | 6 | - | - | - | - |
| Virginia transfer station | Matjhabeng LM | - | - | - | - | - | 6 | - | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Welkom | Matjhabeng LM | B33/2/340/32/P85 | - | 16 | 33 | - | 13 | 12 | 48 |
| Winburg | Masilonyana LM | B33/2/340/20/P48 | 12 | 12 | 11 | 13 | 54 | 28 | 32 |

| GAUTENG | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Name of branch or landfill site** | **Municipality or responsible institution** | **Licence number** | **Compliance (%)** | | | | | | |
| | | | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| Alberton (Heidelberg Road transfer station | Ekurhuleni LM | 16/2/7/C221/0494Z10/P465 | | | 93 | 97 | - | - | - |
| Alberton (Platkop) | Ekurhuleni LM | 33/2/2/321/1450 | - | - | - | - | 97 | 95 | 96 |
| Benoni | Ekurhuleni LM | - | | | 76 | - | - | - | - |
| Boksburg (Rooikraal) | Ekurhuleni LM | 16/2/7/c221/D24/21/P512 | - | - | - | 97 | 97 | 97 . | Closed (under construction) |
| Bon Accord | The Waste Group | B33/2/123/154/P191 | - | - | 98 | 98 | 94 | 98 | 86 |
| Brakpan (Weltevreden) | Ekurhuleni LM | B33/2/321/172/P137 | - | - | 89 | 97 | 94 | 91 | 94 |
| Bronkhorstspruit | Tshwane Metro | B33/2/220/116 | - | 64 | 75 | 88 | 84 | 84 | 64 |
| Carletonville | Merafong City LM | 16/2/7/C231/D004/Z1/P415 | - | - | - | - | - | 68 | 94 |
| Cullinan transfer station | Tshwane Metro | - | 64 | - | 7% | - | - | - | - |
| Fochville transfer station | Merafong LM | - | - | - | - | - | - | - | 4 |
| Ga-Rankuwa | Tshwane Metro | 16/2/7/A230/D9/Z3/P489 | - | - | 83 | 92 | 92 | 74 | 72 |
| Germiston (Simmer & Jack) | Ekurhuleni LM | B33/2/0322/494/P223 | - | - | 92 | 100 | 78 | 84 | 94 |
| Hatherley | Tshwane Metro | B33/2/123/88/P215 | - | 36 | 80 | 80 | 88 | 88 | 84 |
| Heidelberg transfer station | Lesedi LM | 12/9/11/P80 | 32 | - | 18 | 30 | 18 | - | 4 |
| Interwaste FG | Interwaste Environmental Solutions | GAUT 002/10-11/W0030 | - | 100 | 100 | 100 | Closed | Closed | Closed |
| Kempton Park (Chloorkop) | Ekurhuleni LM | - | - | - | 97 | - | - | Closed | Rehabilita-tion |
| Kempton Park (Highveld transfer sta-tion | Ekurhuleni LM | - | - | 40 | 97 | - | 72 | - | - |
| Magalieskruin | Tshwane Metro | - | - | 52 | - | - | - | - | - |
| Meyerton | Midvaal LM | 002/12-13/W0001 | - | - | 96 | 96 | 100 | 96 | 98 |
| Mooikloof | Tshwane Metro | - | 60 | - | - | - | - | - | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mooiplaats | The Waste Group | 16/2/7/A230/154/21/p311 | - | 76 | 99 | 98 | 96 | 96 | 98 |
| Norkem Park transfer station | Ekurhuleni LM | - | - | - | - | - | 75 | - | - |
| Onderstepoort | Tshwane Metro | B33/2/123/7/P6 | - | 52 | 70 | 84 | 76 | Closed | Closed |
| Pretoria East | Tshwane Metro | - | 60 | - | - | | - | - | - |
| Primrose | Ekurhuleni LM | - | - | 68 | 41 | - | - | - | - |
| Randfontein | Rand West City | B33/2/323/34/P12<br>12/9/11/L68331/3 | - | - | 33 | 26 | 46 | Closed | 4 |
| Roodepoort | Johannesburg Metro | - | - | - | - | - | 34 | Closed | Closed |
| Rooihuiskraal | Tshwane Metro | - | - | 84 | - | - | - | - | - |
| Soshanguve | Tshwane Metro | B33/2/123/101/P43 | - | - | 83 | 84 | 78 | 86 | 94 |
| Springs (Rietfontein) | Ekurhuleni LM | 16/2/7/C221/D494/P275 | - | - | 88 | 86 | 88 | 94 | Closed (under construction) |
| Vanderbijlpark (Boitshepi) | Emfuleni LM | - | - | - | 28 | 38 | 32 | 26 | 12 |
| Vereeniging (Sonland Park transfer station) | Emfuleni LM | - | - | - | - | 8 | - | - | - |
| Waldrift | Emfuleni LM | 006/15-16/W0004 | - | - | - | - | 68 | 60 | 24 |
| Westonaria (Libanon) | Rand West City | 16/2/7/C231/D21/Z | - | - | 47 | 9 | 100 | 48 | 18 |

## KWAZULU-NATAL

| Name of branch or landfill site | Municipality or responsible institution | Licence number | Compliance (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Amanzimtoti transfer station | eThekwini Metro | | - | - | - | - | - | - | 60 |
| Hluhluwe | The Big Five False Bay LM | - | - | 24 | 0 | 20 | 2 | 0 | 12 |
| Margate | Ray Nkonyeni LM | 16/2/7/T402/DS/Z1/P26/A1 | - | - | 70 | - | 96 | 96 | 72 |
| Newcastle | Newcastle LM | B33/2/2010/8/P138 | - | 80 | 80 | 80 | 88 | 60 | 84 |
| Paulpietersburg | eDumbe LM | - | 4 | 16 | 14 | 10 | 14 | 4 | 10 |
| Pongola | uPhongolo LM | DC26/WML/0001/2014 | - | 68 | 54 | 68 | 52 | 38 | 28 |
| Richards Bay (Empangeni) | uMhlathuze LM | B33/2/2112/006/P245 | - | - | - | - | - | 60 | 60 |
| Utrecht | eMadlangeni LM | Site closed, but still operational | 32 | 68 | 16 | 7 | 0 | 12 | 30 |
| Vryheid | AbaQulusi LM | - | 40 | 32 | 41 | 24 | 3 | 6 | 2 |

## LIMPOPO

| Name of branch or landfill site | Municipality or responsible institution | Licence number | Compliance (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Ellisras | Lephalale LM | - | - | - | 58 | 32 | 16 | 22 | 16 |
| Groblersdal | Elias Motsoaledi LM | 12/4/10-B/10M2 | 20 | 72 | 90 | 92 | 98 | - | 66 |
| Hoedspruit (Muraleng) | Maruleng LM | 12/9/11/L207/5 | - | - | 18 | 18 | 20 | - | 12 |
| Leeupoort | Thabazimbi LM | 16/2/7/A240/D21/21/P354 | 52 | - | - | 2 | 4 | Closed | Closed |
| Louis Trichardt | Makhado LM | 12/9/11/L413/5 | - | 32 | 70 | 80 | 84 | Closed | Closed |
| Marble Hall | Ephraim Mogale LM | 16/2/7/B300/D58/ZI/P261 | 72 | 88 | 84 | 84 | 84 | 78 | 72 |
| Naboomspruit | Mookgophong LM | 16/2/7/A600/D7/Z2/P399 | 28 | 36 | 19 | 32 | 34 | 30 | 12 |
| Naboomspruit (Western Breeze transfer station) | Mookgophong LM | - | - | - | - | 20 | 20 | - | Closed |
| Naboomspruit (Die Oog transfer station) | Mookgophong LM | - | - | - | - | 32 | - | - | Closed |
| Nylstroom | Modimolle LM | 16/2/7/A600/D2/Z1/P380 | 48 | 16 | - | 12 | 0 | 4 | 4 |
| Phalaborwa | Ba-Phalaborwa LM | 16/2/7/B700/016/21/P276 | 84 | 80 | 32 | 64 | 36 | 54 | 64 |
| Roedtan | Mookgophong LM | - | - | - | - | - | - | - | 0 |
| Thabazimbi | Thabazimbi LM | - | - | - | - | - | - | 0 | 4 |
| Tzaneen | Greater Tzaneen LM | 16/2/7/B800/D2/Z23/1/P501 | - | 100 | 100 | 100 | 100 | 98 | 100 |
| Warm Baths | Bela-Bela LM | B33/2/123/3 | - | 56 | 40 | 37 | 40 | 38 | 36 |

## MPUMALANGA

| Name of branch or landfill site | Municipality or responsible institution | Licence number | Compliance (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Amersfoort | Pixley Ka Isaka Seme LM | - | - | - | - | 6 | - | - | 2 |
| Arnot transfer station | Steve Tshwete LM | - | - | - | - | - | 75 | - | - |
| Barberton | Mbombela LM | B33/2/10960/P131 | - | - | - | - | - | 46 | 70 |
| Belfast | Emakhazeni LM | 12/9/11/P95 | - | 8 | 10 | 14 | 41 | 48 | 28 |
| Breyten | Msukaligwa LM | - | - | - | - | - | 0 | - | - |
| Bethal | Govan Mbeki LM | 17/4/WL/MP/307/13/02 | 72 | 12 | 17 | 11 | 10 | 5 | 4 |
| Carolina | Albert Luthuli LM | - | - | - | - | 0 | 4 | 0 | Closed |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Delmas | Victor Khanye LM | B33/2/220/9/P218 | 48 | 24 | 14 | 6 | 12 | 30 | 38 |
| Dullstroom | Emakhazeni LM | 17/4/WL/MP314/14/01 | - | 12 | 2 | 0 | 4 | 0 | 16 |
| Ermelo | Msukaligwa LM | 16/2/7/C112/D1/Z1/P427 | 84 | 52 | 42 | 18 | 2 | 18 | 10 |
| Evander | Govan Mbeki LM | 17/4/WL/MP307/14/01 | - | - | - | 0 | 0 | 6 | 4 |
| Hendrina transfer station | Steve Tshwete LM | - | - | - | - | 67 | 55 | - | - |
| Kinross | Govan Mbeki LM | 17/4/WL/MP/307/15/01 | - | - | 6 | 6 | 6 | 4 | 16 |
| Leandra | Govan Mbeki LM | - | - | - | - | 20 | 6 | 6 | 32 |
| Lydenburg | Thaba Chweu LM | - | 56 | 12 | 35 | 36 | 33 | 10 | 12 |
| Machadodorp | Emakhazeni LM | 17/4/WL/MP314/14/02 | 16 | 16 | 6 | 3 | 10 | 6 | 8 |
| Morgenzon | Lekwa LM | - | - | - | 1 | 1 | 0 | 0 | 0 |
| Middelburg | Steve Tshwete LM | 16/2/7/B10/D33/Z1/P412 | - | - | 36 | 95 | 28 | 58 | 64 |
| Middelburg (Dennesig transfer station) | Steve Tshwete LM | - | - | - | 44 | 94 | 86 | - | - |
| Middelburg transfer station | Steve Tshwete LM | - | - | - | - | 100 | 92 | - | - |
| Nelspruit | Mbombela LM | 12/9/11/P5<br>16/2/7/X205/D06/P130 | - | - | 64 | 80 | 74 | - | 90 |
| Piet Retief | Mkhondo LM | - | 40 | 68 | 57 | 39 | 12 | 48 | 38 |
| Secunda | Govan Mbeki LM | 17/4/WL/MP/307/13/01 | - | 76 | 42 | 19 | 24 | 10 | 26 |
| Standerton | Lekwa LM | 12/9/11/L109/6 | 24 | 32 | 26 | 14 | 0 | 18 | 18 |
| Volksrust | Dr. Pixley Ka Seme LM | - | - | - | - | 16 | 2 | 16 | 58 |
| Witbank | Emalahleni LM | B33/2/210/32/P136 | 68 | 64 | 47 | 30 | 60 | 34 | 44 |
| White River transfer station | Mbombela LM | 16N/2/7/x205/D06 | - | - | 74 | 80 | 80 | - | 60 |

## NORTH WEST

| Name of branch or landfill site | Municipality or responsible institution | Licence number | Compliance (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Bloemhof | Lekwa-Teemane LM | NWP/WM/DR4/2011/11 | 16 | 20 | 2 | 10 | 6 | 44 | 32 |
| Brits (Hartebeesfontein) | Madibeng LM | B33/2/0121/41/P81 | - | 84 | - | - | - | 26 | 16 |
| Christiana | Lekwa-Teemane LM | NWP/WM/DR4/2011/09 | | 36 | 4 | 12 | 4 | 18 | 22 |
| Coligny | Ditsobotla LM | - | 12 | 8 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Delareyville | Tswaing LM | B33/2/330/44/P219 | 8 | 8 | 9 | 2 | 10 | 28 | 28 |
| Klerksdorp | City of Matlosana LM | 16/2/7/C241/D4Z2/P514 | 64 | - | 45 | 18 | 10 | 36 | 36 |
| Koster | Kgetlengrivier LM | NWP/WM/BP5/2013/23 | - | - | - | - | 4 | 2 | 16<br>Must be closed and rehabilitated |
| Lichtenburg | Ditsobotla LM | B33/2/330/3/P58 | - | 8 | - | - | 16 | 2 | 4 |
| Mooinooi | Sebanye-Stilwater (Inter-waste) | 16/2/7/A210/C29/Z1/P379<br>NWP/WM/BP2/2016/06 | - | - | - | - | 94 | 94 | 80 |
| Ottosdal | Tswaing LM | NWP/WM/NM4/2012/11 | - | 40 | 29 | 2 | - | - | 40 |
| Potchefstroom | Tlokwe LM | 16/2/7/C231/D13/Z1/P | - | 100 | 90 | 94 | 64 | 16 | 46 |
| Potchefstroom transfer station (garden refuse) | Tlokwe LM | - | - | - | - | - | - | - | 10 |
| Rustenburg (Waterval) | Rustenburg LM | NWP/WM/BP1/2011/02 | - | - | 37 | 88 | 62 | 94 | 86 |
| Sannieshof | Tswaing LM | NWP/WM/NM4/2012/09 | - | 12 | 2 | 2 | 2 | 34 | 28 |
| Schweizer-Reneke | Mamusa LM | NWP/WM/DR6/2012/22<br>(variation of WML NWP/WM/DR6/2012/22) | - | 64 | 17 | - | 8 | 22 | 16 |
| Stella | Naledi LM | NWP/WM/DR1/2013/16 | 12 | 16 | 4 | 2 | - | - | 24 |
| Swartruggens | Kgetlengrivier LM | - | - | - | 0 | 0 | - | 0 | 0 |
| Ventersdorp | JB Marks LM | - | - | - | | 3 | - | 0 | 6 |
| Vryburg | Naledi LM | NWP/WM/DR1/2009/01 | 92 | 96 | 50 | 52 | 32 | 28 | 58 |
| Wolmaransstad | Maquassi Hills LM | B33/2/330/19/P166 | - | - | - | - | 34 | 8 | 4 |
| Zeerust | Ramotshere Moiloa LM | B33/2/130/7/P214 | - | - | - | - | 4 | 16 | 38 |

## NORTHERN CAPE

| Name of branch or landfill site | Municipality or responsible institution | Licence number | Compliance (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2015 | 2015 | 2015 | 2015 | 2015 | 2015 | 2015 |
| Barkly West | Dikgatlong LM | - | | 16 | - | - | - | - | - |
| Deben | Gamagara LM | - | - | - | 2 | - | - | - | - |
| Douglas | Siyancuma LM | - | - | - | - | 2 | - | 4 | 10 |
| Hartswater | Phokwane LM | - | | 76 | - | 57 | 14 | 2 | 42 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Hopetown | Thembelihle LM | - | - | - | - | - | 2 | 10 | 10 |
| Jan Kempdorp | Phokwane LM | - | | 32 | - | - | 10 | 0 | 10 |
| Kamieskroon | Kamiesberg LM | 16/2/7/F300/D8/Z1/P347 | - | - | - | - | - | 8 | 8 |
| Kathu | Gamagara LM | B33/2/4441/15/P116 | | 56 | 19 | 16 | 28 | 26 | 12 |
| Kimberley | Sol Plaatje LM | 16/2/7/C901/D2/P265 | 48 | 36 | - | - | 82 | 52 | 70 |
| Kuruman | Ga-Segonyana LM | B33/2/441/9/P128 | 72 | 56 | 39 | 27 | 10 | 52 | 34 |
| Keimoes | Kai !Garib LM | - | - | - | - | - | 2 | 6 | 2 |
| Lennertsville | Kai !Garib LM | - | - | - | - | - | - | - | 2 |
| Olifantshoek | Gamagara LM | - | - | - | 14 | - | - | - | - |
| Orania | Orania Dorpsraad | NC/PIX/SIY/ORA/04/2016 | | | 95 | - | 80 | 66 | 82 |
| Postmasburg | Tsantsabane LM | - | | 56 | 12 | 41 | 20 | - | Closed |
| Prieska | Siyathemba LM | 16/2/7/D720/D1/Z1/P479 | - | - | - | - | - | 16 | 46 |
| Springbok | Nama Khoi LM | 16/2/7/F300/D9/21/P315 | 8 | 20 | 7 | 0 | 0 | 4 | 4 |
| Upington | Khara Hais LM | - | | 84 | 8 | 4 | 6 | 18 | 10 |
| Warrenton | Magareng LM | - | - | - | 6 | - | - | 14 | 18 |
| Williston | Karoo Hoogland LM | - | 8 | - | 10 | 10 | 4 | 22 | 0 |

## WESTERN CAPE

| Name of branch or landfill site | Municipality or responsible institution | Licence number | Compliance (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Ashton | Langeberg LM | B33/2/800/10/P20 | - | - | - | - | - | - | 22 |
| Bellville | Cape Town Metro | 19/2/5/4/A5/6/WL0050/12 (B33/2/720/213/P201) | 80 | - | 80 | 97 | - | 90 | 96 |
| Bitterfontein | Matzikama LM | 19/2/5/4/F3/2/WL0005/18 (variation of WML 19/2/5/1/F3/2/WL0025/14) | - | - | - | - | - | - | 30 |
| Bredasdorp | Cape Agulhas LM | 16/2/7/G501/D1/Z1/P329 | - | - | - | - | - | 46 | 42 |
| De Doorns | Breede vallei LM | 19/2/5/4/B2/3/WL0041/18 (variation of WML 19/2/5/1/B2/3/WL0026/14) | - | - | - | - | - | - | 30 |
| Gansbaai | Overstrand LM | 16/2/7/G400/D24/21/P335 | - | 96 | - | - | - | 86 | 84 |
| George | George LM | WL0683/4 | - | 52 | 41 | 52 | 52 | 44 | 44 |
| Gordons Bay transfer station | Cape Town Metro | E13/2/10/1-A3/193-DWLT404/10 | - | - | - | - | 96 | - | 96 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Hermanus | Overstrand LM | 16/2/7/G501/D3/Z3/P374 | 92 | 88 | 100 | 100 | - | 86 | 88 |
| Klawer | Matzikama LM | 19/2/5/4/F3/6/WL0042/19 | 60 | 44 | 43 | - | - | 24 | 26 |
| Lutzville | Matzikama LM | 19/2/5/4/F3/10/WL0006/18 | - | 36 | 44 | - | - | 22 | 12 |
| Mossel Bay (Grootbrak) | Mossel Bay LM | 19/2/5/4/D6/17/WL0065/18 (variation of WML 19/2/5/1/D6/17/WL0084/14) | - | 64 | 80 | - | 68 | 96 | 86 |
| Mossel Bay (Sonskynvallei transfer station) | Mossel Bay LM | EG13/2/10/1 - D6/17 - DWLT 002/09 | - | - | - | - | - | - | 88 |
| Malmesbury (Highlands) | Swartland LM | 19/2/5/4/F5/16/WL0030/18 (Variation of WML B33/2/720/132/P67) | - | - | - | - | 96 | 94 | 98 |
| Malmesbury (Chatsworth) | Swartland LM | B33/2/900/3/5/P167 | - | - | - | - | - | 80 | 4 |
| Malmesbury (Kalbaskraal transfer station) | Swartland LM | - | - | - | - | - | - | - | 80 |
| Nuwerus | Matzikama LM | 19/2/5/4/F3/13/WL0033/18 (Variation of WML 19/2/5/1/F3/13/WL0118/12) | - | - | - | - | - | - | 20 |
| Oudtshoorn (Grootkop) | Oudtshoorn LM | B33/2/900/3/5/P167 | 40 | 32 | 0 | 26 | 38 | 48 | 26 |
| Riversdale | Hessequa LM | 19/2/5/4/E3/10/WL0088/18 (Variation of WML B33/2/800/106/S/P212) | - | - | - | 84 | - | - | 86 |
| Stellenbosch | Stellenbosch LM | 16/2/7/G203/D16/21/P331 | - | - | - | 89 | 66 | 96 | 96 |
| Stilbaai | Hessequa LM | 19/2/5/1/D/11/WL0060/14 | - | - | 62 | 38 | - | 72 | 88 |
| Kraaifontein Interwaste Management Facility | Richardo Cheemee | 12/9/11/P124 | - | - | - | - | 98 | 98 | 98 |
| Velddrif | Bergrivier LM | 19/2/5/1/F1/14/WL0071/13 | - | - | - | 69 | 26 | 48 | 44 |
| Vredendal | Matzikama LM | 19/2/5/4/F3/17/WL0032/18 | - | 28 | 53 | - | - | 74 | 32 |
| Vanrhynsdorp | Matzikama LM | 19/2/5/4/F3/16/WL0044/18 | - | 68 | 73 | - | - | 54 | 38 |
| Wellington | Drakenstein LM | 19/2/5/4/B3/39/WL0109/17 (Variation of WML E13/2/10/1-B3/36-WL0045/10) | - | - | - | 68 | 80 | 68 | 66 |
| Worcester | Breede Valley LM | 19/2/5/4/B2/32/WL0126/18 (Variation of WML B33/2/800/12/P70) | - | - | - | - | - | 70 | 58 |

An average audit was calculated for each province in which the landfill sites were audited between 2014 and 2021. The percentage allocated to each individual site in a particular province was aggregated and the total was then divided by the number of sites in that province.

*Example:*

*In Mpumalanga, six landfill sites were audited in 2014, 2015 and 2016. Therefore:*

*76% + 8% + 40% + 64% + 32% + 64% = 284% and 284%/6 = 47% average in 2014*

*84% + 16% + 56% + 40% + 24% + 68% = 288%; therefore 288%/6 = 48% average in 2015*

*The conclusion can therefore be made that in 2015 the landfill sites in this province have improved by 1% in comparison with the previous year.*

The average audit scores for each province for 2014–2021 are indicated in figure 5.

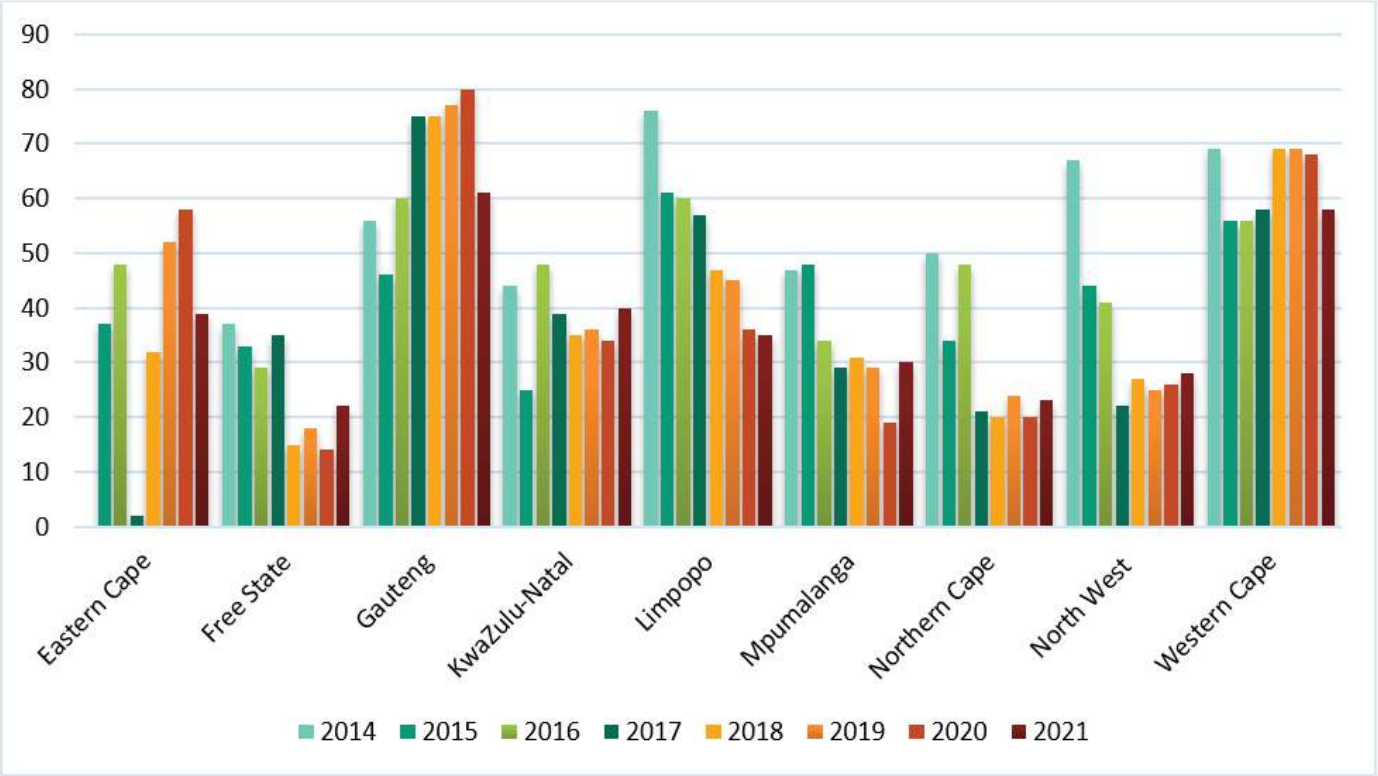



*Figure 5: Average annual audit score (in percentages) for the period 2014–2021, per province*

The percentage of compliance at national level for the period 2014–2021 is reflected in figure 6 below.


*Figure 6: Average annual national compliance score (in percentages) for the period 2014–2020*

# Questionnaire

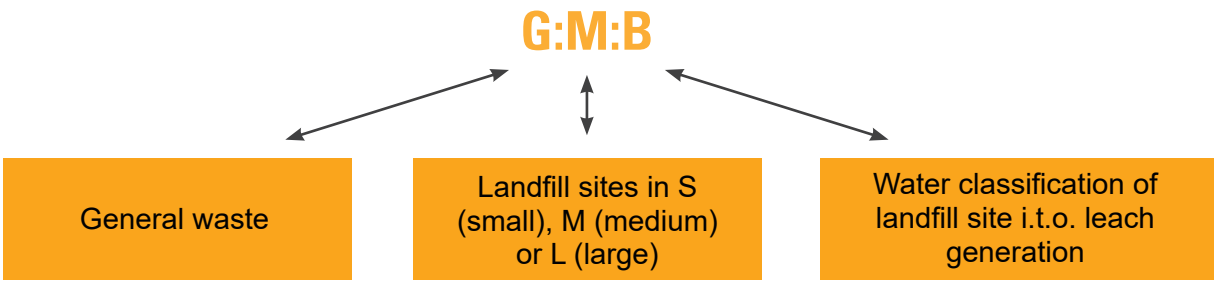
The questionnaire used for landfill site audits from 2017 to 2021 was revised and differs from the one used in 2014, 2015 and 2016. The 33 questions now cover all the minimum requirements for a landfill site. Applicable legislation was also studied to determine the minimum requirements for transfer stations, and the audit can also be used for this purpose, where applicable.

The questionnaire was compiled to establish whether a landfill site complies with the minimum requirements for landfill sites as prescribed in the National Environmental Management: Waste Act 59 of 2008. To pass this audit, a landfill site has to comply with at least 80% of the minimum requirements[1] and then strive to improve on the 20% non-compliance.

The coordinates were also added because the location of the site is not always set out clearly on the licences.

The challenge for the community is that each landfill site has a unique permit or licence with requirements that can be even stricter than the above-mentioned minimum requirements. Inadmissible waste in terms of the legislation can for example be permitted on certain conditions and requirements that have to be met by that particular landfill site. In addition, landfill sites are categorised into three sizes – each with its own conditions. The general rule is: the bigger the site, the stricter the requirements.

Accordingly, AfriForum decided to compile a questionnaire that can apply to any general (G type) landfill site. The classification system works as follows:




**Example:**

The questionnaire is divided into five main **categories** and **sub-categories**.

The sum total of the points for the questionnaire is 25. This can be multiplied by 4 to obtain the percentage (%) of the result.

| Minimum requirement | Fully compliant<br>1 | Partially compliant<br>½ | Non-compliant<br>0 | Comments | Score |
|---|---|---|---|---|---|
| **1. Access and control** | | | | | / 8 |
| **1.1 Signs** | | | | | |
| a) Signs in the appropriate official languages must be erected in the vicinity of the landfill, indicating the route and distance to the landfill site from the nearest main roads. | x | | | | ½ / ½ |
| b) Is there a sign at the gate indicating what type of waste can be dumped as well as the operating hours of the site? | | x | | | / ½ |
| **1.2 Road access** | | | | | |
| a) Are all roads to and within the site maintained? | | | x | | 0 / 1 |

Score for main category

Weight of question

Mark with x in appropriate box. Use own discretion, with minimum requirement as outcome.

Comments are important for evidence, notes and additional information for discussions with authorities after the audit.

1. The minimum requirements for landfill sites (1998, second edition) that were published by the Department of Water Affairs and Forestry. Available at http://sawic.environment.gov.za/documents/266.PDF.

*Table 3: Questionnaire*

**AFRIFORUM'S GENERAL CHECKLIST ON MINIMUM REQUIREMENTS FOR LANDFILL SITES 2021**

*(Take photos as proof of maladministration)*

| | | | | | |
|---|---|---|---|---|---|
| What is the name of the landfill site? | | | | | |
| Who is the responsible authority? | | | | | |
| Small/medium/large site (see classification below) | | | | | |
| Minimum requirement | Fully compliant<br>1 | Partially compliant<br>½ | Non-compliant<br>0 | Comments | Marks |
| **1. Access and controls** | | | | | **/ 8** |
| **1.1 Signs** | | | | | |
| a) Are signs erected in the appropriate official languages in the vicinity of the landfill, indicating the route and distance to the landfill site from the nearest main roads? | | | | | / ½ |
| b) Is there a sign at the gate indicating what type of waste can be dumped, as well as the operating hours of the site? | | | | | / ½ |
| **1.2 Road access** | | | | | |
| a) Are all roads to and within the site maintained? | | | | | / 1 |
| b) Is two-way traffic possible in all weather conditions? | | | | | / ½ |
| c) Are unsurfaced roads watered regularly to restrict dust levels? | | | | | / ½ |
| **1.3 Access control and security** | | | | | |
| a) Is there a proper 1,8 m fence around the landfill to keep people and animals out? | | | | | / ½ |
| b) Is the fencing fixed/whole and is it maintained? | | | | | / ½ |
| c) Is there access control at the landfill's gate(s)? | | | | | / 1 |
| d) Does the site have security guards patrolling the site? | | | | | / 1 |
| **1.4 Waste acceptance and waste types** | | | | | |
| a) Is waste inspected before it is accepted to confirm that it is general waste? | | | | | / 1 |
| **1.5 Tariffs** | | | | | |
| a) Are disposal tariffs displayed on notice boards? | | | | | / ½ |
| b) Are disposal fees collected? | | | | | / ½ |

| | | | | | |
|---|---|---|---|---|---|
| **2. Resources** | | | | | **/ 3** |
| **2.1 Infrastructure** | | | | | |
| a) Are there services such as water, sewerage, electricity, weighbridges and site offices? | | | | | / 1 |
| **2.2 Plant and equipment** | | | | | |
| a) Is there sufficient machinery and is equipment in working condition? | | | | | / 1 |
| **2.3 Staff** | | | | | |
| a) Is the operation of all sites carried out under the direction of sufficiently qualified staff? For example:<br>• Site supervisor<br>• Landfill manager | | | | | / 1 |
| **3. Operations** | | | | | **/ 7 ½** |
| **3.1. Operating plan** | | | | | |
| a) Does the responsible authority have a waste operating management plan?<br>The plan must include the following:<br>1. Excavation sequence<br>2. Projected/progressive development of landfill with time<br>3. Daily cell construction<br>4. Provision of wet weather cells<br>5. Site access<br>6. Drainage<br>7. Operating monitoring procedures, including the role of a monitoring committee<br>8. Action plans in response to problems detected by monitoring. | | | | | / 1 |
| b) Does the responsible authority have a response action plan? This includes an emergency evacuation plan. | | | | | / ½ |
| **3.2 Site development and cells** | | | | | |
| a) Is waste compacted daily and covered with soil to prevent waste from being blown away by the wind? | | | | | / 1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| b) | Is an easily accessible wet weather cell (with a well-drained gravel-type base) constructed close to the site entrance, for use under wet weather conditions? | | | | | / 1 |
| **3.3** | **Control of nuisances** | | | | | |
| a) | Are there any fires burning on the site? | | | | | / 1 |
| b) | Is all litter contained within the site itself (preferably to be contained in the disposal area only)? | | | | | / 1 |
| **3.4** | **Waste reclamation** | | | | | |
| a) | Is waste reclamation by reclaimers prohibited at general waste disposal sites because of the risk to health and safety? Therefore, no reclaimers may be present at the site. | | | | | / ½ |
| b) | Are there facilities/provisions available for recycling, if waste reclamation/recycling is taking place? | | | | | / ½ |
| **3.5** | **Prohibited waste (unless specifically authorised by the permit or licence)** | | | | | |
| a) | Does the dumping of medical or animal waste (carcases, bones, stomach content) occur? | | | | | / ½ |
| b) | Does the dumping of tyres occur? | | | | | / ½ |
| 4. | **Drainage** | | | | | **/ 3** |
| a) | Is there a proper and operational storm water infrastructure on the site? | | | | | / 1 |
| b) | Are all drains maintained to promote run-off without excessive erosion? | | | | | / 1 |
| c) | Are all contaminated water and leachate that form on site stored in a sump or retention dam.? | | | | | / 1 |
| 5. | **Monitoring and recordkeeping** | | | | | **/ 3 ½** |
| a) | Are records kept of all waste entering the site? | | | | | / 1 |
| b) | Does the landfill site have a permit or waste management licence? What is the permit or licence number? A copy of the permit/licence should be available on site. | | | | Permit/licence no: | / 1 |
| c) | Was the correct personal protective equipment issued to municipal workers on site? | | | | | / ½ |
| d) | Is the landfill site audited and inspected internally every 12 months? Copies should be made available for public comment/ input (e.g. landfill audit committee). | | | | | / ½ |
| e) | Is there a landfill audit committee within the municipality of which communities can form part? | | | | | / ½ |
| | | | **Total** | | | **/ 25** |

*The Waste Group Class B liner being completed at the Mooiplaas landfill site in Centurion, Gauteng*

# What has been achieved so far?

## National landfill site audit project

After the completion of the 2016 landfill site audit report, a number of meetings were held with the Waste Management Division of the Department of Environmental Affairs. AfriForum also made a submission to the department's waste management licensing task team to have one landfill site per province rehabilitated.

## Liaison with national, provincial and local governments

In cooperation with the Minister of Environmental Affairs and her team, AfriForum identified six sites at the end of 2020 that pose various challenges, with the aim of rehabilitating and restoring these through different models. It is an ongoing process and various meetings are held to address the challenges that face these sites. These six sites are:

- **Libanon landfill site in Westonaria (Rand West City LM)**
- **Naboomspruit (Mookgophong LM)**
- **Thabazimbi (Thabazimbi LM)**
- **Frankfort (Mafube LM)**
- **Sasolburg (Metsimaholo LM)**
- **Potchefstroom (JB Marks LM)**

AfriForum and the national Department of Environmental Affairs recently agreed at a meeting in May 2021 to visit these six sites. After each visit, certain steps will be decided on to get these sites up to standard.

A positive relationship has been established with the Department of Environmental Affairs. Mr Mark Gordon, Deputy Director-General of Chemicals and Waste Management, wrote a letter to AfriForum in which he provided the provincial waste management officers' contact details so that branches were able to involve them in the audit. He also requested AfriForum to meet with him after completion of the project to discuss the findings.

AfriForum's environmental team has also been meeting with various experts in the waste industry since the end of 2019. These include Unisa, the UWC, the CSIR, the Waste Group and other private companies. All parties support what AfriForum wants to achieve with the project.

Excellent cooperation led to various successes, for example the Hatherley landfill site in Pretoria. This site – responsible for a large part of Northern Gauteng's waste – obtained only 36% in the 2016 audit. The Hatherley was then prioritised by AfriForum for the Department of Environmental Affairs and the Tshwane Metro. After many meetings and discussions to rehabilitate the landfill site, the site has been scoring above 80% since 2017.

## Court cases

AfriForum's Naboomspruit branch was involved in a landfill site court case, which was heard on 9 October 2017, but with the decision of the court pending. Judgment was eventually delivered in favour of AfriForum in a court case against the Lim 368 Local Municipality. Judgment was also delivered in favour of AfriForum in the Northern Gauteng High Court on 7 February 2018, with costs, regarding the appalling way in which the Naboomspruit landfill site was managed.

Since then, however, there has been little improvement to this landfill site. AfriForum will monitor the situation closely and, if required, bring an application of contempt of court to bring the site up to the required standard.

This landfill site is one of the six sites earmarked by AfriForum and the national Department of Environmental Affairs for rehabilitation. The site will probably be rehabilitated through a public/private partnership.

## Challenges

The greatest challenge to solving the problems is a matter of will from the side of the different government spheres. It seems that the national government is eager to see improvement on local level, but provincial and local government spheres do not share this sentiment and/or do not have the competence to improve.

Another major challenge is that municipalities do not know that the new Municipal Infrastructure Grant (the so-called yellow fleet) can be utilised to fund landfill site infrastructure. Municipalities also do not know how the application process works. This grant could have helped municipalities to fund the necessary infrastructure via National Treasury instead of putting local taxpayers under more pressure.

A major concern is corruption that has municipalities in its grip. No responsibility is taken for corruption and there are no consequences. Subsequently, available funds are not spent correctly and effectively.

# Action plan

The 2020 report touched on various issues with municipalities across the country that are responsible for waste management.

Several municipalities that did not meet the minimum requirements in the period 2014–2020 also did not respond to the letters AfriForum sent to them regarding the mismanagement of the landfill sites under their control. Letters were once again sent to all the municipalities that did not comply with the minimum requirements in 2020. Some sites even deteriorated further since the 2020 audit took place. AfriForum will monitor the progress of these sites and will act more decisively to ensure compliance with the minimum requirements.

In 2020 AfriForum brought up the landfill site issue during the public participation process for the integrated development plan in the various municipalities. AfriForum branches also started to compile action lists and submitting these to municipal managers to address the landfill site issue. In this way, AfriForum wants to ensure that the municipalities concerned budget sufficiently in the coming financial year to meet the needs of the community with respect to landfill sites.

The 2021 report will be used as a constant against which to measure the same infrastructure in all the other AfriForum branches in 2022.

The process for ensuring compliance includes the following:

1. A comprehensive track record or paper trail was started to keep a record of specific sites.
2. Non-compliance will be addressed in a letter demanding a comprehensive plan of action from the responsible authority. The municipality must indicate how and by what dates they will meet the requirements with which they do not comply at present.
3. Provincial departments are responsible for monitoring landfill sites, enforcing the law and issuing licences for unlicensed landfill sites. AfriForum will continue to exert pressure on the provinces to carry out their duties.
4. Should municipalities fail to resolve the issues, legal action will be taken. It is possible to open a criminal case against the administrative official.
5. AfriForum will also be obliged to rehabilitate landfill sites that do not comply with the minimum requirements, and to claim the money back from the municipality in question.
6. This report will also be handed to the Green Scorpions (Environmental Management Inspectors or EMIs) for further investigation of landfill sites not complying with the minimum requirements.
7. The 2021 report – which contains landfill site records over a period of seven years – will be submitted to the relevant minister and the department to discuss and implement strategies that will address the problems.

8. AfriForum will attempt in 2021 to take control or landfill sites by way of public-private partnerships or PPPs, or will facilitate this process between the state and private companies that are suitable to perform the duties involved.

This process can be implemented by following the following steps as set out in figure 6 below.


*Figure 6: Possible steps to be followed by communities to bring about sustainable improvement at a landfill site*

AfriForum believes that municipalities and the relevant departments will collaborate in order to resolve these important matters and to ensure a safe and healthy environment for all people in South Africa.

AfriForum will constantly investigate new technologies in terms of alternatives for landfill sites and in this way attempt to bring relief from the overburdening of landfill sites, ensuring that not all waste end up in landfill sites. AfriForum will make some proposals in this regard.

# Alternative solutions for landfill sites

## Waste-to-energy

In collaboration with waste-to-energy (WTE) companies AfriForum envisages to put alternative solutions for landfill sites and recycling on the table.

The handling of municipal waste is an expenditure which can be turned into a profit by extracting the energy locked in the waste, through a process of combustion or gasification. This is common practice in many countries and provides high yields. Only a small portion of waste which is not combustible or gasifiable needs to be removed and taken to a landfill site or must be treated by another suitable process.

The health risks associated with a combustion or gasification plant are substantially less than those associated with operating a landfill site. No significant poisonous gases are released. However, a gasification process should not be mistaken for a fermentation process. A gasification process is a fire-related or pyrolytic process, whereas a fermentation process is anaerobic in nature and produces methane gas, which is four times more damaging to the earth when compared to carbon dioxide.

Municipal solid waste (MSW) can be successfully converted into combined heat and power (CHP) energy, instead of storing it at high cost in landfill sites. Two methods which are applied all over the world for reaching this goal are combustion and gasification. The combustion option requires a one-time design of a plant generating steam to feed a steam turbine which will drive a generator.

An even better option is to gasify the MSW, which produces a flammable gas consisting mainly of carbon monoxide and hydrogen and which is called Syngas. The Syngas is then used to power an internal combustion engine (ICE) similar to a diesel or petrol engine. The rotating ICE in turn drives a generator to generate electricity. The Syngas can also be directly combusted

in steam boilers to generate steam and hot water. Enormous amounts of heat energy in the form of steam and hot water is generated during the cooling phase of the process. Such heat energy can be transferred directly to nearby industries.

The gasification process produces a higher yield when compared to the combustion process. It also produces more by-products which can be sold at a profit, such as biochar and biomass concentrates. Biochar is a valuable commodity to be used in agriculture to enrich the carbon content of poor agricultural soil. Biomass concentrate is also used as an ingredient of insecticides.

In this way, a landfill site can serve as a power plant providing CHP energy to an industrial plant and/or a community or settlement. The provision of power to such an industrial park or community will also not be subject to power supply interruptions.

An aspect which should definitely be considered is the stakeholder community who make a living out of landfill sites. Such people can be employed and/or their collected waste can be bought from them for purposes of gasification or recycling. In addition, a portion of the share capital should be reserved for the upliftment of the surrounding poor communities. Without such initiatives, the gasification plants will be opposed by the local community. Investors should take the utmost care that no members of the stakeholder community are disadvantaged in the process. In this way, the goodwill surrounding the construction of a WTE plant will be noticed and appreciated, leading to the initiation of more projects of this kind.

The life expectancy of such a plant can be more than 50 years. Considering the fact that the combined plant consists of a number of separate modules, the whole plant does not need to be switched off for repair or maintenance work. The surface area needed for a gasification plant is substantially smaller than that needed for a landfill site.

**Keywords:**

| English |
| --- |
| waste-to-energy (WTE) |
| municipal solid waste (MSW) |
| refuse-derived fuel (RDF) |
| combined heat and power (CHP) |
| internal combustion engine (ICE) |
| internal rate of return (IRR) |
| kilowatt-hour (kWh) of energy |
| megawatt (MW) power |


## Eco bricks

AfriForum believes alternative products can be manufactured from waste which will assist in relieving the pressure of the enormous quantities of waste which are dumped unnecessarily on landfill sites although they could be used in economically viable ways. One of the proposals to realise this objective is the manufacturing of so-called ecobricks which will relieve pressure on landfill sites as well as contribute to the erection of low-cost housing.

An ecobrick basically consists of a plastic 2-litre bottle which is filled with clean, dry, non-recyclable waste which is compacted in the bottle. Such a bottle, when compacted, can then be used as building material for low-cost housing as well as for manufacturing various kinds of furniture.

## Plastic roads and potholes

The notion of a *plastic road* is a fairly new concept in the world and in South Africa. In 2019 the first section of a plastic road was built in Jeffreys Bay in the Eastern Cape. The process allows for an efficient way of recycling plastic optimally and shows an exciting potential for job creation, reduction of waste and pollution as well as cost savings.

The project involved "tarring" a 300 m stretch of a road by making use of plastic waste. The companies who successfully completed this product were the Scottish manufacturer MacRebur in collaboration with the Port Elizabeth-based companies SP Excel and Scribante.

This type of project has been successfully implemented in countries such as the Netherlands, Canada, Australia and the UK (Scotland).

# HOW TO MAKE AN ECOBRICK

**Warning.** This is a temporary solution. Reusable solutions should replace problematic materials.

1 USE A CLEAN PLASTIC BOTTLE

2 LOCATE A STICK

3 FIND OUT WHAT IS NOT BEING RECYCLED IN YOUR COMMUNITY

4 STUFF THE CLEAN & DRY NON-RECYCLABLES TIGHTLY INTO THE BOTTLE

## PPPs

A public-private partnership or PPP refers to a long-term agreement between an organ of state such as a municipality and a private entity, usually a registered company. The objective of a PPP is to transfer services or functions for which an organ of state is responsible to a private company which will then deliver such services or functions. The agreement involves a concomitant financial risk for the private partner.

Municipalities find themselves in a rapidly changing technological environment and often cannot access such technologies because of competitive costs. In contrast, the private sector competes on a level playing field and makes use of proven management processes and technologies. A PPP creates an ideal opportunity to bridge the gap which has developed in this respect in an efficient way.

Without reinventing the wheel, the use of proven technologies, experience and expertise can be shared, which will be cost-efficient to organs of state. For the general public, it will entail the delivery of better and cost-efficient services, which will leave a surplus of financial means to deliver even more services.

*A street in Jeffreys Bay is repaired by making use of plastic waste*

# Conclusion

AfriForum's landfill site audit project shows the need for clear political intent and decisions to reuse, recycle and reduce waste in a sustainable way, as well as to maintain and manage the infrastructure for waste management. For this reason, the minister was approached in 2016 to address the poor communication on the local level of government and to create political will at grassroot level.

It becomes clear from the 2021 audit report that the watchdog function performed by AfriForum bears fruit at the local level, and in particular in stimulating communication between communities and government officials. According to the 2021 landfill site audit report, only 17% of municipalities met the minimum requirements. This is on par with the 17% of landfill sites that met the 80% requirement in 2020. However, both scores are clearly indicative of unacceptable levels of performance in South Africa, as well as basic and serious shortcomings in waste management among people and organisations responsible for proper waste management countrywide.

Mismanagement of landfill sites is caused by a number of factors, including the following:

- **corruption**
- **lack of political will**
- **lack of leadership and denial of accountability**
- **lack of the necessary skills in respect of waste management**
- **gross contempt for the relevant legislation as well as for the natural environment**
- **insufficient funds for rehabilitation**
- **mismanagement of available funds**
- **low priority given to managing landfill sites**
- **no repercussions for contempt of legislation.**

The report also shows that not a single illegal landfill site (a site which does not have a licence nor a waste management plan) conforms to the minimum legal requirements; yet municipalities continue to use these sites as dumping terrains. Very little or no recycling takes place on these sites, and this greatly increases the associated risks for people's health and the environment. This problem should be addressed as a matter of urgency.

The most noteworthy observation is that various sites closed; also that some sites are still operational although these should have been closed according to their licences. This is worrisome, because it means that certain towns and cities have no landfill sites left – which will most probably lead to illegal dumping. There is also no indication yet of newly-identified landfill sites.

The report shows that success was obtained in the management of certain of the above-mentioned problems, however, which can be ascribed to four important elements:

1. **Wherever the AfriForum branch is involved in an efficient way in the waste management of the local municipality, the watchdog function of the community is automatically activated. This enhances the transparency of the services delivered by the municipality and thus improves the management of waste processing in general.**
2. **The community's participation in the democratic process was improved, for instance by insisting on the municipality's obligation to create forums where the community can provide inputs and keep a critical eye on operations. This exerts pressure on municipalities to comply with and progressively improve on their constitutional obligation, i.e. to manage landfill sites in a sustainable way and to improve year after year.**
3. **The role of the provincial departments in charge of monitoring, legal compliance and issuing of licenses was placed under the spotlight. By involving the provincial regulators in AfriForum's annual landfill site audit project, cooperation between the AfriForum branches and the provincial departments was promoted. It also forces the provincial departments to comply with their constitutional obligations where this may have been omitted in the past. In future, AfriForum plans to work closely with the national departments to restore some of the landfill sites and to investigate the potential of PPPs.**
4. **AfriForum continuously investigates new technologies and alternative ways to improve the functioning of landfill sites as well as looking at alternatives for dumping waste in landfill sites.**

Finally, the focus is directed to the most important contributions by national government: the overall supervision of the two lower spheres of government, and the creation of the legislative and regulatory framework which must define South Africa's waste management strategies and the standards set for these. The challenge is to bring together the three spheres of government and the local communities so that they can function in harmony to manage the country's solid waste in a sustainable way.

AfriForum will continue to monitor the landfill sites that have been audited, and investigate alternatives for satisfactory waste management in South Africa.