

IMPACT ASSESSMENT FOR THE LICENSING OF THE GROBLERSHOOP LANDFILL

In terms of the NEMA EIA Regulations of 2014 (**Appendix 1d**), a Basic Assessment Process must include an impact risk assessment process inclusive of cumulative impacts which focuses on determining the geographical, physical, biological, social, economic, heritage, cultural sensitivity of the sites, locations within sites, the risk of impacts of the proposed activity and technology alternatives on these aspects in order to determine **(i) the nature, significance, consequence, extent, duration and probability** of the impacts occurring to, and **(ii) the degree to which these impact - (aa) can be reversed; (bb) the degree to which the impact may cause irreplaceable loss of resources; and (cc) the degree to which the impact can be mitigated.**

The Impact Assessment and Rating Methodology is attached as **Appendix G1**. The assessment is for impacts on the 'environment' in its broad sense as per the definition in the National Environmental Management Act, 1998 (No. 107 of 1998) which refers to the 'environment' as

“ the surroundings within which humans exist and that are made up of -

- (i) the land, water and atmosphere of the earth;
- (ii) micro-organisms, plant and animal life;
- (iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and
- (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.”

The impact assessment tables on the pages overleaf highlight the potential impacts that will occur during the Construction, Operational and Decommissioning/Closure phases of the Landfill.

Important to note; activities that will be undertaken to give effect to the proposed development gives rise to certain impacts. For the purpose of assessing these impacts, the project has been divided into the construction, operational and decommissioning phases discussed in **Error! Reference source not found.** and Table 2. It must be noted that the phrase ‘construction’ will be used interchangeably with ‘upgrading’, and ‘licensing’ as it is understood that although the sites will be licenced for operation, construction activities such as construction of the waste disposal cells, access gates and boundary fencing etc. related to the ‘upgrading’ of the site will be undertaken.

Table 1: Impacts during the Construction (‘upgrading’, licensing), Operational and Decommissioning phases

Activity	Aspect	Nature of Impact	Description of Impact		Criteria					
Theme 1: Biophysical Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
Construction Phase										
Upgrading of the Groblershoop landfill	Loss of biodiversity	Negative	The upgrade of the landfill will result in the clearing of existing vegetation	Site	Medium Term	High	Probable	Medium	Long Term	High
	Groundwater contamination	Negative	Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leakages has a potential to pollute	Local	Long Term	High	Probable	Medium	Short Term	Medium

Activity	Aspect	Nature of Impact	Description of Impact	Criteria						
Theme 1: Biophysical Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
			groundwater							
	Loss of faunal habitat	Negative	The upgrade of the landfill will result in the clearing of vegetation associated to faunal habitats. There were however no faunal species observed on the site during at least two visits.	Local	Medium Term	Medium	Improbable	Medium	Short Term	Medium
	Soil contamination	Negative	Contamination of surrounding soil resources through spillages and overflows emanating from the construction activities may result in the contamination of soil	Site	Short Term	High	Probable	Medium	Short Term	Medium

Activity	Aspect	Nature of Impact	Description of Impact	Criteria						
Theme 1: Biophysical Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
	Soil compaction	Negative	Compaction from landfill construction activity may emanate thereby causing erosion problems	Local	Medium Term	High	Probable	Medium	Short Term	Medium
The status of the biophysical environment within the Groblershoop landfill boundary site has already been markedly transformed. The potential impact on the biodiversity in the area is considered to be of low significance without mitigation during the landfill upgrade.										
Operational Phase										
Upgrading of Groblershoop Landfill	Groundwater contamination	Negative	The risk of landfill leachate contaminating surface and groundwater resources, thereby reducing the quality of groundwater in the area.	Local	Medium Term	High	Probable	Medium	Long Term	Medium
	Faunal disturbances	Negative	Introduction of a formal landfill is likely cause disturbances to the existing faunal	Local	Medium Term	Medium	Probable	Low	Short Term	Medium

Activity	Aspect	Nature of Impact	Description of Impact	Criteria						
				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
Theme 1: Biophysical Environment										
			communities and may attract new species in the area.							
	Establishment of alien vegetation	Negative	The clearing of vegetation during landfill maintenance and site rehabilitation activities will enhance the establishment of alien species.	Site	Medium Term	Medium	Probable	Medium	Short Term	Medium
Decommissioning Phase										
Decommissioning of the Groblershoop landfill	Alien species infestation	Negative	The decommissioning of the Groblershoop landfill may result in the encroachment of alien invasive species.	Site	Short Term	Medium	Probable	High	Short Term	Medium
	-Insufficient stormwater control	Negative	Rehabilitation activities	Local	Short Term	Medium	Probable	High	Short Term	Medium

Activity	Aspect	Nature of Impact	Description of Impact	Criteria						
Theme 1: Biophysical Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
	measures on site may result in soil erosion in areas that are not properly managed during the rehabilitation phase - Contaminants may also be released from the waste body into the soil during the site rehabilitation		associated with the decommissioning of the landfill may result in the erosion of soil used for capping							
The decommissioning phase will entail the closure of the landfill site, the covering of the waste body, re-capping, reshaping, and landscaping of the waste disposal area and ultimate rehabilitation of the landfill. It is anticipated that the Municipality will determine appropriate end use following the final rehabilitation of the site. The decommissioning phase will eliminate all environmental problems that occur as a result of landfill operations.										

Table 2: Impacts during the Construction, Operational and Decommissioning phases

Theme 2: Human Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
Construction Phase										
Upgrading of the Groblershoop landfill	Efficient solid waste disposal services	Positive	The proposed project is of strategic importance and serves to provide adequate solid waste disposal infrastructure is in line with the Municipality's IDP requirements.	Site	Long Term	High	Probable	High	Long Term	Medium
	Services disruption	N/A	The disposal of waste on the landfill site will not cease during the upgrade. It is recommended that the Contractor designate a site for temporary disposal during the upgrade. Beside the	Site	Short Term	Low	Probable	High	Short Term	Low

Theme 2: Human Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
			landfill, there are no other services that are known to exist in the area.							
	Local Economy	Positive	Creation of potential opportunities to support local business and communities, including education and training as well as community based projects and programmes.	Local	Long Term	Medium	Probable	High	Long Term	Medium
	Land use	Positive	The confinement of the proposed upgrade within the boundaries of the existing land use limits the impact on land use and zoning. The areas planned for formal	Site	Long Term	Low	Probable	Low	Long Term	High

Theme 2: Human Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
			expansion are already disturbed.							
	Increased noise generation	Negative	The use of heavy machinery during construction may result in the generation of noise on site as noise levels are currently low. However, there are no sensitive noise receptor residing or working in such close proximity to the landfill site.	Local	Short Term	Low	Probable	Low	Short Term	Low
	Visual & Aesthetic	Negative	Visual and aesthetic impacts activities such as excavation, stockpiling of construction material, waste and rubble	Local	Short Term	Medium	Probable	Medium	Short Term	Low

Theme 2: Human Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
			handling of materials will occur.							
	Air quality (dust)	Negative	Dust emanating from construction related activities (excavation, earth grading etc.) will cause a visual nuisance.	Local	Short Term	Medium	Probable	High	Short Term	Medium
	Air quality - odour	Negative	Odours associated with the biological and chemical processes that occur during the decomposition of wastes.	Site	Long Term	Low	Probable	High	Short Term	Medium
	Loss of heritage resources	Negative	Construction activities may unearth and damage heritage resources present within the planned excavation	Site	Short Term	Low	Probable	High	Irreversible	High

Theme 2: Human Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
			works. No heritage features were noted within the site boundary.							
	Local roads and Traffic	Negative	There will be minimal traffic disruptions within the surrounding community	Local	Short Term	Low	Probable	Medium	Short Term	Low
	Health and safety	Insignificant	Construction is restricted to the landfill site boundaries, the risk to public safety is lower.	Site	Short Term	Low	Probable	High	Short Term	High
The project will thus have an overall positive socio-economic impact for the receiving area, which can be considered as of high significance. The proposed development is limited within the landfill boundary and none of the neighbouring properties will be directly affected. Negative impact identified will reduce the impacts to lower significance with mitigation.										
Operational Phase										
Upgrading of the Groblershoop landfill	Efficient solid waste disposal services	Positive	The proposed project is of strategic importance and developments and serves to provide adequate solid	Regional	Long Term	High	Highly Probable	High	Long Term	Medium

Theme 2: Human Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
			waste disposal infrastructure is in line Municipality's IDP requirements							
	Elimination of current environmental problems	Positive	The upgrade of the Groblershoop landfill will reduce the current environmental problems (visual, odour, health etc.) as the landfill will operate in line with the applicable legislation	Local	Long Term	High	Probable	High	Long Term	
	Visual Impact	Positive	Once in place, the landfill will have an aesthetic/visual impact, improved visual impacts than that of the existing operations	Local	Long Term	High	Probable	High	Irreversible	Low

Theme 2: Human Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
Noise impact	Negative	Noise from landfill operations will result from trucks moving within the site as well as the use of various machinery to undertake activities such as covering and compaction	Local	Long Term	Low	Probable	Low	Short Term	Low	
Improved safety and security	Positive	The upgrade of the landfill will include the establishment of a fence, which will allow for access control and the prevention of animals and the community from obtaining unauthorised entry. The establishment of a fence will further prevent	Site	Long Term	High	Probable	High	Long Term	Long Term	

Theme 2: Human Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
			vandalism which may result in damage to infrastructure.							
Decommissioning Phase										
Decommissioning of the Groblershoop landfill	Provision of services	Negative	If the licensing of the landfill site is halted without any consideration of other feasible waste disposal options, the community will have no optional disposal site than the current site. Similar waste management practices as currently will continue thus continue to degrade the environment.	Regional	Long Term	High	Definite	High	Short Term	High

Theme 2: Human Environment				Extent	Duration	Intensity	Probability	Determination of Significance	Reversibility	Irreplaceable loss of Resources
<p>The decommissioning phase will entail the closure of the landfill site, the covering of the waste body, re-capping, reshaping, and landscaping of the waste disposal area and ultimate rehabilitation of the landfill. It is anticipated that the Municipality will determine appropriate end use following the final rehabilitation of the site. The decommissioning phase will eliminate all environmental problems that occur as a result of landfill operations. It must however be also noted that the improper decommissioning of the Groblershoop landfill may result in other environmental problems related to human health and environmental contamination. Please note that as decommissioning is a listed activity which will require a basic Assessment process, the Decommissioning activities will be addressed in detail as part of the closure of the landfill.</p>										