



**the DEDECT**

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**Republic of South Africa**

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*Basic Assessment Report for the Closure of the Stella Waste License Application NWP/WM/DR1/2013/16  
Naledi Local Municipality*

**(For official use only)**

**File Reference Number:**  
**Application Number:**  
**Date Received:**


Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

**Kindly note that:**

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

**SECTION A: ACTIVITY INFORMATION**

Has a specialist been consulted to assist with the completion of this section?

YES	NO X
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If YES, please complete the form entitled "Details of specialist and declaration of interest"

for appointment of a specialist for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

**1. ACTIVITY DESCRIPTION**

Describe the activity, which is being applied for, in detail<sup>1</sup>:

<b>Project Description</b>											
<p>The application is for a waste management licence for the closure of the unlicensed Stella landfill site located at Stella in the Naledi Local Municipality. Authorising the waste management activities at Stella should also include the disposal of abattoir waste around the oxidation dam. The IWMP, SDF, IDP and other related planning documents of both the Naledi Local Municipality and Dr Ruth Segomotsi Mompati District Municipality refer to the disposal of domestic waste only, while the ongoing process of disposing of abattoir waste and the resulting impacts are never referred to.</p> <p><b>Please note:</b> The project excludes the upgrading of the dysfunctional oxidation dams to the east of the domestic waste disposal area. It is alleged that the oxidation dams and waste management activities are the sources of the ground water pollution of the regionally important aquifer. It is strongly recommended that the waste site cannot be closed in isolation of the inadequate sewage treatment works.</p> <p><b>NW-DEDECT Reference:</b> NWP/WM/DR2/2013/26.</p> <p><b>The listed activity applied for</b></p> <p>The listed NEM:WA activity is: Category A, Activity 14, The decommissioning of a facility for waste management activity listed in Category A or B of this schedule published in GN. 921 of 29 November 2013.</p> <p>This application does not include the planned waste transfer station.</p> <p><b>Scope of the application</b></p> <table border="1"> <thead> <tr> <th>Phase</th> <th>Included in the scope of this application</th> <th>Responsibility</th> <th>Where/how to address</th> </tr> </thead> <tbody> <tr> <td>Interim operation of the landfill site</td> <td>No</td> <td>NW DEDECT</td> <td>Interim operation of the landfill site is to be regulated by the NW DEDECT through conditions for operation as part of the waste management license. Refer to the EMPr and the Closure Plan attached as Attachment D for the recommended phased approach and interim arrangements to</td> </tr> </tbody> </table>				Phase	Included in the scope of this application	Responsibility	Where/how to address	Interim operation of the landfill site	No	NW DEDECT	Interim operation of the landfill site is to be regulated by the NW DEDECT through conditions for operation as part of the waste management license. Refer to the EMPr and the Closure Plan attached as Attachment D for the recommended phased approach and interim arrangements to
Phase	Included in the scope of this application	Responsibility	Where/how to address								
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<sup>1</sup> Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

			<p>manage waste responsibly. It is foreseen that the waste transfer station with final disposal at Vryburg as proposed in the IWMP's of both the district and local municipalities will take time to implement.</p> <p>An integrated and sustainable solution will also have to be found for managing the abattoir waste that is being disposed there.</p> <p>An integrated solution is also needed for the oxidation dams and the level of ground water pollution on site.</p>
Pre-closure conditions	Yes	CEM	Addressed as part of the EMPr (Appendix F)
Closure plan/EMPr to inform closure design	Yes	CEM	Addressed as part of the EMPr (Appendix F) and the closure plan (Appendix D).
Closure design and approval	No	Municipality to appoint registered Consulting Engineer and multi task team to manage the abattoir waste, the oxidation dams and the ground water impacts that have been caused.	See Appendix D for a closure plan, with an interface with the oxidation dams upgrade and a sustainable solution to manage abattoir waste and remedy the historical impacts on ground water.
Detailed design requirements (closure/remedial design, design of storm water management, leachate management, settlement/surface pondage), plan drawings, and long and short term stability.	No	Municipality to appoint registered Consulting Engineer	<p>It is not possible to do a detailed closure design and planning proposals for this site at this stage.</p> <p>The proponent needs to make provision for this in its IDP as well as the short to medium expenditure framework. The closure of this site is the responsibility of the Naledi Local Municipality.</p> <p>Closure of this site should be aligned with the upgrade of the oxidation dams as well as finding a sustainable solution for the abattoir waste.</p> <p>Hence the approach to do the final closure designs and planning when the project can be implemented. It is imperative that the NW DEDECT and the DWA sign off on these final designs.</p> <p>Refer to the EMPr in Appendix F and the closure plan in Appendix D.</p>
Alternative waste disposal	Not applicable	Municipality	An integrated and comprehensive

options – new landfill site			waste management strategy needs to be found, designed and implemented before this site can be permanently closed.
Alternative waste disposal options – transfer station	Not applicable	Municipality	References have been made in the relevant IWMPs about a possible transfer site once the Stella site has been closed and a regional site at Vryburg is operational.
Post-closure care and maintenance	Yes	CEM	Addressed as part of the EMPr (Appendix F) and Closure plan (Appendix D).
Post-closure hand-over documents	No	Municipality to appoint registered Consulting Engineer	Documents to be generated and handed over to the municipality for implementation.
Additional authorisations	Not applicable	Municipality to appoint independent EAP	No additional authorisation is identified during EIA. Some of the recommendations made in the Closure plan (Appendix D) will attract additional waste management, water use and environmental authorisations.
Rezoning application	No	Municipality	The site is zoned for agricultural purposes with municipal use and hence also water treatment and waste management activities listed as permissible uses.

### Site Location

The landfill site is located on Ptn 3 of Farm Zoutpansfontein 546-IN, while the adjacent abattoir waste land farming is located on the former and on RE 18/549 of the farm Biesjesbult 549-IN.

The Stella landfill and abattoir waste disposal site is located to the south west of the suburb of Rekgarathile and to the north west of Stella, within the Naledi Local Municipality and Dr Ruth Segomotsi Mompati District Municipality.

The landfill site is managed and operated by the Naledi Local Municipality.

It is adjacent to and to the north, east and south east of the Stella oxidation dams. Both are located 1,5 km south west of the centre of the town of Stella.

The area to the north, east and south is open veld and it is used for grazing.

### Zonation of the land

The land is zoned for agricultural purposes, but the permissible activities include municipal use that also includes the oxidation dam and waste disposal activities.

### Land ownership

The land belongs to the Naledi Local Municipality.

## Operating entity

The Naledi Local Municipality<sup>2</sup> is responsible for managing the abandoned facility. Please note that waste management within the Naledi Local Municipality jurisdictional area has not been assigned to the Dr Ruth Segomotsi Mompati District Municipality as is the case with other local municipalities.

## Waste site characteristics

According to the climatic water balance as per the Minimum Requirements, the domestic waste disposal site is classified to be a GCB- , however if one considers the abattoir waste as part of the waste stream, then the site must be classified as one with a positive potential for generation of leachate and as such would require an engineered leachate management system to be in place to prevent leachate from contaminating water resources. The disposal area where around 2,9 tons/day of waste is disposed of is about 12, 014m<sup>2</sup> in extent, while the larger area that includes the area where abattoir waste is being disposed of is 120, 622m<sup>2</sup>.

Waste disposal is uncontrolled with no access control or any management of waste deposited on the property. The site is not well managed with no formal method of operation. The waste site is not fenced, with no control of waste disposal activities, while no records of waste management activities are kept. The site has no facilities, nor equipment to operate and manage the site. No monitoring is being done. No evidence was found of any pollution or litter prevention as far as the waste disposal practices are concerned.

Around 2,9 tons of domestic waste is estimated to be disposed of at the facility on a daily basis<sup>3</sup>. The volume of abattoir waste disposed of is not known. Abattoir waste has been disposed of in trenches for more than 20 years. Abattoir waste is currently not being disposed of in the trenches as these became saturated. Solid and liquid waste is currently being disposed of on the surface of the land. A directive has been issued against the abattoir to have the site cleaned up, but the practice of surface disposal is continuing. Evidence was found of the following abattoir waste disposed of all over the site:

- Animal manure;
- Animal parts;
- Hooves and legs;
- Intestines; and
- Poorly incinerated animal waste.

It is impossible to establish what pollution the disposal of animal waste from the abattoir has caused or is causing, as raw sewage seepage from the oxidation dams has saturated the soil, leaving a black residue where the water evaporated.

The surface water smells offensive and is coloured black to brown. Community members and children are exposed to these pollution sources. People scavenge for edible parts. Flies and other pathogens also pose a health risk.

All the documented reports on waste management report only on the domestic component of the waste disposal at the site. No references are being made of the disposal of abattoir waste in the extended area to the north east and south west of the landfill site complex. This is in spite of a correspondence with the then Stella Municipality<sup>4</sup> to stop the burning of the abattoir waste at the landfill site and a directive<sup>5</sup> that was issued by the then NW DACERD in 2010 to clean and rehabilitate the site from disposed of animal waste.

The DACERD report (2010) listed the following observations:

- Effluent is disposed off in the open veld;
- Abattoir waste is disposed off on the surface of the land in a haphazard an uncontrolled way;
- Blood is being disposed of in open trenches.

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<sup>2</sup> Note, the DEA and DEDECT readiness report dated 04/02/2010 states incorrectly that the landfill is managed by the Dr. Ruth Segomotsi Mompati District Municipality.

<sup>3</sup> It is generally believed that the abattoir waste is not included in this estimation as the IWMP is silent on the nature and extent of the abattoir waste.

<sup>4</sup> Letter dated the 13<sup>th</sup> of March, 1997.

<sup>5</sup> Reference 65/2009WR dated 20/05/2010

The 2010 Readiness Report of DEA for the Naledi Local Municipality reports the following observations made at the site:

- No monitoring was being done;
- Strategic documents such as the IWMP and IDPs make scant reference to the waste management challenges at Stella apart from evidence of a budget to close the Stella site and to
- Construct a transfer station.

### **Closure activities**

Note: read with the EMPr and the closure plan.

The waste site needs to be lawfully decommissioned closed and rehabilitated. An integrated, and holistic but phased waste management solution needs to be found for the site at Stella that amongst others include:

- The immediate cleaning up of the waste disposed of on the surface of the land along the access road;
- Commission a ground water quality study to gain an understanding of water quality as well as the preferential flow of ground water;
- Consolidation, closure, compaction and capping of the waste body disposed of to the oxidation dams that conforms to the various closure requirements;
- The design, development and construction of an interim waste management landfill cell that conforms to the various requirements for the interim disposal of domestics waste;
- Management of the waste facility in line with all the applicable requirements;
- Finding an integrated solution for a sustainable waste management of the abattoir waste including the incinerator<sup>6</sup>;
- The upgrading of the oxidation dam system adjacent to the landfill;
- Finding a long term solution for waste management at Stella that can include either a transfer station or a new facility;
- Rehabilitation of the known but un-quantified groundwater pollution. (See Appendix D).

### **Waste recyclers**

Very small volumes of waste are collected by children and some adults. The reported income generated is also very low. Enhancing waste recycling at Stella has potential for job creation.

## **2. FEASIBLE AND REASONABLE ALTERNATIVES**

**“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—**

- (a) the property on which or location where it is proposed to undertake the activity;**
- (b) the type of activity to be undertaken;**
- (c) the design or layout of the activity;**
- (d) the technology to be used in the activity;**
- (e) the operational aspects of the activity; and**
- (f) the option of not implementing the activity.**

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific

<sup>6</sup> The general expectation is that the ‘incinerator’ at the abattoir is also not licensed.

instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

**Description of alternatives considered in this application:**

The waste site needs to be lawfully decommissioned closed and rehabilitated.

No locatiional alternatives for closure are possible.

A number of alternatives can be considered for the post closure waste management solution at Stella that is outside of the scope of this application. This is recommended in Addedum D.

The no-go alternative is not a feasible alternative as the public is exposed to hazards from the current practises at the site, community complaints are rife and that the reported high nitrate levels of ground water, a water source for the town may be attributed to the poor performance of the oxidation dam and the landfill site.

The preferred alternative is to close the facility *in situ*.

Paragraphs 3 – 13 below should be completed for each alternative.

**3. ACTIVITY POSITION**

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites, if applicible. S: 26°33'28.0"

E: 24°50'49.7"

**Alternative**

**Latitude (S):                      Longitude (E):**

Alternative S1<sup>7</sup> (preferred or only site alternative)

26°	33'28.0"	24°	50'49.7"
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Alternative S2 (if any) **Not Applicable**

o	'	o	'
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Alternative S3 (if any) **Not Applicable**

o	'	o	'
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**In the case of linear activities:**

**Alternative:** **Not Applicable**

**Latitude (S):                      Longitude (E):**

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<sup>7</sup> "Alternative S.." refer to site alternatives.

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

o	'	o	'
o	'	o	'
o	'	o	'

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

o	'	o	'
o	'	o	'
o	'	o	'

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

o	'	o	'
o	'	o	'
o	'	o	'

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

#### 4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

The disposal area where around 2,9 tons/day of waste is disposed of is about 12, 014m<sup>2</sup> in extent, while the larger area that includes the area where abattoir waste is being disposed of is 120, 622m<sup>2</sup>.

**Alternative:** : Not Applicable

**Size of the activity:**

Alternative A1<sup>8</sup> (preferred activity alternative)

12 014 m<sup>2</sup> and  
120 622m<sup>2</sup><sup>9</sup>

Alternative A2 (if any)

m<sup>2</sup>

Alternative A3 (if any)

m<sup>2</sup>

**or, for linear activities:**

\_\_\_\_\_

<sup>8</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

<sup>9</sup> See the explanation in the box above.



Alternative: : **Not Applicable**

Length of the activity:

Alternative A1 (preferred activity alternative)

M

Alternative A2 (if any)

M

Alternative A3 (if any)

M

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur): : **Not Applicable**

Size of the site/servitude:

Alternative:

Alternative A1 (preferred activity alternative)

m<sup>2</sup>

Alternative A2 (if any)

m<sup>2</sup>

Alternative A3 (if any)

m<sup>2</sup>

**5. SITE ACCESS**

Does ready access to the site exist?

YES <b>X</b>	NO
m	

If NO, what is the distance over which a new access road will be built : **Not Applicable**

Describe the type of access road planned: : **Not Applicable**

**Not Applicable**

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

: **Not Applicable**

**6. SITE OR ROUTE PLAN:**

See Maps S1, S2 and S4 in Appendix A.

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site; See Map S2 in Appendix A
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites; See Map S4 in Appendix A
- 6.4 the exact position of each element of the application as well as any other structures on the site See Map S1 in Appendix A
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure; See Map S1 in Appendix A
- 6.6 all trees and shrubs taller than 1.8 metres; See Map S1 in Appendix A
- 6.7 walls and fencing including details of the height and construction material; See Map S1 in Appendix A
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers; See Map S1 in Appendix A
  - the 1:100 year flood line (where available or where it is required by DWA); See Map S1 in Appendix A
  - ridges; See Map S1 in Appendix A
  - cultural and historical features; See Map S1 in Appendix A
  - areas with indigenous vegetation (even if it is degraded or invested with alien species); See Map S1 in Appendix A
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and See Map S1 in Appendix A
- 6.11 the positions from where photographs of the site were taken. See Map S1 in Appendix A

## 7. SITE PHOTOGRAPHS

*See Appendix B.*

*Please note the evidence of ground water pollution and the disposal of abattoir waste on the surface of the land.*

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

## 8. FACILITY ILLUSTRATION

Two illustrations are provided:

- S5 indicates the current status of waste disposal (*See Appendix C*).
- S6 indicates the activity post closure (*See Appendix C*), See also the requisite diagrammes in the closure plan (*Appendix D*).

**A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.**

## 9. ACTIVITY MOTIVATION

### 9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

To be determined

What is the expected yearly income that will be generated by or as a result of the activity?

To be determined

Will the activity contribute to service infrastructure?

YES	NO <b>X</b>
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Is the activity a public amenity?

YES	NO <b>X</b>
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How many new employment opportunities will be created in the development phase of the activity?

To be determined

What is the expected value of the employment opportunities during the development phase?

Not determined

What percentage of this will accrue to previously disadvantaged individuals?

Not determined

How many permanent new employment opportunities will be created during the operational phase of the activity?

None

What is the expected current value of the employment opportunities during the first 10 years?

Not determined

What percentage of this will accrue to previously disadvantaged individuals?

Not determined

**9(b) Need and desirability of the activity**

**Motivate and explain the need and desirability of the activity (including demand for the activity):**

The need for the project is vested in the following arguments:

- The landfill site has been operated unlawfully in terms of a NEM:WA and the NWA. Closure of the site with an alternative solution for waste management is desirable.
- The locally important aquifer that used to supply water to Stella and Rekgarathile with potable water has elevated nitrate levels that exceeds the maximum allowable concentration (Class 2) and the water is not suitable for domestic use without treatment (Nelson C.A. 2007, Geohydrological investigation for the Stella Cemetery). The report states that numerous sources of pollution exist around 1.1 km from the well, such as:
  - The existing cemetery;
  - The solid waste site;
  - The oxidation ponds; and the
  - Abattoir waste trenches.
- Arresting the pollution sources at the waste site, the abattoir trenches and oxidation ponds are therefore imperative.

The desirability of the project is vested in the need to:

- Manage waste more responsibly and lawfully within the Naledi Local Municipality.
- Reduce the risks associated with ground water impacts.
- Reduce or remove the health risk exposures of the community living close to the site.
- To bring environmental justice to a marginalised community that is exposed to the health and other quality of life impacts caused by the unlawful disposal of waste on their doorstep.

<b>NEED:</b>			
1.	Was the relevant provincial planning department involved in the application?	YES <b>X</b>	NO
2.	Does the proposed land use fall within the relevant provincial planning framework?	YES <b>X</b> <sup>10</sup>	NO
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:		
	Not Applicable		

<b>DESIRABILITY:</b>			
1.	Does the proposed land use / development fit the surrounding area?	YES <b>X</b>	NO
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES <b>X</b>	NO
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES <b>X</b>	NO
4.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
5.	Will the proposed land use / development impact on the sense of place?	YES <sup>11</sup> <b>X</b>	NO
6.	Will the proposed land use / development set a precedent?	YES	NO <b>X</b>
7.	Will any person's rights be affected by the proposed land use / development?	YES	NO <b>X</b>
8.	Will the proposed land use / development compromise the "urban edge"?	YES	NO <b>X</b>
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		

<b>BENEFITS:</b>			
1.	Will the land use / development have any benefits for society in general?	YES <b>X</b>	NO
2.	Explain: Closure of the existing waste disposal site (for both the domestic and abattoir waste, as well as for the treatment of sewage) and finding a waste management solution that is both lawful and for arresting ground water pollution will greatly improve the quality of life the people living adjacent to the site.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES <b>X</b>	NO
4.	Explain: Closure of the existing waste disposal site (for both the domestic and abattoir waste, as well as for the treatment of sewage) and finding a waste management solution that is both lawful and for arresting ground water pollution will greatly improve the quality of life the people living adjacent to the site.		

<sup>10</sup> The SDF dated 2004 of the North West Province was consulted.

<sup>11</sup> The impact will be beneficial.

## 10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

<b>Title of legislation, policy or guideline:</b>	<b>Administering authority:</b>	<b>Date:</b>
South Africa's Constitution, 1996 (Act 108 of 1996), including the Bill of Rights (Chapter 2, Section 24)	National Government	1996
National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA), including the NEMA Amendment Act, 2008 (No. 62 of 2008)	National Government, and National Department of Environmental Affairs	1998
NEMA EIA Regulations, 2010 (Government Notice Nos. 543, 544, 545 and 546)	North West Department of Economic Development, Conservation and Tourism	2010
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA) 2008	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2008
List of waste management activities that have, or are likely to have a detrimental effect on the environment (GN. 921), 2013	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2013
Waste Classification and Waste Management Regulations (GN 634), 2013	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2013
National Norms and Standards for Disposal of Waste to Landfill (GN 636), 2013	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2013
National Norms and Standards for the Assessment of Waste for Landfill Disposal (GN 635), 2013	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2013
National Norms and Standards for the Storage of Waste (GN 926), 2013	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2013
Waste Information Regulations (GN 625), 2012	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2012
National Waste Management Strategy, 2010	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2010
Minimum requirements for waste disposal by landfill, 1998	Department of Water Affairs	1998
Minimum requirements for water monitoring at waste management facilities	Department of Water Affairs	1998
National Environment Management: Air Quality Act,	National Department of Environmental	2004

<b>Title of legislation, policy or guideline:</b>	<b>Administering authority:</b>	<b>Date:</b>
2004 (Act No. 39 of 2004) (NEM: AQA)	Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	
National Ambient Air Quality Standards in Terms of Section 9(1)(a) and (b) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (Government Notice No. 1210, 24 December 2009)	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2009
The National Heritage Resources Act, 1999 (Act No 25 of 1999) as amended, particularly Chapter II, Section 38	South African Heritage Resource Agency	1999
The National Water Act, 1998 (Act No. 36 of 1998)	Department of Water Affairs	1998
National Water Resource Strategy, 2013	Department of Water Affairs	2013
Water Services Act, 1997 (Act No. 108 of 1997)	At local authority level	1997
Occupational Health & Safety Act, 1993 (Act No. 85 of 1993)	Department of Labour	1993
Health Act, 1977 (Act 63 of 1977)	Department of Health	1977
Municipal Structures Act, 1998 (Act 117 of 1998)	Local Municipality	1998
Municipal Systems Act, 2000 (Act 32 of 2000)	Local Municipality	2000
North West Provincial Spatial Development Framework	NW Province	2008
Dr. Ruth Segomotsi Mompati District Municipality IWMP 2004	District Municipality	2004
Dr. Ruth Segomotsi Mompati District Municipality IDP 2012-2017	District Municipality	2012
Dr. Ruth Segomotsi Mompati District Municipality Solid Waste Planning for Naledi Municipality	District Municipality	2012
Naledi Local Municipality LUMS	Local Municipality	2005
Naledi Local Municipality SDF	Local Municipality	2013
Naledi Local Municipality IWMP	Local Municipality	2011
Meet r Inspectors Abattoir Hygiene (See Module 4 the section in waste)	National Department of Agriculture	2007
Guidelines for handling treatment and disposal of abattoir waste	DWA	2001
Guideline manual for the management of abattoirs and other waste of animal origin	Gauteng Provincial Government, Department of Agriculture and Rural Development	2009
Water and waste water management in the red meat industry.	Water Research Commission Report TT48/89	1989

## 11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

### 11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO <sup>12</sup>
	X
m <sup>3</sup>	

If yes, what estimated quantity will be produced per month?

\_\_\_\_\_

<sup>12</sup> The activity itself (landfill site) will not produce solid waste, however, the application is for the closure of a landfill site which received solid waste during its operational phase.

How will the construction solid waste be disposed of (describe)?

Where will the construction solid waste be disposed of (describe)? **Not applicable**

**Not applicable**

Will the activity produce solid waste during its operational phase?

YES	NO <b>X</b>
-----	----------------

If yes, what estimated quantity will be produced per month?

m<sup>3</sup>

How will the solid waste be disposed of (describe)?

**Not applicable**

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

**Not applicable**

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

YES	NO <b>X</b>
-----	----------------

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	NO <b>X</b>
-----	----------------

If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

### 11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO <b>X</b>
-----	----------------

If yes, what estimated quantity will be produced per month?

m<sup>3</sup>

Will the activity produce any effluent that will be treated and/or disposed of on site?

Yes	NO <b>X</b>
-----	----------------

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO <b>X</b>
-----	----------------

If yes, provide the particulars of the facility:

Facility name:

Contact person:

Postal address:

Postal code:

Telephone:

E-mail:


Cell:

Fax:

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

**Not applicable**

### 11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES <b>X</b>	NO
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If yes, is it controlled by any legislation of any sphere of government?

YES	NO <b>X</b>
-----	----------------



If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

The following emissions are expected at the landfill site:

- Undetermined potential for landfill gas (mainly methane and carbon dioxide) to be generated, the site is small with small volumes of domestic waste been disposed of, the likelihood for the formation of methane is low.
- Dust emissions from the movement, deposition and covering of waste on-site, as well as dust generated from the surface of the landfill due to wind and erosion;
- Vehicle exhausts emissions.

**11(d) Generation of noise**

Will the activity generate noise?

YES <b>X</b>	NO
-----------------	----

If yes, is it controlled by any legislation of any sphere of government?

YES	NO <b>X</b>
-----	----------------

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

Noise may be generated by vehicles and earth-moving activities during the decommissioning and closure phase of the proposed activity.  
Noise levels are not expected to be significant in relation to the existing activities on site and in its surroundings.  
Noise will be limited to normal working hours.

**12. WATER USE**

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box (es)

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water <b>X</b> <sup>13</sup>
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

litres	
YES	NO <b>X</b>

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

**13. ENERGY EFFICIENCY**

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

No energy usage on-site except for the hydrocarbon use during site works.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

<sup>13</sup> Please note that some of the solutions recommended in the closure plan (Appendix D) may attract a water use license.



No energy usage on-site except for the hydrocarbon use during site works.

**Section B: SITE/area/PROPERTY description**

The landfill site is located on Ptn 3 of Farm Zoutpansfontein 546 -IN, while the adjacent abattoir waste landfarming is located on the former and on RE 18/549 of the farm Biesjesbult 549-IN.

The Stella landfill and waste disposal site is located to the west of the suburb of Rekgarathile and to the south west of Stella, within the Naledi Local Municipality and Dr Ruth Segomotsi Mompati District Municipality.

It is adjacent to and to the north, east and south east of the Stella oxidation dam system . Both are located 1,5 km south west of the centre of the town of Stella.

The area to the north, east and south is open veld and it is used for grazing.

**Important notes:**

- 1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.   
(e.g. A):

- 2. Paragraphs 1 - 6 below must be completed for each alternative.

- 3. Has a specialist been consulted to assist with the completion of this section?

YES	NO
X	

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed:

The waste management expert, Mr SK Kalule from USK consulting has generated a Closure plan with suggestions for an integrated approach to the waste management at Stella. See Appendix D

The declaration of interest is also filed in Appendix D.

All specialist reports must be contained in Appendix D.

Property description/physical address:

The landfill site is located on Ptn 3 of Farm Zoutpansfontein 546 -IN, while the adjacent abattoir waste landfarming is located on the former and on RE 18/549 of the farm Biesjesbult 549-IN.

Both properties belong to the Naledi Local Municipality.

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

Not applicable

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

The land is zoned for agricultural purposes, but the permissible activities include municipal use that also includes the oxidation dam and waste disposal activities.

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to this application.

Is a change of land-use or a consent use application required?

YES	NO <b>X</b>
YES	NO <b>X</b>

Must a building plan be submitted to the local authority?

Locality map:

**An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:**

- an indication of the project site position as well as the positions of the alternative sites, if any; (See Map S7 and S8 in Appendix CA)
- road access from all major roads in the area; (See Map S7 and S8 in Appendix A)
- road names or numbers of all major roads as well as the roads that provide access to the site(s); (See Map S7 S8 in Appendix A)
- all roads within a 1km radius of the site or alternative sites; and (See Map S 7 and S8 in Appendix A)
- a north arrow; (See Map S7 and S8 in Appendix A)
- a legend; and (See Map S7 and S8 in Appendix A)
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection) (See Map S7 and S8 in Appendix A).

## 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

### Alternative S1:

Flat	1:50 – 1:20 <b>X</b>	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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### Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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### Alternative S3 (if any):

Flat	1:50 1:20	–	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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## 2. LOCATION IN LANDSCAPE

The Stella landfill and waste disposal site is located to the west of the suburb of Rekgarathile and to the south west of Stella, within the Naledi Local Municipality and Dr Ruth Segomotsi Mompati District Municipality.

It is adjacent to and to the north, east and south east of the Stella oxidation dam system. Both are located 1,5 km south west of the centre of the town of Stella.

The area to the north, east and south is open veld and it is used for grazing.

The site and the surrounding area is classified by SANBI as: CBA 2<sup>14</sup> area.

These are landscapes that are approaching but have not passed their limits of acceptable change.

This means that it will be difficult to find an alternative landfill site on the property of the Naledi Local Municipality as the entire property is classified CBA 2 by SANBI.

According to North West SDF the surroundings are classified as CBA T2 in a wetland buffer. The biodiversity component refers to patches of Stella sparse woodland as vulnerable.

The aquifer to the south-west of Stella town has moderately high yields<sup>15</sup> with high nitrate levels that render the water unfit for human consumption. The town is dependent on ground water and get its water from 9 boreholes of the Middelkop aquifer and 2 boreholes in town. The town is not abstracting water from the boreholes to the south west of the town due to the nitrate levels. The nitrate levels have been attributed to the oxidation ponds and waste site further to the west.

### Indicate the landform(s) that best describes the site:

NB: Indicate by highlighting/ticking

#### 2.1 Ridgeline

#### 2.2 Plateau Flat

#### 2.3 Side slope of hill/mountain

#### 2.4 Closed valley

#### 2.5 Open valley

<sup>14</sup> This means:

- Near-natural landscapes:
- Ecosystems and species largely intact and undisturbed.
- Areas with intermediate irreplaceability or some flexibility in terms of area required to meet biodiversity targets. There are options for loss of some components of biodiversity in these landscapes without compromising our ability to achieve targets.

<sup>15</sup> Tessema, A and Nzotta, U. (undated) Multi-data integration approach in ground water resource potential mapping: a case study from the North-West Province, South Africa. Council for Geoscience.

## 2.6 Plain X

### 2.7 Undulating plain / low hills

### 2.8 Dune

### 2.9 Seafront

## 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

The waste site, the oxidation dams and the abattoir waste disposal site are located on the Allanridge Formation of the Ventersdorp Supergroup. The concealed limit of the Kraaipan Group is also close to these sites. Average to good ground water yields are exploitable on the contact zones between the Kraaipan and Allanridge formations as well as in the gneisses of the Ventersdorp Lava Group.

The soils are silty sand and silty clay type material. The clay soils explains the fact that the liquid effluent from the abattoir that were disposed of in trenches did not soak away as well as the wet and saturated soils around the waste site and the oxidation dam.

The presence of a clay brick quarry that supplies Northern Cape Bricks on the farm Biesiesfontein bear testament to the clay content of soils. Material to cover and line facilities is at hand.

A number of boreholes are located to the north east of the waste site and the oxidation dams and south west of the town of Stella. The municipality stopped to pump water from these boreholes due to the high nitrate levels. These boreholes may in future need to be used to augment water supplies.

The ground water level is between 6m and 37m in some of the boreholes, while others are between 45 and 66m deep. The ground water drainage is from the NW to the SE. The proposed locations of monitoring boreholes are indicated on Map S1 in Appendix A as well as the requisite maps in the closure plan (Appendix D). It is expected that the pumping of groundwater impacts on the preferential flow. A geohydrological study of the area is required to model the underground water regime before detailed closure designs are made.

This groundwater source is contaminated with high nitrate levels. The municipality is not pumping water from these wells due to the nitrate level. The poor practices at the oxidation dams, waste site and the abattoir disposal site is quoted as sources of the nitrates, while agricultural practices may also have contributed in the past.

The municipality is pumping water from the Middelkop aquifer which has 9 boreholes and the 2 boreholes in town.

**Is the site(s) located on any of the following (tick the appropriate boxes)?**

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	YES X <sup>16</sup>	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO X	YES	NO	YES	NO

<sup>16</sup> Please note that the boreholes in the area are more than 5m deep. The area surrounding the waste site and the oxidation dam where the abattoir waste is being disposed of is saturated with polluted water which surfaces at places.

Seasonally wet soils (often close to water bodies)	YES X	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO X	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO X	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES X	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO X	YES	NO	YES	NO
An area sensitive to erosion	YES	NO X	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

#### 4. GROUNDCOVER

Indicate the types of groundcover present on the site:

The Vegetation Unit and Topographical Features number SVk 2 Stella Bushveld with open tree and shrub layers and trees.

The site and the surrounding area is classified by SANBI as: CBA 2.<sup>17</sup>

These are landscapes that are approaching but have not passed their limits of acceptable change.

This means that it will be difficult to find an alternative landfill site on the property of the Naledi Local Municipality as the entire property is classified CBA 2 by SANBI.

According to North West SDF the surroundings are classified as CBA T2 in a wetland buffer. The biodiversity component refers to patches of Stella sparse woodland as vulnerable.

These are landscapes that are approaching but have not passed their limits of acceptable change.

**The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s). See Fig S1 in Appendix A.**

<sup>17</sup> This means:

- Near-natural landscapes:
- Ecosystems and species largely intact and undisturbed.
- Areas with intermediate irreplaceability or some flexibility in terms of area required to meet biodiversity targets. There are options for loss of some components of biodiversity in these landscapes without compromising our ability to achieve targets.
- These are landscapes that are approaching but have not passed their limits of acceptable change.

The surrounding area is classified by SANBI as: CBA 2.

These are landscapes that are approaching but have not passed their limits of acceptable change.

This means that it will be difficult to find an alternative landfill site on the property of the Naledi Local Municipality as the entire property is classified CBA 2 by SANBI.

According to North West SDF the surroundings are classified as CBA T2 in a wetland buffer. The biodiversity component refers to patches of Stella sparse woodland as vulnerable.

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil <b>X</b>

**If any of the boxes marked with an “E “is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.**

## 5. LAND USE CHARACTER OF SURROUNDING AREA

*Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:*

The Stella landfill and abattoir waste disposal site is located to the west of the suburb of Rekgarathile and to the south west of Stella, within the Naledi Local Municipality and Dr Ruth Segomotsi Mompoti District Municipality.

It is adjacent to and to the north, east and south east of the Stella oxidation dam system. Both are located 1,5 km south west of the centre of the town of Stella.

The area to the north, east and south is open veld and it is used for grazing.

The surrounding area is classified by SANBI as: CBA 2.

These are landscapes that are approaching but have not passed their limits of acceptable change.

This means that it will be difficult to find an alternative landfill site on the property of the Naledi Local Municipality as the entire property is classified CBA 2 by SANBI.

According to North West SDF the surroundings are classified as CBA T2 in a wetland buffer. The biodiversity component refers to patches of Stella sparse woodland as vulnerable.

The locally important aquifer that occurs on the contact zone between the Kraaipan and Allanridge formation is severely polluted with nitrate levels that render the ground water unfit for human consumption. The Stella and Rekgarathile communities depend on ground water.

***NB: Indicate by highlighting/***

*5.1 Natural area*

*5.2 Low density residential*

*5.3 Medium density residential*

*5.5 Informal residential<sup>A</sup>*

- 5.6 Retail commercial & warehousing
- 5.7 Light industrial
- 5.8 Medium industrial <sup>AN</sup>
- 5.9 Heavy industrial <sup>AN</sup>
- 5.10 Power station
- 5.11 Office/consulting room
- 5.12 Military or police base/station/compound
- 5.13 Spoil heap or slimes dam<sup>A</sup>
- 5.14 Quarry, sand or borrow pit
- 5.15 Dam or reservoir
- 5.16 Hospital/medical centre
- 5.17 School
- 5.18 Tertiary education facility
- 5.19 Church
- 5.20 Old age home
- 5.21 Sewage treatment plant<sup>A</sup> **X<sup>18</sup>**
- 5.22 Train station or shunting yard<sup>N</sup>
- 5.23 Railway line<sup>N</sup> **X**
- 5.24 Major road (4 lanes or more)<sup>N</sup>
- 5.25 Airport<sup>N</sup>
- 5.26 Harbour
- 5.27 Sport facilities
- 5.28 Golf course
- 5.29 Polo fields
- 5.30 Filling station<sup>H</sup>
- 5.31 Landfill or waste treatment site
- 5.32 Plantation

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<sup>18</sup> This is not a plant it is a dysfunctional oxidation system.

5.33 Agriculture **X**

5.34 River, stream or wetland **X**

5.35 Nature conservation area

5.36 Mountain, koppie or ridge

5.37 Museum

5.38 Historical building

5.39 Protected Area

5.40 Graveyard

5.41 Archaeological site

5.42 Other land uses (specify)

**If any of the features marked with an "N" are highlighted or ticked, how this impact will / be impacted upon by the proposed activity?**

Not Applicable..

**If any of the features marked with an "An" are highlighted or ticked, how will this impact / be impacted upon by the proposed activity?**

The operation of the oxidation pond is compromised by windblown plastics and waste. The oxidation dams are not functional and a significant source of ground water pollution and foul odours. It is absolutely imperative that an integrated and holistic approach is required to solve the pollution and problems associated with:

- The oxidation dams;
- The solid waste disposal practises and facilities at Stella;
- The management of waste generated by the abattoir from the 'incinerator' to the disposal of abattoir waste;
- Dealing with the significant pollution of the locally important aquifer.

If YES, specify and explain:

If YES, specify:

**Not Applicable**

**If any of the features marked with an "H" are highlighted or ticked, how will this impact / be impacted upon by the proposed activity.**

If YES, specify and explain: **Not Applicable**

If YES, specify: **Not Applicable**

## **6. CULTURAL/HISTORICAL FEATURES**



Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including

YES	NO <sup>19</sup>
	X

Archaeological or paleontological sites, on or close (within 20m) to the site?

No <sup>20</sup>	X
------------------	---

If YES, explain:

**Not Applicable**

If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist:

**Not Applicable**

Will any building or structure older than 60 years be affected in any way?

YES	NO
	X

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
	X

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

In terms of section 38 of the National Heritage Resources Act (25 of 1999), the activities related to the closure of the existing waste disposal site at Stella exceeds 5000m<sup>2</sup> in extent. The activity has been registered with SAHRA.

### SECTION C: PUBLIC PARTICIPATION

The entire public participation process, outcomes and evidence are recorded in Appendix G1.

#### 1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

<sup>19</sup> According to the South African Heritage Resource Information System (SAHRIS) there are no declared archaeological or paleontological sites with 20 metres from the site.

<sup>20</sup> In terms of section 38 of the National Heritage Resources Act (25 of 1999), the activities related to the closure of the existing waste disposal site at Taung exceeds 5000m<sup>2</sup> in extent.

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
  - (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in sub-regulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

## 2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and

- (b) state—
- (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
  - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
  - (iii) the nature and location of the activity to which the application relates;
  - (iv) where further information on the application or activity can be obtained; and
  - (iv) the manner in which and the person to whom representations in respect of the application may be made
  - (v)

### **3. PLACEMENT OF ADVERTISEMENTS AND NOTICES**

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

### **4. DETERMINATION OF APPROPRIATE MEASURES**

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

### **5. COMMENTS AND RESPONSE REPORT**

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

### **6. AUTHORITY PARTICIPATION**

**Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.**

*Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.*

*List of authorities informed:*

- North-West Department of Economic Development, Environment, Conservation and Tourism (DEDECT);
- NW Department of Local Government and Traditional Affairs
- Department of Water Affairs (National and Regional Offices);
- Department of Agriculture, Forestry and Fisheries (DAFF);
- The South African Heritage Resource Authority (SAHRA);
- Dr. Ruth Segomotsi Mompati District Municipality
- Naledi Local Municipality;

See the list of I&AP's attached to **Appendix G1**.

*List of authorities from whom comments have been received:*

- *NW Department of Local Government and Traditional Affairs*
- *Department of Water Affairs (National and Regional Offices);*
- *Department of Agriculture, Forestry and Fisheries (DAFF); and*
- *Dr. Ruth Segomotsi Mompati District Municipality*

## 7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable.

*Has any comment been received from stakeholders?*

YES	NO
X	

*If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):*

Verbal comments were received from DAFF are:

- *The DAFF wishes to be informed of the process and detail and that it will only comment on an application if land zoned for, or used as agricultural land is rezoned or used for any purpose other than agriculture.*
- *The DAFF also recommended that the site should not be rezoned from agricultural to municipal if the post closure land use reverts back to agriculture.*

*The NW Department of Local Government and Traditional Affairs*

- *Members of the department requested via email to be registered for the project.*

*The Department of Water Affairs*

- *Members of the Head Office and the relevant regional office provided specifications for closing GCB waste sites.*

*Dr. Ruth Segomotsi Mompati District Municipality*

- *The officials confirmed that this application is in line with DM's IWMP.*

## **SECTION D: IMPACT ASSESSMENT**

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

### **1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES**

List the main issues raised by interested and affected parties.

*See Appendix E.*

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Appendix E):

*See Appendix E.*

### **2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES**

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

## Alternative - A1 (preferred alternative) – Capping the landfill site with clay and topsoil

See A2.

## Alternative A2 – Integrated approach (Closure of the landfill facility, dysfunctional oxidation ponds and abattoir waste disposal area) – not within the scope of the Licence Application

The direct and indirect impacts associated with the closure of the landfill facility only (Alternative A1) will be similar compared to that of the Alternative A2 (closure of entire facility). Additionally, Alternative 2 does not fall within the scope of BA application. Therefore, only the direct and indirect impacts associated with Alternative A1 will be discussed below. However, a comparative analysis of these two alternatives is provided to show that an integrated approach will be the favourable option in terms of long term cumulative environmental risk exposure.

### ***Direct impacts:***

- The provision and operation of on-site staff facilities and activities may have negative impacts with a medium significance on soil, water, habitat transformation, and social impacts, whilst the aforementioned may have negative impacts with a low significance on air pollution, sense of place (due to safety aspects and nuisance), infrastructural impacts and use of resources. These impacts are, however, expected to be of a short duration (less than 30 days) and restricted to a small part of the site.
- The management of vehicles, machinery & equipment (especially due to the use of hydrocarbons) may have negative impacts of a high significance on surface water pollution, whilst it may have negative impacts of a medium significance on soil pollution, and community safety impacts (due to the operation of machinery and equipment during the closure phase).
- Negative impacts related to activities during earthworks and levelling of the site are expected to be low;
- Management of existing waste (historical disposal on landfill) - i.e. moving scattered waste to dedicated areas of the landfill site, filling trenches etc. is expected to have positive impacts on the potential for future surface water pollution (since the waste will be concentrated). Short-term negative impacts (of a low significance) are expected as it relates to soil and air pollution.
- The capping and closing of cells, revegetation of the landfill site and removal of alien and invasive vegetation are expected to have positive impacts on the land-use potential and it is expected that the potential for surface water, groundwater and air pollution will be significantly reduced.
- A concern regarding the capping of cells is the use of clay/impervious material and topsoil, which may be a limited and expensive resource in the area.

- The establishment of infrastructure for the management of storm water and the installation of monitoring infrastructure is expected to have long-term positive impacts on the surrounding environment.
- Prevention of the disposal of waste on the closed landfill site will have net positive impacts on the surrounding environment.
- The closure of the landfill site will have negative socio-economic impacts to reclaimers. The municipality needs to consider relocation/other alternatives to accommodate the reclaimers.
- Establishment and active management and maintenance of the end-land use will have a positive impact on the land-use potential of the site.
- **Indirect impacts:**
- The authorisation of the landfill site will have the indirect positive impact, which will allow the municipality to apply for funding (from MISA or the DEA for example) to rehabilitate and actively manage the waste disposal site

**Cumulative impacts:**

The table below illustrates a comparative analysis of the cumulative impacts associated with Alternative A1 and A2. Alternative A1 involves the capping and closure of the landfill facility only, whilst the Alternative A2 includes an integrated approach where the landfill site together with the oxidation ponds and the abattoir waste disposal area will be rehabilitated and closed. It is clear from the analysis that the long-term cumulative impacts associated with only closing the landfill facility will be much more severe than the integrated approach. Therefore, an integrated approach will ultimately reduce long-term environmental and social risk exposures and it is strongly recommended that the entire facility including the landfill site together with the oxidation ponds and the abattoir waste disposal area should be closed.

**Strategic impact identification for two scenarios at the Stella landfill site**

Closure of landfill facility only	Closure of the entire site (integrated approach to manage the cumulative impacts caused by waste disposal and sewage treatment)
<b>Ground water</b>	
Description of resource:	
<ul style="list-style-type: none"> <li>• Very shallow ground water table (&lt;3m) and the clayey soils are saturated with polluted water.</li> <li>• The aquifer to the north of the waste site and oxidation dam has high nitrate levels that are attributed to several pollution sources including waste disposal, disposal of abattoir waste and the dysfunctional oxidation ponds.</li> </ul>	

<p>Continuous contamination of ground water from abattoir waste:</p> <ul style="list-style-type: none"> <li>• Increased nitrate concentrations</li> <li>• Increased salinity and CODs.</li> </ul>	<p>Intermediate impacts on ground water until all pollution sources (abattoir waste disposal, oxidation ponds) have been closed and capped.</p>
<p>Cumulative impact on surrounding aquifer (in addition to grave yard) - increased nitrate concentrations.</p>	<p>Long term reduction in groundwater contamination.</p>
<p>The cumulative impacts on ground water resources pose significant threats to potable water supply to the surrounding community.</p>	<p>It is not clear whether arresting the suspected pollution sources will impact positively on water quality for domestic purposes in the short to medium term. A detailed geo-hydrological study is required to understand the pollution source and resource dynamics.</p>
<p>Closure of the active landfill facility only, will result in a slight decrease in ground water contamination. However, the reduction will be minimal compared to the contamination arising from the entire facility.</p>	<p>An integrated approach to deal with the domestic waste, abattoir waste and the dysfunctional oxidation pond is imperative to address the cumulative impact on ground water quality and offensive smells that affect the community.</p>
<b>Surface water (storm water)</b>	
<p>Description of resource:</p> <ul style="list-style-type: none"> <li>• Surface area of the site and surrounding areas is flat with minimal storm water flow. However, the soil on the site has a very high clay content which may result in the ponding of runoff water during rainfall events. The ponding of water is amplified by a very flat surface area.</li> </ul>	
<p>Decanting of waste water from oxidation ponds may result in the continuous contamination of surface water runoff.</p>	<p>Removal of pollution sources and free drainage of surface water will significantly improve the quality of surface water runoff.</p>
<p>Ponding of runoff water during rainfall events may cause surface and ground water pollution.</p>	<p>Removal of pollution sources and free drainage of surface water will significantly improve the quality of surface water runoff.</p>
<p>Decrease in runoff water pollution from the active landfill facility.</p>	<p>Removal of pollution sources and free drainage of surface water will significantly improve the quality of surface water runoff.</p>
<b>Soil</b>	
<p>Description of resource:</p> <ul style="list-style-type: none"> <li>• Seasonally wet soil</li> <li>• The soils on site has a high clay content</li> </ul>	
<p>Abattoir waste, including blood, will continuously contaminate soil, which will result in the potential sterilisation of soil.</p>	<p>Finding an acceptable waste disposal strategy and the rehabilitation and remediation of the entire site will eliminate sources of pollution and drastically reduce the potential for further soil contamination.</p>



Extension of the footprint may potentially sterilise soil in the surrounding areas.	Shaping of the site and the implementation of a sound storm water drainage system will reduce the potential for surface erosion.
Poor storm water management will cause surface erosion.	Re-vegetation of the site will increase soil stability, which will reduce the potential for surface erosion.
	Soil disturbance during closure may result in minor soil erosion problems.
<b>Air</b>	
Dust emissions will continue as a result of surface disturbance (bare soil) and vehicle movement.	Re-vegetation of the site will reduce the potential for dust emissions.
<b>Biodiversity</b>	
Description of resource:	
<ul style="list-style-type: none"> <li>The site is located in an area classified as Critical Biodiversity Area 2</li> </ul>	
Extension of the footprint will result in additional degradation of adjacent land, resulting in the destruction of habitat classified as Critical Biodiversity Area 2.	Re-vegetation of the entire site will improve the landscape functionality of the area, which in effect will provide additional habitat.
<b>Social</b>	
The suburb of Rekgarathile is located directly to the north- west of the site. The centre of Stella is located 1.5 km to the north-east of the site.	
The site poses severe safety and health risks to the local community. Children are exposed to polluted water and pathogens.	The closure of the entire site (abattoir, oxidation ponds, and landfill) and their replacement with a lawful alternative will result in an overall positive impact on the local community.
Malodourous smells arising from the facility (abattoir waste, blood, anaerobic conditions at the oxidation ponds) do result in severe nuisance for local communities.	The only negative impact on the community will be a reduction of income for the informal recyclers reclaiming waste at the landfill facility, but this can be offset against enhancing waste recovery and recycling at a controlled transfer station.
The oxidation ponds pose a potential risk for drowning of people and the loss of livestock.	Good management practices will prevent or reduce the risk of drowning.
The communities' sense of place will be continuously negatively affected by the entire site.	Significant improvements in the sense of place and the quality of life.
Waste blowing from the site causes cattle deaths.	This risk will be eliminated with the adoption of good waste management practises.
Potable water supply is negatively affected by the continuous pollution of the already severely impacted aquifer.	The sources of pollution will be managed.

**Alternative (no-go alternative) – Maintaining the *status quo* at the unauthorised waste**

## disposal facility

### ***Direct impacts:***

#### **Direct impacts with a high significance**

- Surface and ground water pollution;
- Soil deterioration and contamination;
- No change/gain in land-use potential; and
- Non-compliance to legal requirements.

#### **Direct impacts with a medium significance**

- Hydrology;
- Air pollution due to dust and the potential for the burning of waste on site.

#### **Direct impacts with a low significance**

- Infrastructural impacts;
- Mobility (transportation and pedestrian) impacts ;and
- Use of resources (soil as cover material, hydrocarbons, resources).

### ***Indirect impacts:***

- Habitat transformation (due to alien and invasive infestation if it is not controlled);
- Heritage impacts (conservation);
- Social impacts (health, safety, nuisance) and impacts on the sense of place; and
- Non-compliance risks due to the landfill site not being authorised.

### ***Cumulative impacts:***

- The cumulative impacts associated with the no-go alternative will be similar to Alternative A2 (please refer to the table above)

## **3. ENVIRONMENTAL IMPACT STATEMENT**

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

## **Alternative - A1 (preferred alternative) – Capping the landfill site with clay and topsoil**

Although activities related to the capping and closure of the landfill site may have a potentially adverse impacts of a medium to high significance on surface and ground water pollution, air quality and the quality of soil (erosion and degradation), these impacts are envisaged to be immediate to the site and of a short term.

The positive impacts associated with the licencing and closure of the Stella landfill site, including the land-use potential, establishment of stormwater management and monitoring measures, and positive social impacts (health and safety, and sense of place) will have long-term, highly positive impacts on a local to regional scale.

Although the capping and closing of the landfill site will require long-term monitoring and maintenance, this is the preferred alternative for the Stella landfill site, considering the volume of waste present on site.

The long-term cumulative impacts associated with only closing the landfill facility and omitting to decommission and rehabilitate the surrounding facilities (abattoir waste disposal area and the dysfunctional oxidation plant) will be severe compared to the integrated approach followed in alternative A2. However, although alternative A2 does not fall within the scope of the BA application, it is recommended that an integrated approach is followed where the landfill site and all the surrounding facilities are rehabilitated and closed.

## **Alternative A2 – Integrated approach (Closure of the landfill facility, dysfunctional oxidation ponds and abattoir waste disposal area) – not within the scope of the Licence Application**

The direct and indirect impacts associated with the Alternative 2 (closure of entire facility). will be similar compared to that of Alternative A1 (closure of landfill facility only). Alternative A2 includes an integrated approach where the landfill site together with the oxidation ponds and the abattoir waste disposal area will be rehabilitated and closed. It is clear from the analysis that the long-term cumulative impacts associated with only closing the landfill facility will be much more severe than the integrated approach. Therefore, an integrated approach will ultimately reduce long-term environmental and social risk exposures and it is strongly recommended that the entire facility including the landfill site together with the oxidation ponds and the abattoir waste disposal area should be closed.

## **No-go alternative (compulsory)**

The no-go alternative is not a viable proposition as the site is currently not licensed. The objective of the project is to authorise and close the site.

Maintaining the *status quo* involves the continuation of an unlawful waste management activity without any requirements or commitment to rehabilitate or manage the landfill site in accordance with an EMP or licence conditions.

In terms of the impact identification and assessment matrices (Appendix G2) the number of activities related to the no-go option seems less as compared to the preferred option (closure of

the landfill site), however, in terms of the severity, duration and likelihood of impacts, the continued negative nature of the impacts related to the no-go option are much more significant and severe than the option to close the landfill site.

**SECTION E. RECOMMENDATION OF PRACTITIONER**

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES X	NO
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If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

Not Applicable

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

See Appendix F

Is an EMPr attached?

YES X	NO
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The EMPr must be attached as Appendix F.

**SECTION F: APPENDIXES**

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G1: The public participation process

Appendix G2: Impact identification and impact evaluation matrices

Appendix G3: Waste management licence application form (as submitted to NW DEDECT)