destea
department of
economic, small business development,
tourism and environmental affairs
FREE STATE PROVINCE

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, 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, 2014 as amended 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. This report format is current as of **13 February 2020**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. 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.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. 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.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. 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.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	YES	~~NO~~

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

Environmental Management Group (PTY) Ltd. (EMG) is applying for environmental authorisation and water use licence on behalf of Sweet Home Farms (PTY) Ltd. for the above-mentioned development. Sweet Home Farms (PTY) Ltd. is situated approximately 14 km southwest of the N1, crossing over the Vaal River, within the Free State Province. Access to the farm can be gained by turning east onto the R59 from the N1 and then turning south onto the first unnamed gravel road. Sweet Home Farms (PTY) Ltd. is located approximately 5 km south after turning onto the mentioned gravel road. Refer to Appendix A for the locality map.

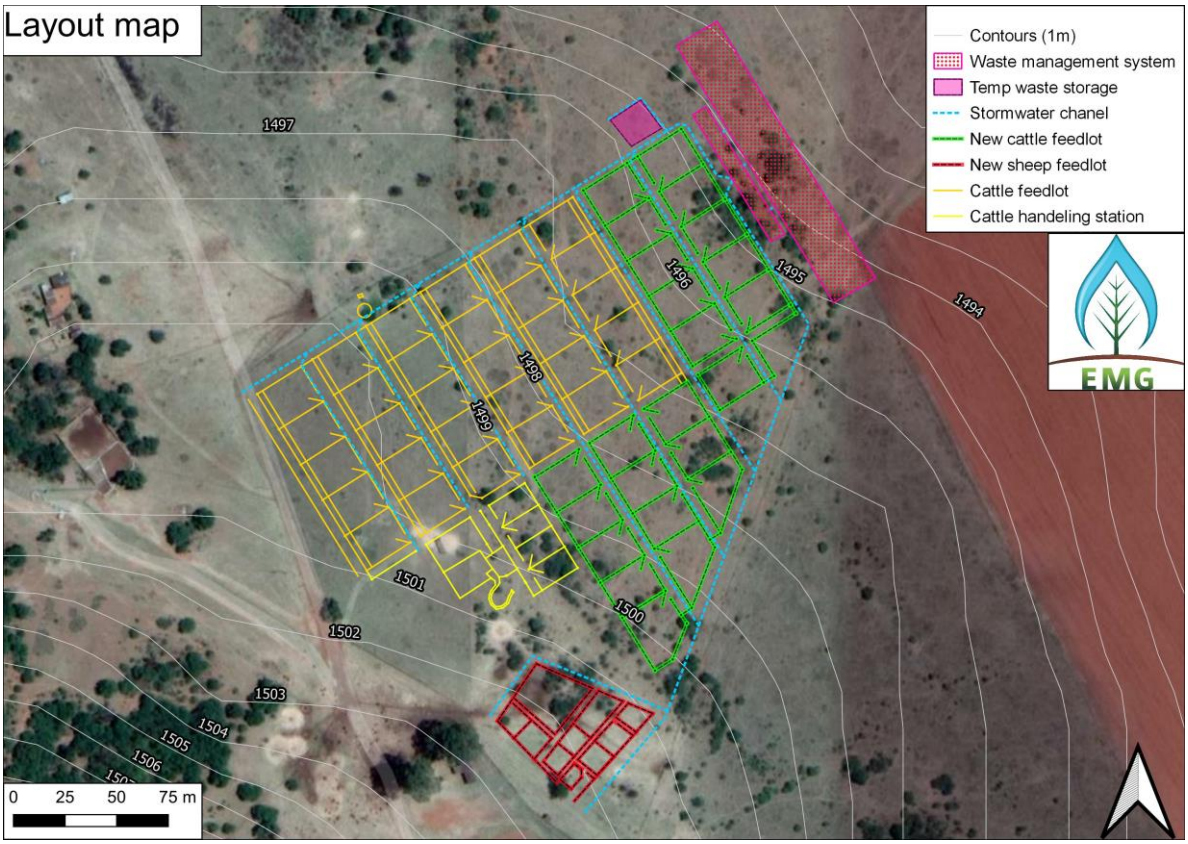


Figure 1 Layout map of the proposed expansion and new development livestock feedlots.

The proposed development includes the expansion of a cattle feedlot to host approximately 2000 cattle and the construction of a sheep feedlot that will ultimately host 1000 sheep. The proponent has tested the financial viability of high-density cattle farming by erecting 30 cattle feedlot cells containing 480 cattle. The total area within the fenced boundary of the existing feedlot is 1.7 ha. However, it should be emphasised that the actual footprint of built-up infrastructure only includes fencing, which equates to far less than 1 ha. Stocking density within the 30 feedlot cells equates to an average of 16 cattle per feedlot cell (500 m^2). This is considered a reasonably low stocking density which has not caused significant vegetation clearance through trampling, therefore not triggering Listing Notice 1 Activity 27 (GN 327). The proponent wishes to expand on the high-

density feedlot farming in two phases (Figure 1).

Phase 1:
Increasing the stocking density from 480 large stock units (LSU) to 2000 LSU. The increase in stocking density will have to be accommodated by constructing 23 additional cattle feedlot cells of similar size to the existing feedlot cells (500 m^2 per feedlot cell). On completion, the cattle feedlot will include 58 cells (30 existing feedlot cells, 23 new feedlot cells, and 5 cells within the handling station) and will cover approximately 3.8 ha.

Phase 2:
Construction of a new sheep feedlot covering an approximate area of 0.25 ha, made up of 10 feedlot cells. The new sheep feedlot will have the potential of hosting 1000 sheep (small stock unit, SSU).

Feedlot waste management:
Organic waste produced by the proposed development's operation will be a mixture of manure and soil, forming a biodegradable by-product. According to Font-Palma (2019), healthy feedlot cattle produce manure equivalent to 5-6% of their body weight per day. The proposed cattle feedlot production scheme aims to introduce new cattle every four months with a starting weight of 250 kg and an exit weight of 500 kg. Calculated as the average between the two weight classes, each LSU will produce 562.5 kg manure per month.

According to Ogejo et al, (2010), sheep produce manure equivalent to 5% of their body weight per day. The proposed sheep feedlot production scheme aims to introduce new sheep every four months, with a starting weight of 25 kg and an exit weight of 50 kg. Calculated as the average between the two weight classes, each SSU will produce 56 kg manure per month.

The concentrated quantities of manure resulting from high-density livestock farming often lead to the proliferation of unwanted pest insects such as flies. To mitigate this, probiotics will be introduced into the livestock feed and will be sprayed onto the feedlots to limit the proliferation of unwanted pests.

The feedlots will be cleaned each month which involves the mechanical removal of manure. The collected waste will be transported to a temporary storage/drying area lined by an impenetrable material, preventing seepage into the ground. Manure stockpiles will be covered with a 50% shade net until dry. The dried manure will be used as fertiliser on the surrounding cultivated fields.

A stormwater layout plan has been compiled and is attached (see Appendix J). The mentioned stormwater management plan will conforms to industry best practice design. The stormwater network will redirect runoff from the feedlots into a sedimentation pond, trapping solid waste before entering the evaporation pond (waste lagoon). Both the sedimentation pond and waste lagoon will be lined by an impenetrable material, preventing seepage. The accumulated solids within the sedimentation pond will be cleaned when it reaches 70% capacity. Waste from the sedimentation pond will be transported to the temporary waste storage area to dry out and eventually used as fertiliser. The water within the evaporation pond (waste lagoon) will dry naturally and eventually be used as fertiliser in the surrounding cultivated fields.

Dimensions of the sedimentation pond and waste lagoon are as follows:
Sedimentation pond:
(W)7.7 m x (L)72 m x (D)1.5 m _ Volume: 831.6 m^3
Waste lagoon:
(W)23 m x (L)145 m x (D)1 m _ Volume: 3335 m^3

Water supply:
The supply of cool, clean, good-quality water is essential for high-density cattle/ sheep production. The water requirement for cattle and sheep are calculated as:

Cattle: 40 litre per LSU per day: 40 litre x 2000 x 30 days = 2287 cubes / month

Sheep: 5 litre per SSU per day: 5 litre x 1000 x 30 days = 151 cubes / month Drinking water will be supplied in a trough and placed off the ground. This ensures keeping the water clean and free of livestock secretions. Water abstracted from three existing boreholes will satisfy the water supply need. The operational activities for the proposed feedlot facility will require authorisation in terms of Section 21 of the National Water Act. The proponent has submitted a water use licenses application to the Department of Water and Sanitation (DWS) (see appendix J) Mortalities will be immediately removed from the feedlot and stored in a cooling room for a maximum of 48 hours, where after they will be donated to the Johannesburg Zoo. Here the mortalities will be fed to the various carnivores within the zoo (Appendix J).

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN 327,325 and 324	Description of project activity
Example: ***GN 327 Item xx xx): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.***	***A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river***
GN 327 Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.	The proposed development intends to construct an additional 23 cattle feedlot cells and a new sheep feedlot. The development would require implementing an adequate stormwater management plan that would be able to transport runoff from the feedlots through a waste management system (sedimentation pond and evaporation pond) that will limit the risk of seepage. Additionally, land clearing through the natural process of trampling by livestock will result in the removal of natural vegetation.
GN 327 Activity 39: The expansion and related operation of facilities for the concentration of animals in densities that will exceed— (i) 20 square metres per large stock unit, where the expansion will constitute more than 500 additional units;	The proposed development includes the expansion of the existing cattle feedlot. In full operation, the cattle feedlots will host approximately 2000 cattle at 14 m^2 per LSU, which coincides with the recommended holding densities for LSUs of the Department of Agriculture.
GN 327 Activity 4: The development and related operation of facilities or infrastructure for the concentration of animals for the purpose of commercial production in densities that exceed –	The proposed development includes the additional construction of a new sheep feedlot. In full operation the sheep feedlot will have the maximum capacity of holding 1000 small stock units (SSUs) at 2 m^2 per SSU, which coincides with the recommended holding densities for

(ii) 8 square meters per small stock unit	SSUs of the Department of Agriculture.

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 as required by Appendix 1 (3)(h) of GN 326, Regulation 2014 as amended. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific 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.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The proposed development can only occur on the proponent's property (Farm Lily-Fontein No. 156) which is the only viable site.	26°54'2.62"S	27°37'53.80"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A	N/A	N/A
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A	N/A	N/A

*****The proposed development is not a linear activity.**

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity	N/A	N/A
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

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.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The preferred layout plan was drafted and finalised following site visits by both the EAP and relevant specialists. It was concluded that on the preliminary visual observations, the new feedlots should be placed on degraded/ overgrazed veld. The proposed placement (preferred layout) will have the least likelihood of producing adverse environmental impacts. It was decided that the new feedlots should be placed adjacent to the existing feedlots as this will also streamline integration into the stormwater management plan. Furthermore, the proposed placement of these structures is favoured given the site's topography, which is crucial for surface water drainage. The sheep feedlot would preferably be situated close to the cattle feedlot, which allows easy integration into the stormwater management network. Careful consideration of the proposed structure's placements (in terms of possible adverse environmental impacts) was undertaken before finalising the preferred layout plan. Therefore, the layout plan presented should be favoured.	26°54'2.62"S	27°37'53.80"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Careful consideration of possible environmental impacts was assessed prior to finalising the preferred layout plan. Therefore, no other alternatives have been proposed. If any such propositions arise, the final BAR will be updated.	26°54'2.62"S	27°37'53.80"E

Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A	N/A	N/A

c) Technology alternatives

Alternative 1 (preferred alternative)
To the knowledge of the EAP, modern agricultural techniques will be used to both increase efficiency and reduce environmental impacts.
Alternative 2
N/A
Alternative 3
N/A

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)		
As far as possible, the development will commit to reducing waste and effectively re-use or repurposing waste.	N/A	N/A
Alternative 2		
N/A		
Alternative 3		
N/A		

e) No-go alternative

The no-go alternative will result in the rejection of the proposed development. The rejection of the proposed development will result in the land remaining in its current degraded and unutilised state. The no-go alternative will prevent new job creation and reduce local food security.

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	43978 m^2
Alternative A2 (if any)	~~m^2~~
Alternative A3 (if any)	~~m^2~~

or, for linear activities:

***** The proposed development is not a linear activity.**

[1] "Alternative A.." refer to activity, process, technology or other alternatives.

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	~~m~~
Alternative A2 (if any)	~~m~~
Alternative A3 (if any)	~~m~~

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	~~m^2~~
Alternative A2 (if any)	~~m^2~~
Alternative A3 (if any)	~~m^2~~

4. SITE ACCESS

Does ready access to the site exist?	YES	~~NO~~
If NO, what is the distance over which a new access road will be built		~~m~~

Describe the type of access road planned:

Sweet Home Farms (PTY) Ltd. is situated approximately 14 km southwest of the N1, crossing over the Vaal River, within the Free State Province. Access to the farm can be gained by turning east onto the R59 from the N1 and then turning south onto the first unnamed gravel road. Sweet Home Farms (PTY) Ltd. is located approximately 5 km south after turning onto the mentioned gravel road.

	Photo: View of Farm Lily-Fontein No. 156's gate. The site notice is also visible in this picture.

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.

5. 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 accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and

- 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.

6. LAYOUT/ROUTE PLAN

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:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

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 report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 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.

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES	~~NO~~	Please explain
The proposed development will be located adjacent to the existing cattle feedlot on the same farm. The farm is already being used for cattle farming.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	~~NO~~	Please explain
The Free State Spatial Development Framework 2014 states under section B 12.1 that the agricultural sector provides nearly 7% of the provincial GDP. Furthermore, it indicates that 14% of South Africa's agricultural GDP is generated within the Free State Province. The Free State Province acknowledges and supports the objectives of the Comprehensive African Agricultural Development Programme (CAADP) who aims to combat food insecurity prompted by structural poverty and inequality. Furthermore, it states that improved food security is reliant on efficient government policies and sustainable agricultural practices that integrate the food economy into a rapid economic growth strategy. In turn, this manifests in enhanced benefit distribution. During the proposed development's operational phase it will support the food insecurity need and provide jobs.			
(b) Urban edge / Edge of Built environment for the area	~~YES~~	NO	Please explain
The proposed development will be situated on a farm, located approximately 26 km east from the urban edge line of Parys.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	~~NO~~	Please explain
According to the Ngwathe Local Municipality's IDP 2020/21, with reference to its agricultural sector, it states that the region is one of South Africa's most productive areas. *"Virtually, the larger part of the region that is suitable for cultivation is being utilised (48%) and only 1% could still be developed for that purpose. Stock farming (46%) is mainly extensive, focusing on grazing and dairy farming."* The proposed development will follow the high-density livestock farming principles that minimise the amount of land required for livestock production. It is therefore foreseen that the proposed development will benefit the agricultural sector of the region.			
(d) Approved Structure Plan of the Municipality	YES	~~NO~~	Please explain
The proposed development falls within an agricultural area, therefore the development coincides with the approved structure plan of the Municipality.			

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	~~YES~~	NO	Please explain
The Ngwathe Local Municipality EMF (2013) indicated the importance of local agricultural developments in supporting South Africa's agricultural sector. The EMF also stated the importance of compatible future land use planning. The approval of this development will not compromise the integrity of the Ngwathe Local Municipality's EMF due to the agriculturally orientated nature of the proposed development and its position adjacent to an existing feedlot.			
(f) Any other Plans (e.g. Guide Plan)	~~YES~~	NO	Please explain
No other municipal or provincial plans associated with the proposed development other than those mentioned (Local Municipality's IDP and EMF), have been obtained.			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	~~NO~~	Please explain
The proposed development will address and meet issues such as job creation and food security. The proposed development falls within the timeframes intended by the SDF and meets the needs identified within the local municipalities IDP.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES	~~NO~~	Please explain
The proposed development will contribute to the positive improvement of the socio-economic dimension of the local area through meeting the need for both local and national food security and job creation.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	~~NO~~	Please explain
The proposed development is an expansion of an already operational feedlot and the construction of a new sheep feedlot. No additional municipal infrastructure would be needed to satisfy the operational needs of this development. Groundwater supplied by three existing boreholes will satisfy the additional water need for the new feedlots. Electricity is adequately available on the farm.			

6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix J.)	YES	~~NO~~	Please explain
The proposed development is situated on agricultural grounds on the farmer's property. Boreholes will supply the water for the proposed feedlots. A Section 21 water use licence has already been applied for (See appendix J). Adequate electricity supply exists on the farm.			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES	~~NO~~	Please explain
The proposed development will contribute to local job creation, which will ultimately improve the local socio-economic sphere. Additionally, the increased meat production addresses the national food security need of South Africa.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES	~~NO~~	Please explain
The proposed activity is an agricultural development, supplementary to the existing operations that occur on the farm and in the immediate area. The location strongly favours the proposed development.			
9. Is the development the best practicable environmental option for this land/site?	YES	~~NO~~	Please explain
The new feedlots will expand on the existing high-density livestock production. The layout placement of the new feedlots was finalised after consultation with the proponent and specialist's inputs. It was concluded that the new feedlots should be placed on degraded/ overgrazed veld, thus minimising the environmental impact. Therefore, the proposed development is considered the best practicable environmental option.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	~~NO~~	Please explain
Benefits arising from the new feedlots include job creation, improved socio-economic dimension, and increased meat production. The proposed development's placement was finalised after consultation with the proponent and specialists' inputs. It was concluded that the proposed activity should be placed on degraded/ overgrazed veld, thus minimising the environmental impact. The benefits arising from the operations of this activity outweighs the adverse environmental impacts. Therefore the proposed activity should receive favourable consideration.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	~~NO~~	Please explain
The proposed activity is situated within an agricultural area; thus, it is considered an addition to similar activities already occurring in the area.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	~~YES~~	NO	Please explain
The Environmental Management Group (EMG) will undertake a comprehensive Public Participation Process to ensure that all concerns raised from adjacent landowners and the public are adequately addressed. After addressing all issues raised by the I&AP's, impacts identified during the impact assessment and implementing all the proposed mitigations, no rights of the surrounding landowners nor the surrounding environment will be negatively affected.			

13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	~~YES~~	NO	Please explain
The proposed activity falls outside the urban edge in an agricultural zone. Therefore, not compromising the urban edge.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	~~YES~~	NO	Please explain
This activity does not form part of the SIPs (Strategic Integrated Projects).			
15. What will the benefits be to society in general and to the local communities?			Please explain
The project will create job opportunities both during the construction phase and operational phase, and Local Economic Development. The proposed development will also address the national need for food security.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
Food security is one of the main concerns in the Free State Province's local farming sector and general communities. This proposed development addresses this concern.			
17. How does the project fit into the National Development Plan for 2030?			Please explain
Agriculture has the potential to create around one million new jobs by 2030, a significant contribution to the overall employment target of South Africa. Therefore, the project fits into the National Development Plan.			

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

NEMA Section 23 requires the following general objectives:

(2) The general objective of integrated environmental management is to—

a. Promote the integration of the principles of environmental management set out in section 2 into making all decisions that may significantly affect the environment;

b. Identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2;

c. Ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;

d. Ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;

e. Ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment;

f. Identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.

These objectives have been achieved through:

a. Decision-making based on the findings of the Basic Assessment Process

b. The identification and evaluation of impacts in terms of environmental, socio-economic and cultural heritage. The risks, consequences and alternatives and options for mitigation have been assessed.

c. The BAR process and the Environmental Management Plan (EMP) ensure the effects of the proposed activity(s) on the environment receive adequate consideration before actions are taken in connection with them.

d. There has been a fair and appropriate opportunity for public participation engagement, leading to the decision being considered.

e. Environmental attributes have been considered in management and decision making.

f. The methods best suited to environmental management for this activity have been followed and recommended.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
NEMA Section 2 requires: *(2) Environmental Management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural heritage and social interests equitably.* These principles have been taken into consideration through: The undertaking of a Basic Assessment process by a competent EAP, informed by guidelines, the consideration of impacts and alternatives (advantages and disadvantages associated) has been conducted. Furthermore, a comprehensive Public Participation Process (PPP) and specialist investigations formed part Basic Assessment (BA) process, whilst mitigation measures and the needs and desirability of the proposed project were evaluated. This ensured that all provisions of the Act were evaluated and executed; therefore, meeting the requirement for Integrated Environmental Management.

11. 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:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
The Constitution of South Africa (No 108 of 1996)	Protection of human rights and environment of the study area.	National	1996
National Environmental Management Act (No 107 0f 1998). (NEMA)	National Environmental Management Act (No 107 0f 1998)	The Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA)	2014
National Heritage Resources Act (No. 25 of 1999)	Protection of heritage resources surrounding the study area and those uncovered during the construction phase by reporting to the nearest heritage authority. The development area will exceed five thousand square metres (5000m^2).	South African Heritage Resources Agency (SAHRA)	1999
National Environmental Management: Biodiversity Act (10 of 2004). (NEM:BA)	Protection of biodiversity features and where not possible the acquisition of relevant plant translocation permits.	The Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA)	2004
National Water Act (Act No 36 of 1998)	Protection of water resources and where not possible relevant permits/licences will need to be applied for.	Department of Water and Sanitation (DWS)	1998
Occupational Health and Safety	Protection of workers on site	National	1993

Act (No 85 of 1993)	through provision of Personal Protective Equipment's; Training and other health and safety amenities		
Environmental Impact Assessment Regulations (GN R. 327, R. 325 & 324) of 7 April 2017	The proposed development triggers activities listed in GNr. 327	National Department of Environmental Affairs (DEA)	2014

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES	~~NO~~
If YES, what estimated quantity will be produced per month?	<2m^3	

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

Waste produced during the construction/ initiation phase will be general waste items associated with the relevant construction. No hazardous waste will be produced during this phase. Construction waste will be disposed of at the nearest registered landfill site.

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

Construction waste will be disposed of at the nearest registered landfill site.

Will the activity produce solid waste during its operational phase?	YES	~~NO~~
If YES, what estimated quantity will be produced per month?	740 ton (Wet weight) 222 ton (Dry weight)	

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

Recycling will take place on-site as per the waste classification system. All recyclable material will be disposed of at a local recycler. All non-recyclable waste will be disposed of at the nearest registered landfill site. Mortalities will be removed from the feedlot by the proponent, on a daily basis, and stored in a cooling room for a maximum of 48 hours, whereafter they will be donated to the Johannesburg Zoo (see Appendix J). The remaining solid waste production is considered domestic waste and will also be removed to the nearest registered landfill site.

According to the National Environmental Management: Waste Act (Act No. 59 of 2008), Under the new Waste Management activities, **animal manure is not regarded as waste** and is defined as "a by-product which is bio-degradable in nature and could further be used for fertilization purpose" and therefore NEM:WA is not triggered thus the proposed facility does not enquire a WML.

Even though animal manure is not regarded as waste, as per regulation, the following methods of appropriately utilising manure are as follows:

Organic waste produced by the new feedlot's operation will be a mixture of manure and soil, forming a biodegradable by-product. Manure will be collected and transported to a temporary storage/drying area lined by an impenetrable material, preventing seepage into the ground. Manure stockpiles will be covered with a 50% shade net until dry. The dried manure will be used as fertiliser on the surrounding cultivated fields. It is estimated that at full operational capacity, 740 ton, manure will be produced.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

All domestic waste items will be disposed of at the nearest registered landfill site.

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

Waste produced during the operational phase of the feedlot includes mortalities, manure, feeding silage, and domestic waste generated by employees.

Manure will be removed from the feedlots and transported to a temporary storage/drying area. The dried manure will then be reused as fertilizer on the surrounding cultivated fields.

Mortalities will immediately be removed and stored in a cooling room for a maximum of 48 hours and later be donated to the Johannesburg Zoo. Here the carcasses will be fed to the various carnivores kept within the zoo.

Domestic waste will be transported to the nearest registered landfill site.

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 NEM:WA?	~~YES~~	NO

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?	~~YES~~	NO

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. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of	~~YES~~	NO

in a municipal sewage system?		
If YES, what estimated quantity will be produced per month?		~~m³~~
Will the activity produce any effluent that will be treated and/or disposed of on site?	YES	~~NO~~

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.

Typical liquid effluent produced by feedlots includes runoff from feedlot pens, manure storage areas, sedimentation and evaporation pond collection zones. The by-products from runoff will be evaporated, and the remaining solids, re-used as fertiliser on the surrounding cultivated fields. The exact volume of effluent is not easily determined as the production thereof is reliant on precipitation events. However, it is anticipated that the daily throughput capacity will be less than 2000 cubic meters, thus not triggering an additional environmental authorisation.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	~~YES~~	NO

If YES, provide the particulars of the facility:

Facility name:	N/A		
Contact person:			
Postal address:			
Postal code:			
Telephone:		**Cell:**	
E-mail:		**Fax:**	

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

As stipulated earlier, all runoff will be channelled into a two-phase pond system. The first phase includes the removal of the majority of solids in the sedimentation pond. The second phase consists of the collection of clean runoff into an evaporation pond. Here, water will evaporate naturally, and the remaining solids will be used as fertiliser.

Probiotics will be introduced into the livestock's feed to limit the infestation of flies.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?	YES	~~NO~~
If YES, is it controlled by any legislation of any sphere of government?	~~YES~~	NO

If YES, the applicant must 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:

Emissions that could be generated during the construction phase are small amounts of dust and exhaust emissions from construction vehicles and machinery. Normal levels associated with this type of development is expected.

Emissions that will be released during the operational phase include methane from the cattle and cattle manure. The effects of these emissions, including the production of unwanted odours, will have minimal influence on the surrounding community as the general prevailing wind direction was considered before finalising the feedlots' placement.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	~~YES~~	NO

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?	YES	~~NO~~
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

Describe the noise in terms of type and level:

The movements of construction trucks, machinery and other construction activities will generate noise on-site and in surrounding communities. However, the noise will be short term, localised and will last during the construction activities/phase of the project.

During the operational phase, noise will be generated by livestock. The effects hereof on the surrounding community/ environment are deemed negligible considering the activity's locality on a farm with the nearest neighbour 2.6 km away.

13. 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~~
x		x			

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:	2438 m^3	
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES	~~NO~~

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

***** See Appendix J for proof of submission to DWS.**

14. ENERGY EFFICIENCY

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

The following could be considered:

- Offices and workers' residences could be orientated in a northern direction.
- Where possible energy saving light bulbs must be used in the offices and workers' residences as well as outside for the feedlot.
- Solar panels can be used to heat the water and geysers and power outdoor lighting.

The developer/farm owner is committed to search and investigate more solutions and opportunities to increase the sustainability of this proposed Sheep feedlot development.

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

The use of solar panels for the additional contribution of green energy is strongly considered; however, it is dependent on available funds. The use of green energy alternatives will be recommended in the Environmental Management Plan (EMP).

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

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 B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A): 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~~

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	Free State Province
District Municipality	Fezile Dabi District Municipality
Local Municipality	Ngwathe Local Municipality
Ward Number(s)	7
Farm name and number	Farm Lily-Fontein No. 156
Portion number	0
SG Code	F02500000000015600000

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Agriculture

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, to this application.

Is a change of land-use or a consent use application required? ~~YES~~ NO

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

~~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~~

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~~

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~~

2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills	X
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain	X	2.9 Seafront	
2.10 At sea					

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:		**Alternative S2 (if any):**		**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)	~~YES~~	NO	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Dolomite, sinkhole or doline areas	~~YES~~	NO	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Seasonally wet soils (often close to water bodies)	~~YES~~	NO	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Unstable rocky slopes or steep slopes with loose soil	~~YES~~	NO	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Dispersive soils (soils that dissolve in water)	~~YES~~	NO	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Soils with high clay content (clay fraction more than 40%)	~~YES~~	NO	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Any other unstable soil or geological feature	~~YES~~	NO	~~YES~~	~~NO~~	~~YES~~	~~NO~~
An area sensitive to erosion	~~YES~~	NO	~~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 location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

~~Natural veld - good condition~~[E]	~~Natural veld with scattered aliens~~[E]	~~Natural veld with heavy alien infestation~~[E]	~~Veld dominated by alien species~~[E]	~~Gardens~~
~~Sport field~~	Cultivated land	~~Paved surface~~	Building or other structure	Bare soil

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. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	~~YES~~	NO	~~UNSURE~~
Non-Perennial River	~~YES~~	NO	~~UNSURE~~
Permanent Wetland	~~YES~~	NO	~~UNSURE~~
Seasonal Wetland	~~YES~~	NO	~~UNSURE~~
Artificial Wetland	~~YES~~	NO	~~UNSURE~~
Estuarine / Lagoonal wetland	~~YES~~	NO	~~UNSURE~~

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

N/A

LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that 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:

Natural area	~~Dam or reservoir~~	~~Polo fields~~
~~Low density residential~~	~~Hospital/medical centre~~	~~Filling station~~ ~~H~~
~~Medium density residential~~	~~School~~	~~Landfill or waste treatment site~~
~~High density residential~~	~~Tertiary education facility~~	~~Plantation~~
~~Informal residential~~~~A~~	~~Church~~	Agriculture
~~Retail commercial & warehousing~~	~~Old age home~~	~~River, stream or wetland~~
~~Light industrial~~	~~Sewage treatment plant~~~~A~~	~~Nature conservation area~~
~~Medium industrial~~ ~~AN~~	~~Train station or shunting yard~~ ~~N~~	Mountain, koppie or ridge
~~Heavy industrial~~ ~~AN~~	~~Railway line~~ ~~N~~	~~Museum~~
~~Power station~~	~~Major road (4 lanes or more)~~ ~~N~~	Historical building
~~Office/consulting room~~	~~Airport~~ ~~N~~	~~Protected Area~~
~~Military or police base/station/compound~~	~~Harbour~~	Graveyard
~~Spoil heap or slimes dam~~~~A~~	~~Sport facilities~~	~~Archaeological site~~
~~Quarry, sand or borrow pit~~	~~Golf course~~	~~Other land uses (describe)~~

If any of the boxes marked with an "N "are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	~~YES~~	NO
Core area of a protected area?	~~YES~~	NO
Buffer area of a protected area?	~~YES~~	NO
Planned expansion area of an existing protected area?	~~YES~~	NO
Existing offset area associated with a previous Environmental Authorisation?	~~YES~~	NO
Buffer area of the SKA?	~~YES~~	NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

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 Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	~~YES~~	NO
	Uncertain	

No culturally or historically significant elements within 20 m of the site boundary have been identified. Two graveyards and a historical building are present on the farm, however these resources are outside of the development layout and will not be affected.

Statement from the specialist:" *Impact on palaeontological, archaeological or historically significant remains within development footprint is considered very low to non-existent. It is recommended that the planned development is exempt from further palaeontological investigation."*

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

Will any building or structure older than 60 years be affected in any way?	~~YES~~	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	~~YES~~	NO

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

7. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

The following information was obtained in the Ngwathe Local Municipality Annual Report 2019/20:

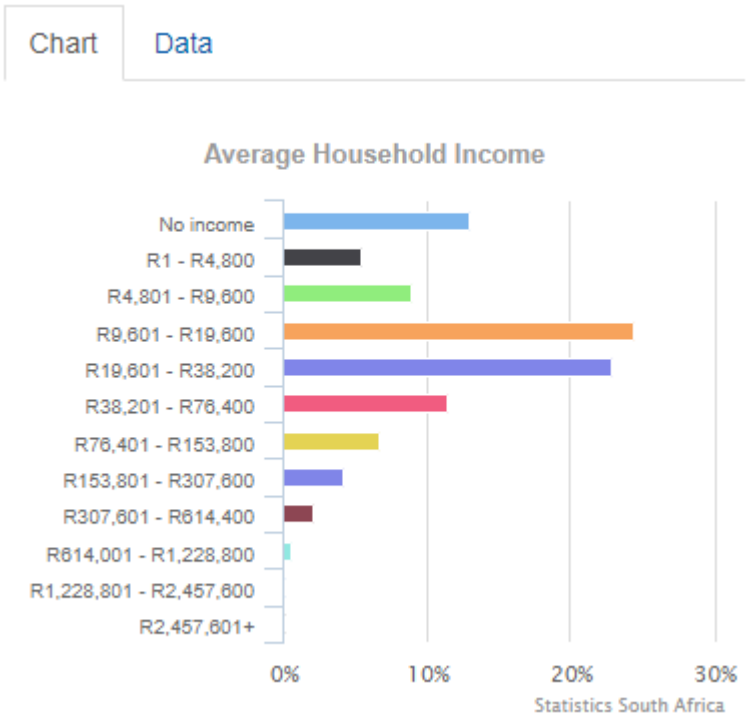
Table 8: Unemployment rate in Ngwathe municipal wards

Unemployment rate	35,2%
Youth unemployment rate	45,1%

Data source: Statistics South Africa, Census 2011

Economic profile of local municipality:

The following information was obtained in the Ngwathe Local Municipality Annual Report 2019/20:



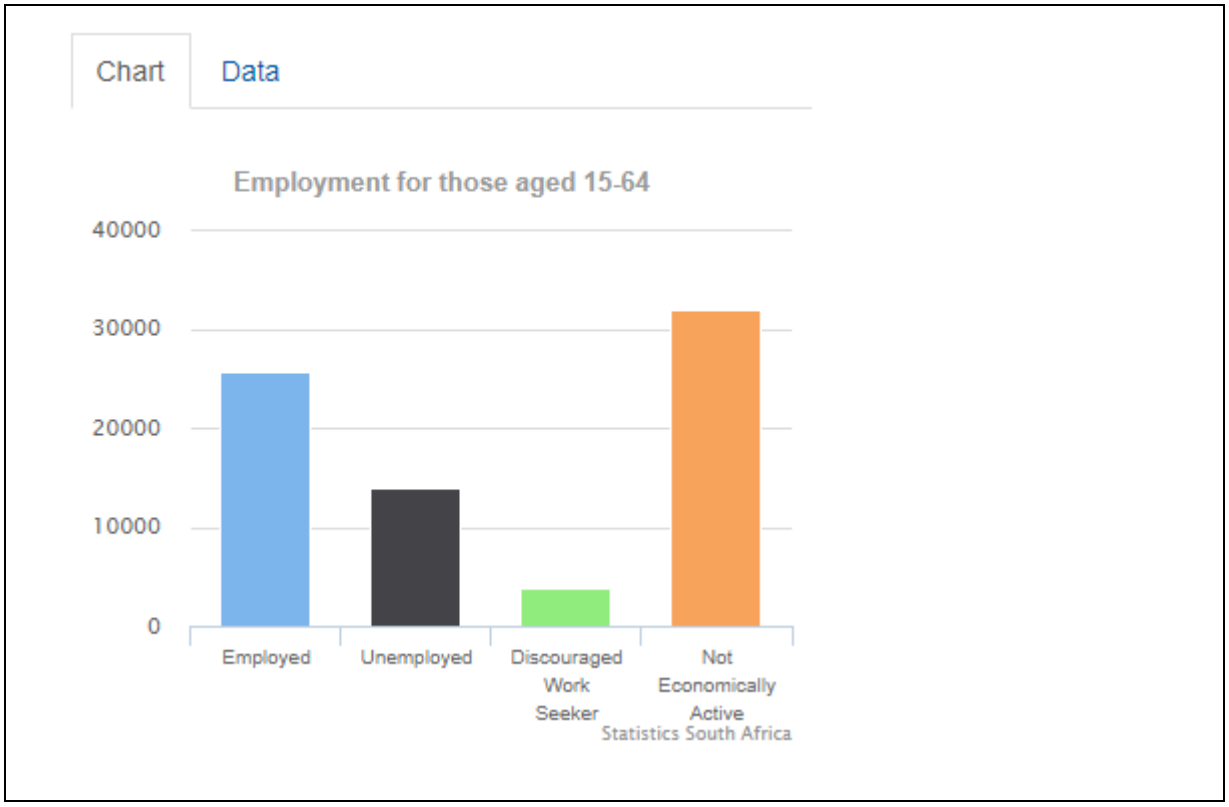
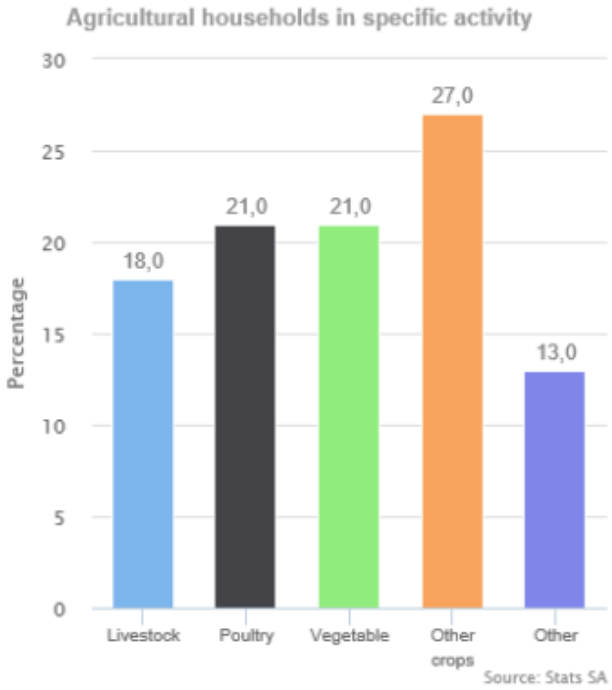


Chart
Data
Employment for those aged 15-64
40000
30000
20000
10000
0
Employed
Unemployed
Discouraged Work Seeker
Not Economically Active
Statistics South Africa

Economic Overview

The highest contributing sectors to the Growth Domestic Product (GDP) are:

- Agriculture



- Retail trade, catering and accommodation (11.5%)
- Tourism
- Finance, insurance, real estate and business services
- Transport, storage
- Building and Construction

Level of education:

The following information was obtained in the Ngwathe Local Municipality Annual Report 2019/20:

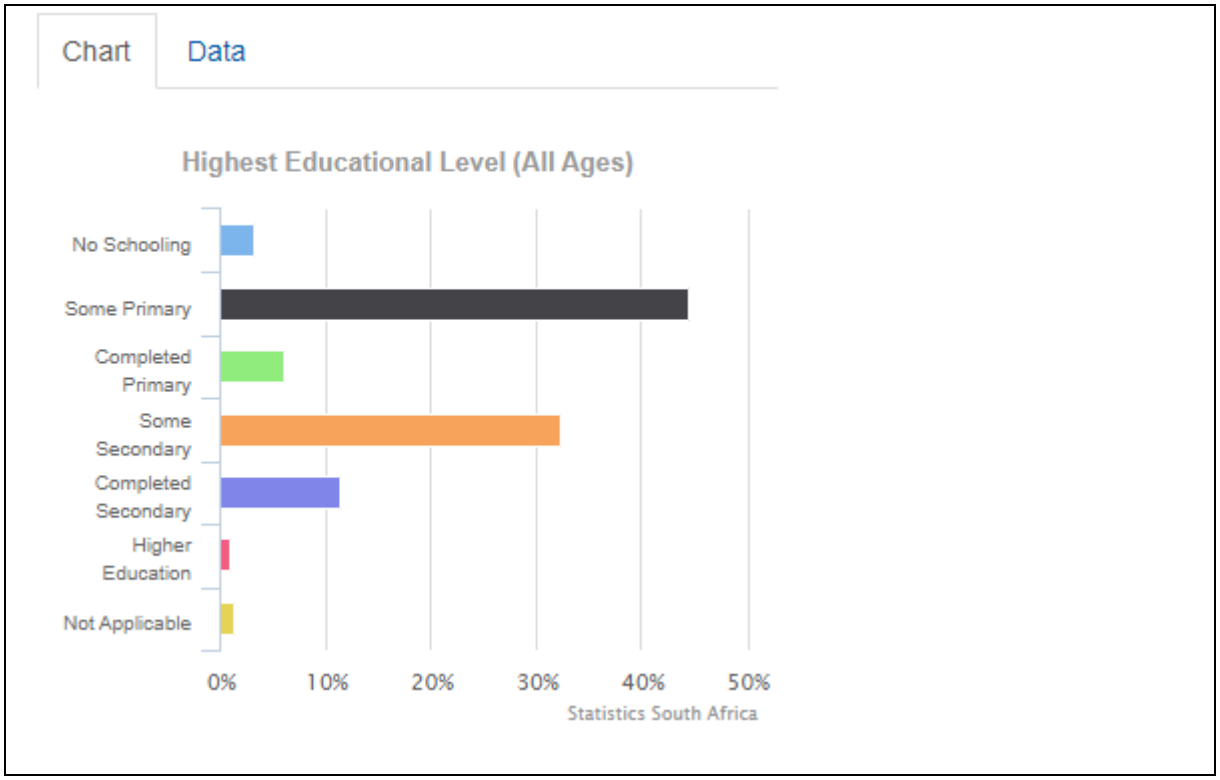


Chart
Data
Highest Educational Level (All Ages)
No Schooling
Some Primary
Completed Primary
Some Secondary
Completed Secondary
Higher Education
Not Applicable
0%
10%
20%
30%
40%
50%
Statistics South Africa

Table : Education Levels in Ngwathe municipal area

Education Levels	Totals
No schooling	4301
Grade 0	3432
Grade 1/Sub A/Class 1	3568
Grade 2/Sub B/Class 2	3244
Grade 3/Standard 1/ABET 1	4809
Grade 4/Standard 2	4927
Grade 5/Standard 3/ABET 2	5099
Grade 6/Standard 4	6059
Grade 7/Standard 5/ABET 3	5948
Grade 8/Standard 6/Form 1	7732
Grade 9/Standard 7/Form 2/ABET 4/Occupational certificate NQF Level 1	8313
Grade 10/Standard 8/Form 3/Occupational certificate NQF Level 2	11406
Grade 11/Standard 9/Form 4/NCV Level 3/ Occupational certificate NQF Level 3	9426
Grade 12/Standard 10/Form 5/Matric/NCV Level 4/ Occupational certificate NQF Level 3	21877
NTC I/N1	98
NTCII/N2	28
NTCIII/N3	166
N4/NTC 4/Occupational certificate NQF Level 5	333
N5/NTC 5/Occupational certificate NQF Level 5	153
N6/NTC 6/Occupational certificate NQF Level 5	273
Certificate with less than Grade 12/Std 10	43
Diploma with less than Grade 12/Std 10	195
Higher/National/Advanced Certificate with Grade 12/Occupational certificate NQF	493
Diploma with Grade 12/Std 10/Occupational certificate NQF Level 6	1426
Higher Diploma/Occupational certificate NQF Level 7	534
Post-Higher Diploma (Master's	304
Bachelor's degree/Occupational certificate NQF Level 7	1001
Honours degree/Post-graduate diploma/Occupational certificate NQF Level 8	565
Master's/Professional Master's at NQF Level 9 degree	176
PHD (Doctoral degree/Professional doctoral degree at NQF Level 10)	65
Other	230

Data source: Statistics South Africa, Community Survey 2016

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 5 000 000
What is the expected yearly income that will be generated by or as a result of the activity?	Expected yearly income is greatly dependent on the current meat price . Yearly income calculated for LSUs (R48/kg live meat) and SSUs (R60/kg live meat) equates to R585 108 000.00 per anum.
Will the activity contribute to service infrastructure?	~~YES~~ / NO
Is the activity a public amenity?	~~YES~~ / NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	15
What is the expected value of the employment opportunities during the development and construction phase?	R200 000
What percentage of this will accrue to previously disadvantaged individuals?	%100

How many permanent new employment opportunities will be created during the operational phase of the activity?	15
What is the expected current value of the employment opportunities during the first 10 years?	R480 000
What percentage of this will accrue to previously disadvantaged individuals?	%1000

8. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				**If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan**
Critical Biodiversity Area (CBA)	~~Ecological Support Area (ESA)~~	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	**CBA:** A small portion of the existing cattle feedlots are located within an area classified as a Critical Biodiversity Area 2 (CBA2). It should be emphasised that this specific area is not typically representative of a CBA2 area. The terrestrial ecologists concluded that the degraded veld conditions due to overgrazing and the frequent movement of farm vehicles have contributed to this condition. The specialists also indicated that the small hill situated near the western region of the site (+- 200 m from the proposed feedlots) would be a better representative of a CBA2 area. This area is not included in the development plan and will thus not be affected. CBA2 areas are described in the literature as "*the best option for meeting biodiversity targets in the smallest area while avoiding conflict with other land uses.*"
				ONA: The rest of the receiving environment displays characteristics of a disturbed grassland due to overgrazing and the frequent movement of farm equipment.
				NNR: A great deal of the surrounding environment has been previously utilised for dry crop cultivation.

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	0%	A large portion of the study area's natural environment is degraded due to overgrazing and the movement of farm equipment.
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	A large portion of the study area's natural environment is degraded due to overgrazing and the movement of farm equipment. Several invasive plant species were observed on the site.
Degraded (includes areas heavily invaded by alien plants)	50%	A large portion of the study area is considered degraded due to overgrazing and the frequent movement of farm equipment. Several exotic plant species were also recorded
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	50%	A large portion of the study area has been and is currently being used for dry crop cultivation.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	~~Critical~~	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			~~Estuary~~		~~Coastline~~	
	~~Endangered~~							
	Gm8: Vulnerable							
	~~Least Threatened~~	~~YES~~	NO	~~UNSURE~~	~~YES~~	NO	~~YES~~	NO

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The proposed development will occur within the Soweto Highveld Grassland (Gm8) that the NBA 2018 has assigned a Red List of Ecosystem (RLE) threat status of Vulnerable (VU). The NBA of 2018 also indicated that Gm8 is poorly represented in statutorily protected areas and, thus, poorly protected. In a pristine condition, Gm8 presents Gently to moderately undulating landscape on the Highveld plateau supporting short to medium-high, dense, tufted grassland dominated almost entirely by *Themeda triandra* and accompanied by a variety of other grasses such as *Elionurus muticus*, *Eragrostis racemosa, Heteropogon contortus* and *Tristachya leucothrix*.

The vegetation structure and composition observed on-site does not resemble a healthy functioning grassland. It is provisionally assumed that the proposed development will have minimal impact on the greater functioning of the ecosystem, considering the degraded conditions observed on-site. Degradation causing factors include overgrazing, noticeable sheet erosion, and the frequent movement of farm equipment. It should be emphasised that the overall degraded environmental conditions were motive to exclude further ecological investigations within the proposed development area.

Important environmental features:

The small "koppie" / hill situated approximately 200 m west from the proposed feedlots hosts a fairly high species richness of native grasses, shrubs and geophytes. This area is situated outside of the development plan and no disturbance related activity is expected to occur within this area.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name		Parys gazette	
Date published		09 December 2021	
Site notice position	#	**Latitude**	**Longitude**
	Notice 1	26°50'55.5"S	27°38'38.7"E
	Notice 2	26°51'08.2"S	27°38'37.8"E
	Notice 3	26°53'24.2"S	27°37'44.2"E
Date placed	18 November 2021		

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 326

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 326

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Please refer to the Public Participation Report (PPR).		

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
No issues have been raised as of yet. If any such issues arise, the final BAR will be updated.	

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR 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 the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

*** Refer to the PPR for a full list of all I&APs and relevant Authorities.

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Department of Water & Sanitation	Mr. Vernon Blair Deputy Director: Water Use	051 405 9000 082 807 3552		BlairV@dws.gov.za, NelG@dws,gov.za	Bloem Plaza 2nd Floor c/o Charlotte Maxeke & East Burger Streets, Bloemfontein, 9300
Free State Department of Public Works and Infrastructure	Mr M Mohlahlo	051 492 3915		hodoffice@fsworks.gov.za – kgabalem@fsworks.gov.za	Room 146, OR Tambo House Cnr St, Andrews and Markgraaf Streets Bloemfontein 9300
Department of Agriculture and Rural Development	Mr. Thabethe	051 861 8509		pa.hodagric@fs.agric.za schultzjg@gmail.com	Gielie Joubert Street, Glen, Bloemfontein, 9360
Department of Rural Development & Land Reform	Mr. M Kelly	051 400 4200 / 071 674 4089		mbulelo.kelly@drdlr.gov.za	136 Charlotte Maxeke Street, Bloemfontein, 9300
SAHRIS					
Fezile Dabi District Municipality	Ms. LM Molibeli	016 970 8600		info@feziledabi.gov.za / pebellol@fesiledabi.gov.za	John Vorster Road, P.O Box 10, Sasolburg, 1947
Ngwathe Local Municipality	Mr. Bruce W Kannemeyer	056 806 5901 / 056 811 2131 / 081 033 9636		jordaanr@ngwathe.co.za / mm@ngwathe.co.za	Liebenbergstrek, Parys, 9585
Ngwathe Local Municipality Ward 6 Councilor	Mr. Magashule Malebo	079 381 2164 Number does not exist			Liebenbergstrek, Parys, 9585

Ngwathe Local Municipality Executive Mayor	Mrs. Joey Mochela	071 878 6571		magautal@ngwathe.co.za	Liebenbergstrek, Parys, 9585
Ngwathe Local Municipality Environmental Department	Mrs P Nhlapo	056 817 6890 / 073 306 6121		ppnhlapo53@gmail.com	Liebenbergstrek, Parys, 9585

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) 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. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 as amended 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. 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

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts 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. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
		Flora and Fauna	
Clearance of vegetation	***Direct impacts:***	Low- Moderate	• Development should be contained within the boundary of the site. • Vegetation removal should be kept to a minimum. • Construction area should be demarcated to prevent unauthorised entry. • Topsoil should be stockpiled and kept clean of exotic species. • Adhere to the environmental management plan. • No removal of protected species
	Indirect impacts:	Low	
	Cumulative impacts:	Low	
Land transformation – Veldfire	***Direct impacts:***	Low- Moderate	• The Developer will ensure that firefighting equipment is available onsite in the event that an accidental fire should break out. • No open fires on the construction site may be allowed. • Fire risk construction activities should be carefully conducted and monitored. Appropriate measures should be implemented to minimise fire risk.
	Indirect impacts:	Low	

Activity	Impact summary	Significance	Proposed mitigation
	Cumulative impacts:	Low	
Hunting and gathering of Fauna	***Direct impacts:***	Low-Moderate	• No hunting or trapping of animals may be permitted. • No natural occurring fauna may be unnecessarily removed. • Animals should be removed from the site by a qualified individual. No killing of any animal should be allowed.
	Indirect impacts:	Low	
	Cumulative impacts:	Low	
Loss of habitat and species diversity	***Direct impacts:***	Low	• Construction should be limited to as few areas as possible simultaneously. • Rehabilitation of post-construction open spaces should occur. • No disturbance activities should encroach outside of the development site.
	Indirect impacts:	Low	
	Cumulative impacts:	Low	
Heritage			
Artefacts, Fossils and historically significant resources	***Direct impacts:***	Low	• It is not foreseen that any adverse impacts will be generated on structures that carry significant heritage value. • All activities should be restricted to the developmental boundaries. • A 25 m no-go buffer zone around the two graveyards and historical building should be implemented.
	Indirect impacts:	Low	
	Cumulative impacts:	Low	
Water Resources			
Surface and ground water Quality	***Direct impacts:***	Moderate	• Surface contamination of the soil through hazardous material should be cleaned immediately and disposed off properly. • All stationary construction vehicles should be fitted with a drip tray to

Activity	Impact summary	Significance	Proposed mitigation
	Indirect impacts:	Low	prevent oil spillages. • A comprehensive stormwater management plan should be implemented. • Stormwater network should be lined with clay to prevent seepage. • Sedimentation pond should be cleaned when at 70% capacity. • Sedimentation pond and evaporation pond should be constructed with concrete as to prevent seepage. • Temporary drying/ storage area should be lined with concrete as to prevent seepage. • Stormwater network must be inspected regularly for the accumulation of debris, blockages, instabilities and erosion with continual remedial and maintenance actions. • Clean runoff should be channelled away from the feedlots and into the surrounding grassland.
	Cumulative impacts:	Low-Moderate	
Aesthetics			
Visual impact of the new feedlots	***Direct impacts:***	Low- Moderate	• It is recommended to limit the number of active construction areas to lower the overall aesthetic impact. • Rehabilitation of post-construction open spaces should be conducted. • Unattended trenches or excavations should be demarked and not be left open for more than 30 days. • Construction stockpiles should be placed on the site and preferably on disturbed areas. • Construction debris should be removed on a regular basis. • Planting indigenous trees around the feedlot to conserve the visual integrity around the site.
	Indirect impacts:	Low	
	Cumulative impacts:	Low	
Noise and Air Quality			
Generation of noise	***Direct impacts:***	Low	• No loud music at any construction sites. • Vehicles must be maintained in such a manner as to not cause excessive noise when operating them. • The speed limit will be 40km/h on all roads running through and accessing the construction area. • Construction should take place between 8;00 and 17:00.
	Indirect impacts:	Low	

Activity	Impact summary	Significance	Proposed mitigation
	Cumulative impacts:	Low	• Equipment / machinery to be used must comply with manufacturer's specifications acceptable noise levels. • Maintain a complaints and grievance register and act promptly to complaints regarding noise.
Air quality	***Direct impacts:***	Moderate	• Positioning of fly traps around the feedlot. • Application of lime on the topsoil to break down animal secretions, limiting the intensity of odour. • Monthly removal of manure from the feedlot pens. • Construction of a sprinkler system within the feedlot, which will sprinkle a water and probiotic mixture to break down manure and urine, reducing odour and limiting fly population. • Adding the probiotic mixture to the drinking water to further promote the effects thereof.
	Indirect impacts:	Moderate	
	Cumulative impacts:	Low	
Waste			
Waste generation	***Direct impacts:***	Low-Moderate	• All hazardous substances and stocks such as diesel, oils, detergents, etc., shall be stored in areas with impervious flooring such as concrete. • Drip pans and other impervious surface shall be installed in such storage areas to prevent soil and water pollution. • Residues from machinery maintenance and other sources contaminated with hazardous waste should be stored in proper containers that avoid seepage to the ground. • Adequate waste receptacles shall be made available and all waste shall be adequately stored so that it does not pose a pollution risk. General waste is to be disposed of through the municipal service. Any other waste will be disposed of through only licensed waste disposal facilities.
	Indirect impacts:	Low	
	Cumulative impacts:	Low	
No-go option			

Activity	Impact summary	Significance	Proposed mitigation
Activity will not proceed and the environment is left as it is. The impact of this project is assessed based on its contribution to the local community and promote rural development and will result in job creation, both permanent and temporary.	***Direct impacts:***	High	The No-Go alternative will impede local and national economic growth as well as limit local meat production. The ample job creation opportunities will be lost if the development is not approved. It is foreseen that the adverse effects arising from the proposed development are trumpeted by the ample positive outcomes arising from the successful authorisation hereof.
	Indirect impacts:	Moderate	
	Cumulative impacts:	Moderate	

A complete impact assessment in terms of Regulation 19(3) of GN 326 must be included as Appendix F.

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 A (preferred alternative)

The environment will be temporarily affected by the movement of construction vehicles. Before implementing mitigation measures, it is foreseen that a **Low-Medium** impact will arise before mitigation. After mitigation measures are implemented, the environmental impact during the construction phase will be reduced to a **Low impact.** Important mitigation measures recommended during this phase include but are not limited to:

- No disturbance related activity may encroach near the small hill, which is situated outside the development area (±200 m from the proposed site).
- A designated temporary construction dump area should be placed. Construction debris in this area should be regularly removed.
- Construction should finish as soon as possible.
- No disturbance related activities may encroach near gravesites or any significant heritage structures.

The EAP's opinion is that the operational phase will generate a slightly higher environmental impact prior to mitigation compared to the construction phase. However, when adequate mitigation measures are implemented, such as those listed in the BAR, the operational environmental impact will be reduced to such an extent that the benefits generated by the facility's operation far outweighs the insignificant impacts that may arise. Important mitigation measures recommended during this phase include but are not limited to:

- Implementation of a comprehensive stormwater management network lined by an impenetrable material.
- Clean stormwater runoff should be channelled away from the feedlot area using bunds, culverts or drains.
- Regular inspection of the stormwater network for faults.
- The sedimentation pond should be cleaned when it reaches 70% capacity.
- The stormwater network should channel all surface runoff from the feedlots into the two-pond system.
- Feedlots should be cleaned each month, and the manure transported to the temporary drying/ storage area.
- Applying a probiotic sprinkler system to introduce beneficial bacteria that will accelerate the organic compound breakdown and limit the fly population.
- Positioning of fly traps.
- Planting native trees around the feedlots.
- Introducing composting bacteria in the manure stockpiles to further accelerate organic compound breakdown, ultimately reducing odour production.

It is not foreseen that any significant environmental impacts will arise from the proposed development on the condition that all appropriate mitigation measures are implemented to the fullest capacity.

Alternative B

As previously indicated, the preferred alternative was finalised following consultation with the applicant and after the various specialist's inputs. Therefore, no other alternatives have been identified, seeing that the proposed development's placement and operational details were guided with the aid of specialist inputs prior to submitting the BAR.

Alternative C

N/A

No-go alternative (compulsory)

The no-go option will result in the non-construction of the proposed development. The proposed site currently serves a minimal ecological function and is considered degraded. The proposed development will provide employment opportunities to the local community and contribute to food security within the Free State Province. Should the development not be authorised, opportunities will be lost, and the site will remain in its current degraded condition.

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	~~NO~~

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).

N/A

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.

The contents of this report have sought to identify and assess key issues relating to the proposed construction of the sheep feedlot and the expansion of a cattle feedlot.

In consolidation thereof, no fatal environmental flaws were identified to be associated with the proposed development. The majority of identified impacts were of a medium to low significance and can be suitably mitigated to acceptable levels, provided that all specifications stipulated in the EMP are followed.

Thus, the opinion of the EAP is supported by the findings of specialist inputs that the proposed development, with the guidance of the EMP, be authorised.

The following mitigation measures are highlighted:

- Implementation of a comprehensive stormwater management network lined by an impenetrable material.
- Clean stormwater runoff should be channelled away from the feedlot area using bunds, culverts or drains.
- Regular inspection of the stormwater network for faults.
- The sedimentation pond should be cleaned when it reaches 70% capacity.
- The stormwater network should channel all surface runoff from the feedlots into the two-pond system.
- Feedlots should be cleaned each month, and the manure transported to the temporary drying/ storage area.
- Applying a probiotic sprinkler system to introduce beneficial bacteria that will accelerate the organic compound breakdown and limit the fly population.
- Positioning of fly traps.
- Planting native trees around the feedlots.
- Introducing composting bacteria in the manure stockpiles to further accelerate organic compound breakdown, ultimately reducing odour production.
- No open fires will be allowed on-site.
- Vegetation clearance should be restricted to the development footprint.
- Wildlife should always be preserved. No snakes may be killed, and a qualified individual should be contacted for translocation.

Is an EMPr attached?	YES	~~NO~~

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Sampie van Rooyen

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

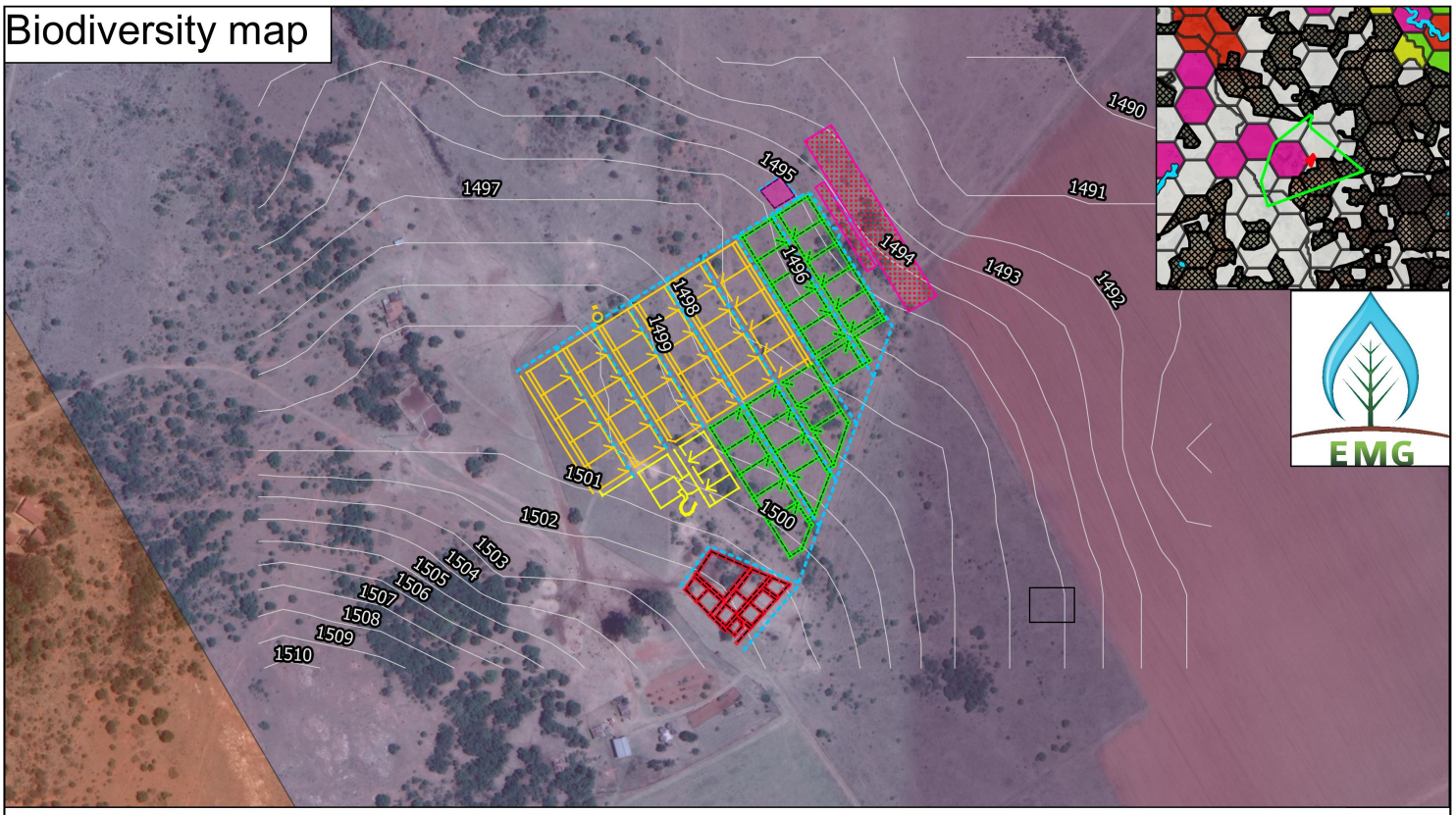
Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information

Appendix A: Maps

Biodiversity map

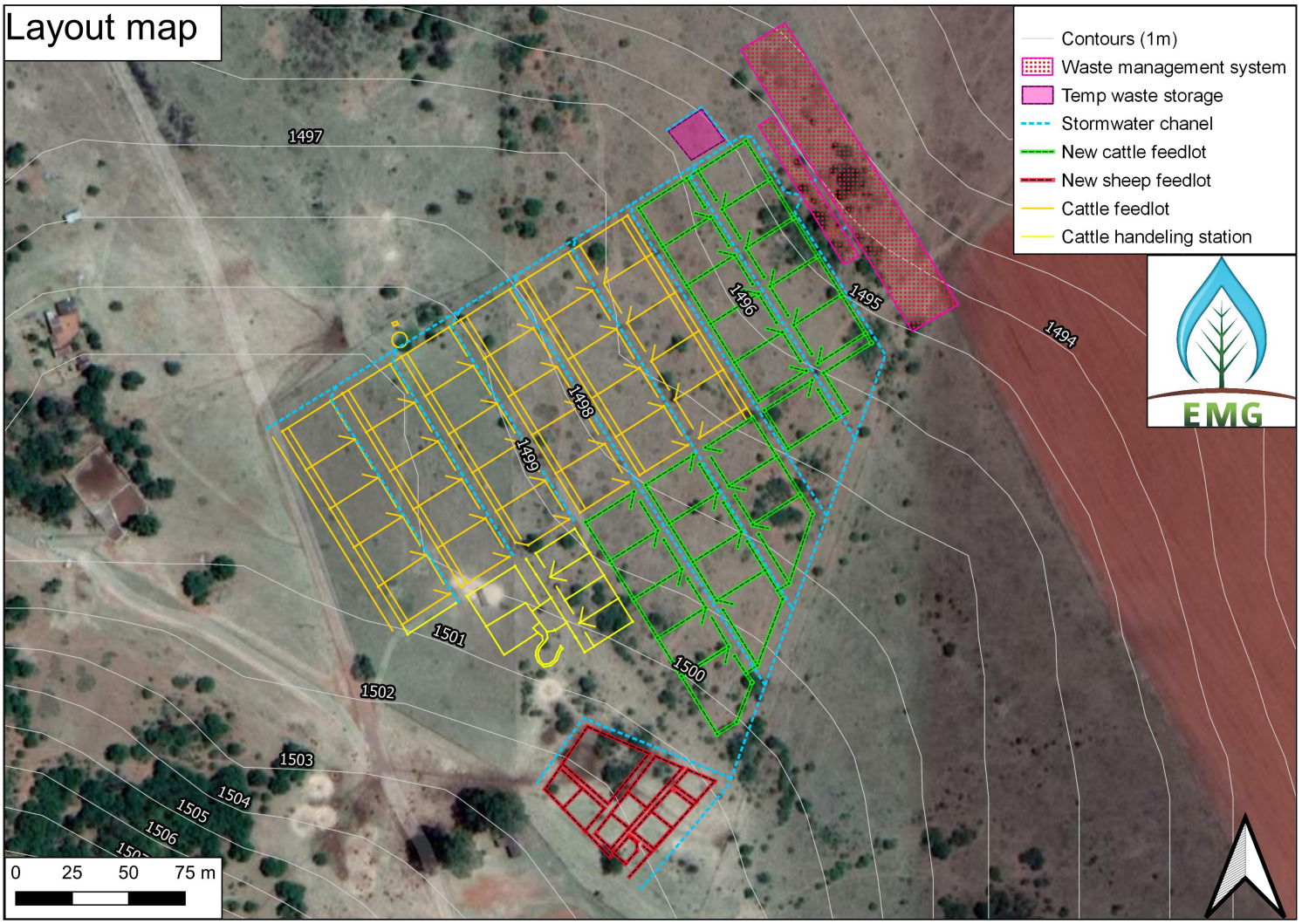


Scale- 1: 5000
Locality:
26° 54' 1.78" S 27° 37' 55.26" E

0 50 100 150 m

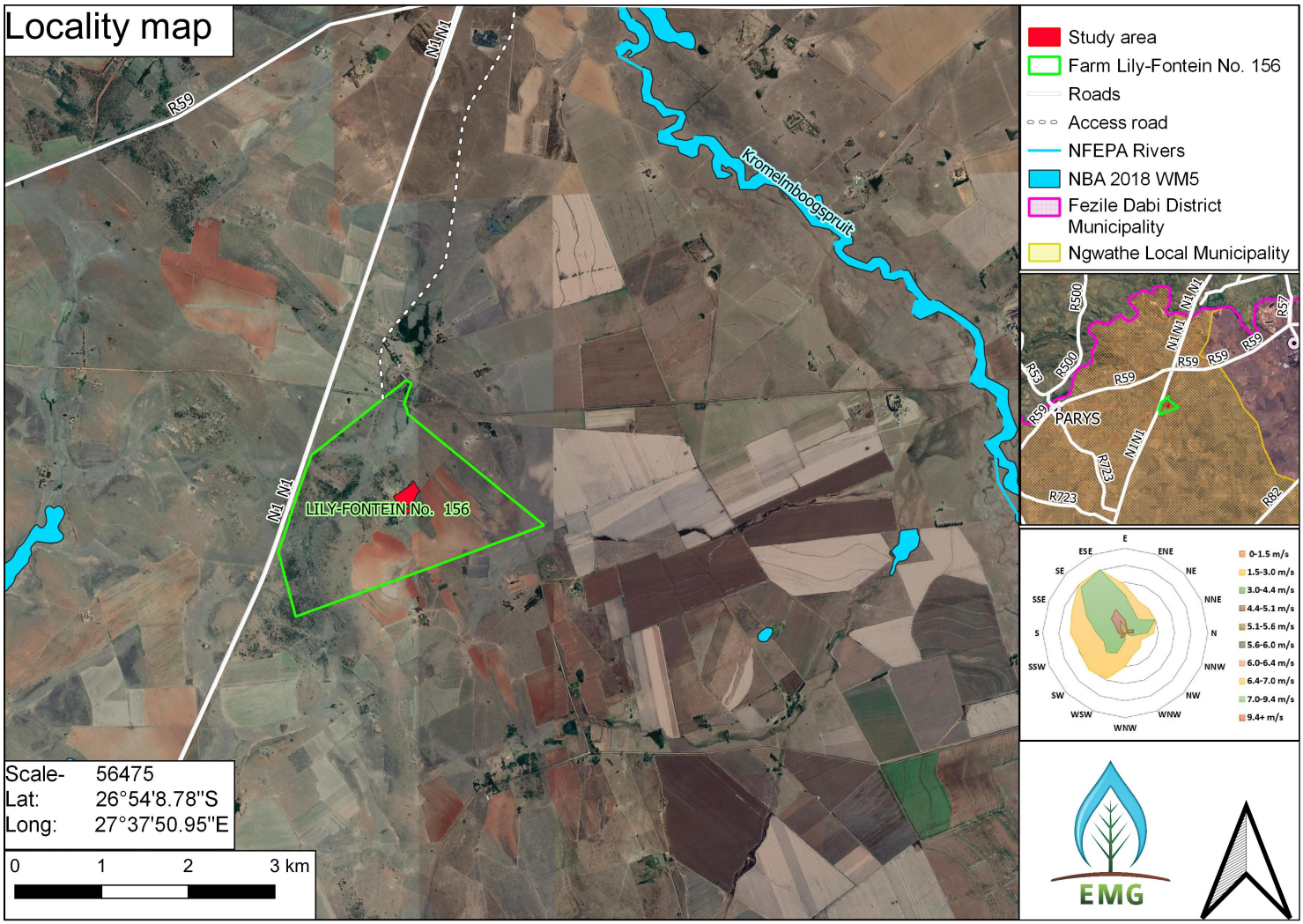
- Existing cattle feedlot
- Existing handeling station
- Waste management system
- Temporary manure storage
- Stormwater chanel
- New cattle feedlot
- New sheep feedlot
- Study area
- Farm Lily-Fontein No. 156
- Contours
- NFEPA rivers
- NBA 2018 wetlands
- Soweto Higveld Grassland Gm8
- Vredefort Dome Granite Grassland Gh11
- CBA1
- CBA2
- Degraded
- ESA1
- ESA2
- Other
- Protected

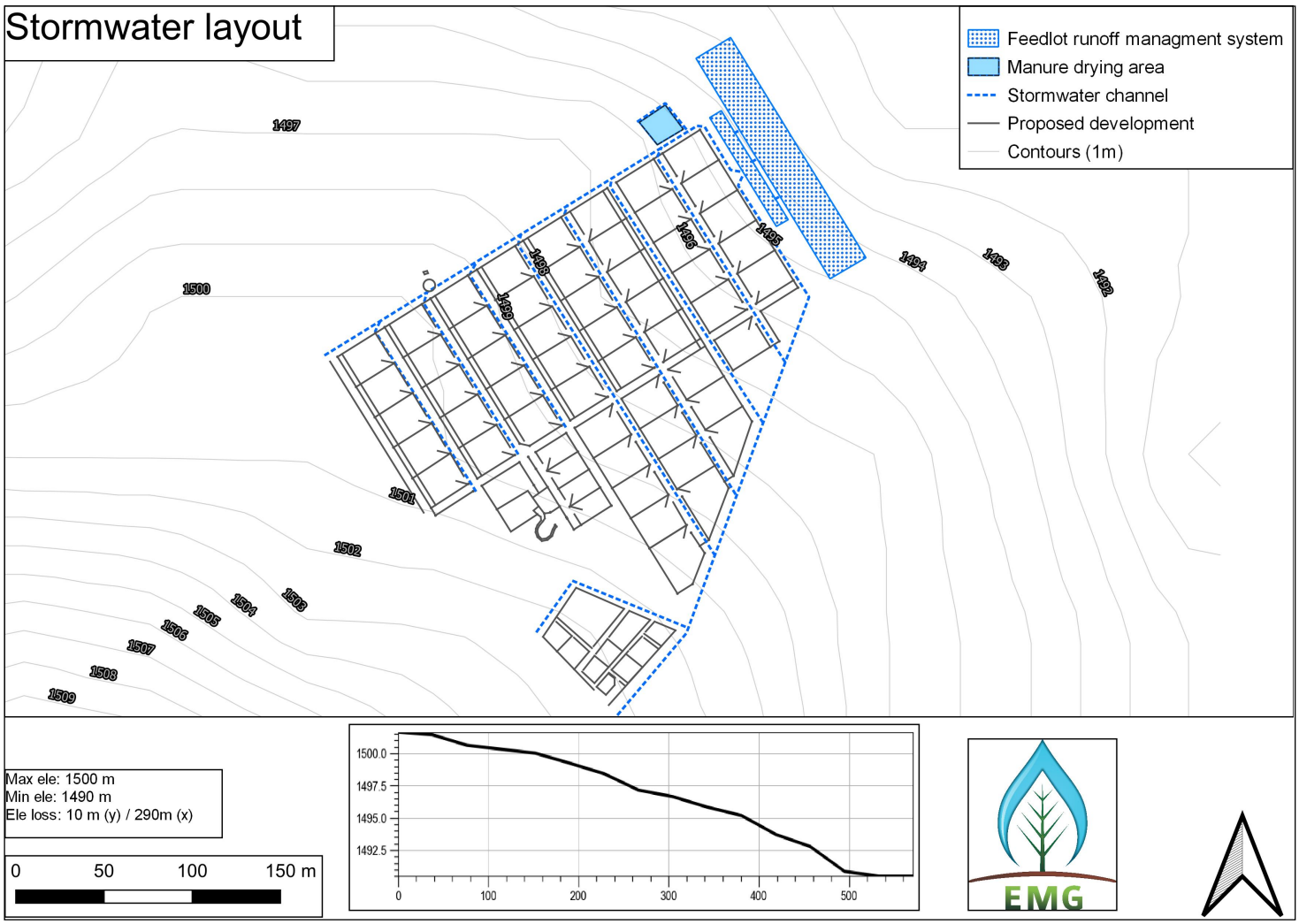
Layout map



- Contours (1m)
- Waste management system
- Temp waste storage
- Stormwater chanel
- New cattle feedlot
- New sheep feedlot
- Cattle feedlot
- Cattle handeling station

0 25 50 75 m


Locality map
R59
N1 N1
Kromelmboogspruit
LILY-FONTEIN No. 156
Study area
Farm Lily-Fontein No. 156
Roads
Access road
NFEPA Rivers
NBA 2018 WM5
Fezile Dabi District Municipality
Ngwathe Local Municipality
R500
R57
R53
PARYS
R723
R82
E
ENE
NE
NNE
N
NNW
NW
WNW
WNW
WSW
SW
SSW
S
SSE
SE
ESE
0-1.5 m/s
1.5-3.0 m/s
3.0-4.4 m/s
4.4-5.1 m/s
5.1-5.6 m/s
5.6-6.0 m/s
6.0-6.4 m/s
6.4-7.0 m/s
7.0-9.4 m/s
9.4+ m/s
Scale- 56475
Lat: 26°54'8.78"S
Long: 27°37'50.95"E
0 1 2 3 km
EMG


Stormwater layout
Feedlot runoff managment system
Manure drying area
Stormwater channel
Proposed development
Contours (1m)
1497
1500
1501
1502
1503
1504
1505
1506
1507
1508
1509
1499
1498
1496
1495
1494
1493
1492
Max ele: 1500 m
Min ele: 1490 m
Ele loss: 10 m (y) / 290m (x)
0 50 100 150 m
1500.0
1497.5
1495.0
1492.5
0
100
200
300
400
500
EMG

Appendix B: Photographs

Figure 1 View of the overall disturbed environmental conditions. The existing cattle feedlots and cattle handling station is visible in the background. Northern orientation

Figure 2 View of the existing cattle handling station. The old cultivated fields are visible in the background. North-eastern orientation. Note the short grass profile and numerous barren patches caused by overgrazing.

Figure 3 Aerial view of the old cultivated fields and the overall degraded habitat conditions. Note the numerous barren patches. Eastern orientation.

Figure 4 View of the old cultivated fields and the overall poor herbaceous ground cover. South-Eastern orientation.

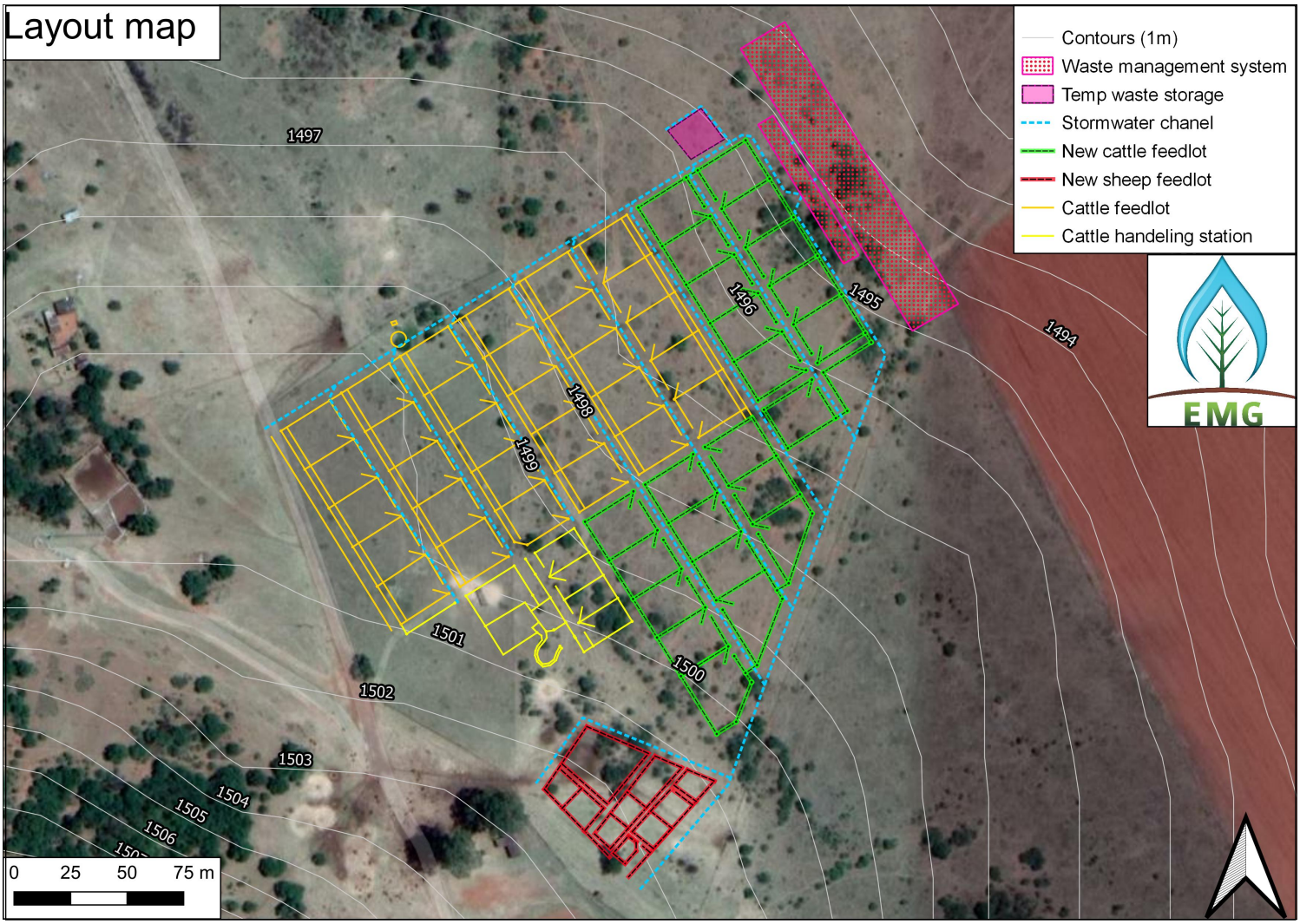
Figure 5 Aerial view of the old cultivated fields, medium-tall shrub dominated hill, and the small goat pens which are located on the site. Southern orientation.

Figure 6 View of the medium-tall shrub dominated hill. One of the two grave sites is located beneath the two sweet thorn trees circled in red. Note the short grass profile and barren patches caused by overgrazing and frequent vehicle movement. South-Western orientation.

Figure 7 view of the old cattle handling station with scattered medium-tall trees scattered around the handling station. Note the overall low grass profile due to overgrazing and frequent vehicle movement. Western orientation.

Figure 8 View of the degraded habitat conditions located on site. Degradation caused by the proliferation of exotic plant species, overgrazing and frequent vehicle movement. North-Western orientation.

Appendix C: Facility Illustration(s)


Layout map
Contours (1m)
Waste management system
Temp waste storage
Stormwater chanel
New cattle feedlot
New sheep feedlot
Cattle feedlot
Cattle handeling station
EMG
1497
1496
1495
1494
1498
1499
1501
1500
1502
1503
1504
1505
1506
0 25 50 75 m

Appendix D: Specialist Reports

ENVIRONMENTAL MANAGEMENT GROUP

Specialists in Environmental Management
Integrating Industry and Infrastructure with the Environment

Tel: +27 51 412 6350
Fax: +27 51 412 6351
Email: ckruger@envmgp.com
Postal Address:
P.O.Box 37473,
Langenhoven Park 9330

January 2022

SCREENING REPORT ANALYSIS AND MOTIVATION OF SPECIALIST STUDIES.

Sweet Home Farms (PTY) Ltd – Farm Lily-Fontein no.156

Ngwathe Local Municipality, Free State Province

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Email: ckruger@envmgp.com
Postal Address:
P.O.Box 37473,
Langenhoven Park 9330

1. Motivation to support or reject the inclusion of certain specialist assessments:

The Department of Forestry, Fisheries and the Environment's (DFFE) screening tool is a web-based tool that identifies broad-scale environmental sensitivities related to a specific development. Environmental sensitivities and assessments required, identified through the screening tool, is biased towards the availability of detailed environmental data. In some instances, the lack of adequate background environmental data might result in a wrongful assessment requirement. Therefore, it remains the responsibility of the EAP, developer and the appointed specialists to support the inclusion or exclusion of specific assessments.

The following assessments and sensitivities were drafted based on the DFFE screening tool's recommendation. This document aims to provide evidence to either support or reject the inclusion of specific assessments as recommended by the online screening tool programme.

1.1. Landscape/Visual Impact Assessment Report

The proposed site will be located on farm Lily-Fontein no. 156, which is situated in an area zoned for agriculture. Furthermore, the expansion and new development of cattle and sheep feedlots will connect to the existing feedlots located on the site. The new feedlots will also be placed on degraded farmland caused by overgrazing. It is of the EAP's opinion that this specialist assessment will **NOT** be required as no landscape or visual aspects worth protecting remains on-site, consequently eliminating the need for such an investigation.

1.2. Archaeological and Cultural Heritage Impact Assessment Report

A specialist report was already conducted.

1.3. Palaeontology Impact Assessment Report

A specialist report was already conducted.

1.4. Terrestrial Biodiversity Impact Assessment Report

The proposed site was selected due to the overall low biodiversity value identified by a relevant specialist. The site's vegetative component is severely degraded due to overgrazing, soil erosion, soil compaction, and the proliferation of exotic plant species. The overall degraded condition has severely hampered ecological integrity and consequently lowered biodiversity. No sensitive plant and animal species were recorded during the site visit. The new development will occur in an area with no natural

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elements worth conserving. Therefore, the EAP does **NOT** foresee the necessity to undertake a Terrestrial Biodiversity Impact Assessment.

Aquatic Biodiversity Impact Assessment Report

The closest water body to the proposed development is a small stream (± 5 m wide) situated approximately 500 m northwest across an uphill topography. The mentioned stream will not be subject to any harmful environmental impacts due to the proposed development's position and relative elevation to the watercourse.

The EAP's professional opinion is that an aquatic biodiversity impact assessment will **NOT** be required as sufficient distance and elevation exists between the proposed development and the nearest water body to produce no harmful impacts.

1.5. Socio-Economic Assessment Report

The development will have a massive positive impact on the local community. Thus, the EAP does **NOT** foresee that any Socio-Economic assessment is necessary to identify information that we already have.

1.6. Plant Species Assessment Report

The site is heavily degraded with the majority of plant species either being alien vegetation, primary grasses or barren land. No species of particular conservation concern were identified during the site visit.

It is of the EAP’s opinion that this specialist studies will **NOT** be required as no species of particular conservation concern will be encountered in the proposed development area.

1.7. Animal Species Assessment Report.

As previously indicated, the site's vegetative component and consequently habitat for animals is severely degraded. No animal species of particular conservation concern were identified on-site, and considering the degraded environmental conditions, it is highly unlikely that any such species will occur. Furthermore, little evidence was observed that would indicate a thriving faunal community.

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Postal Address:
P.O.Box 37473,
Langenhoven Park 9330

It is of the EAP's opinion that this specialist study will **NOT** be required as the likelihood of encountering any significant animal species are low to none, due to the heavily degraded nature of the proposed development area.

Phase 1 Heritage Impact Assessment for a proposed new Cattle Feedlot on the farm Lilyfontein 156 near Parys, Free State Province.

Report prepared by

Palaeo Field Services, PO Box 38806 Langenhovenpark 9330.

January 2022

Introduction

The application relates to a 1.5 ha area designated for the development of a new cattle feedlot near Parys, Free State Province (**Fig. 1**). The site lies about 2.8 km due east of the N1 national road, and is situated on low topography terrain on the farm Lilyfontein 156 (**Fig. 2**).

Map Ref.: 1:50 000 topographical map 2627 DC Weiveld

1:250 000 geological map 2626 Wes Rand

Site Coordinates (**Fig. 2**):

A) 26°53'57.90"S 27°37'54.49"E
B) 26°53'56.95"S 27°37'56.10"E
C) 26°53'59.78"S 27°37'58.20"E
D) 26°54'2.17"S 27°37'57.24"E
E) 26°54'5.45"S 27°37'55.77"E
F) 26°54'2.38"S 27°37'53.60"E
G) 26°54'0.71"S 27°37'56.32"E

The heritage significance of the affected area was evaluated on the basis of existing field data, database information and published literature. This was followed by a field assessment by means of a pedestrian survey. A Garmin Etrex Vista GPS hand model (set to the WGS 84 map datum) and a digital camera were used for recording purposes. Maps and aerial photographs (incl. Google Earth) were consulted and integrated with data acquired during the on-site inspection. Site significance classification prescribed by SAHRA (2005) were used to indicate overall significance and mitigation procedures where relevant (**Table 1**).

Background

The site is situated on the eastern edge of the 80-90-km-wide Vredefort Dome, a World Heritage Site, which represents the central portion of a 2.02 Ga year old, deeply eroded and complex impact structure that formed in Archaean and Palaeoproterozoic rocks of the Kaapvaal craton (Reczko et al. 1995; Gibson and Reimold 2001) (**Fig. 4 & 5**). Plentiful signs of Stone Age human occupation are visible on the landscape in and around the Vredefort

Dome World Heritage Site. Early to Middle Stone Age artifacts are derived from the Vaal gravels between Vereeniging and and include an abundance of Acheulian (Early Stone Age) hand axes, cleavers and core-axes, primarily made from quartzite (Sohnge *et al.* 1937; Cooke 1949). Late Iron Age stonewalled settlements built by Sotho-Tswana speakers also form part of the rich cultural heritage of the Vredefort Dome from 1400 to 1800 AD (eg. Askoppies and Buffelskloof) (Maggs 1976; Pelser 2004; Nkhasi-Lesaoana 2008) (**Fig. 6**). European settlement occurred from 1836 (Voortrekkers), while establishment of the Boer republics and the discovery of diamonds and gold further contributed to the distinctive historical character of the region. There are plentiful rock art sites with engravings mostly recorded on late Vaalian diabase and Mesozoic dolerites in the Lower Vaal River Basin, including the area around Parys (van Riet Lowe 1941). There is currently no record of engraving sites in the immediate vicinity of the study area.

Field Assessment

2.9 Ga year old, Witwatersrand Supergroup rocks, consisting of marine orthoquarlzites, siltstones and ferruginous shales that are preserved in the lower Hospital Hill Subgroup (*Rh*) of the West Rand Group (McCarthy 2006) underlie the study area (**Fig. 5 & 7**). The site itself is mantled by a dark-brown gravelly residual soil, degraded by previous (modern) farming activities, where no *in situ* Stone Age archaeological material, capped or distributed as surface scatters on the landscape, were observed (**Fig. 8**). There are also no indications of rock art (engravings), prehistoric structures, graves or historically significant buildings older than 60 years within the boundaries of the proposed footprint area. Two small cemeteries, a historical building and complex of traditionally constructed huts were recorded during the survey, but will not be impacted by the proposed development (**Fig. 9 & 10**).

Feature Coordinates:

Cemetery 1: 26°54'10.60"S 27°37'50.69"E

Cemetery 2: 26°54'3.09"S 27°37'47.42"E

Historical building: 26°54'6.91"S 27°37'52.39"E

Traditionally constructed huts: 26°54'9.66"S 27°37'52.46"E

Impact Statement & Recommendation

Impact on palaeontological, archaeological or historically significant remains within development footprint is considered very low to non-existent (**Fig. 11**). It is recommended that the planned development is exempt from further palaeontological investigation. Also, the proposed development footprint is assigned a rating of Generally Protected C (GP.C) (**Table 1**). As far as the palaeontological and archaeological heritage is concerned, the proposed development may proceed provided that

- all activities are restricted to within the boundaries of the development footprint
- and that, as a precautionary measure, a 25 m no-go buffer zone for vehicles are placed around the historical building and two graveyards for the duration of the

construction phase.

References

Cooke, H.B.S. 1949. Fossil mammals of the Vaal River Gravels. *Geological Survey. Memoir 35 (3*), pp 1 – 109.

Gibson RL, Reimold WU 2001. The Vredefort Impact Structure, South Africa. Council for Geoscience, Pretoria, Memoir 92: 111 pp.

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McCarthy T.S. 2006. The Witwatersrand Supergroup. **In:** M.R. Johnson et. al. (eds). *The Geology of South Africa*. Geological Society of South Africa.

Pelser A. 2004. Askoppies: A Late Iron Age Tswana Site on the edge of the Vredefort Dome. *The Digging Stick*, 21(3): 16- 18.

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Reczko et al. 1995. A re-evaluation of the early Proterozoic Pretoria Group (Kaapvaal Craton) and a hypothesis on basin development. *Journal of African Earth Sciences* 21: 505-519.

Sohnge, P.G. *et al*. 1937. *The geology and archaeology of the Vaal River Basin*. Memoir no. 35. Department of Mines, Geological Survey.

Van Riet Lowe, C. 1941. *Prehistoric art in South Africa.* Archaeological Series No. 5. Dept. of the Interior. Pretoria.

DECLARATION OF INDEPENDENCE

I, Lloyd Rossouw, declare that I act as an independent specialist consultant. I do not have or will not have any financial interest in the undertaking of the activity other than remuneration for work as stipulated in the terms of reference and have no interest in secondary or downstream developments as a result of the authorization of this project.

Tables & Figures

Table 1. Archaeological field rating categories as prescribed by SAHRA.

Field Rating	**Grade**	**Significance**	**Mitigation**
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

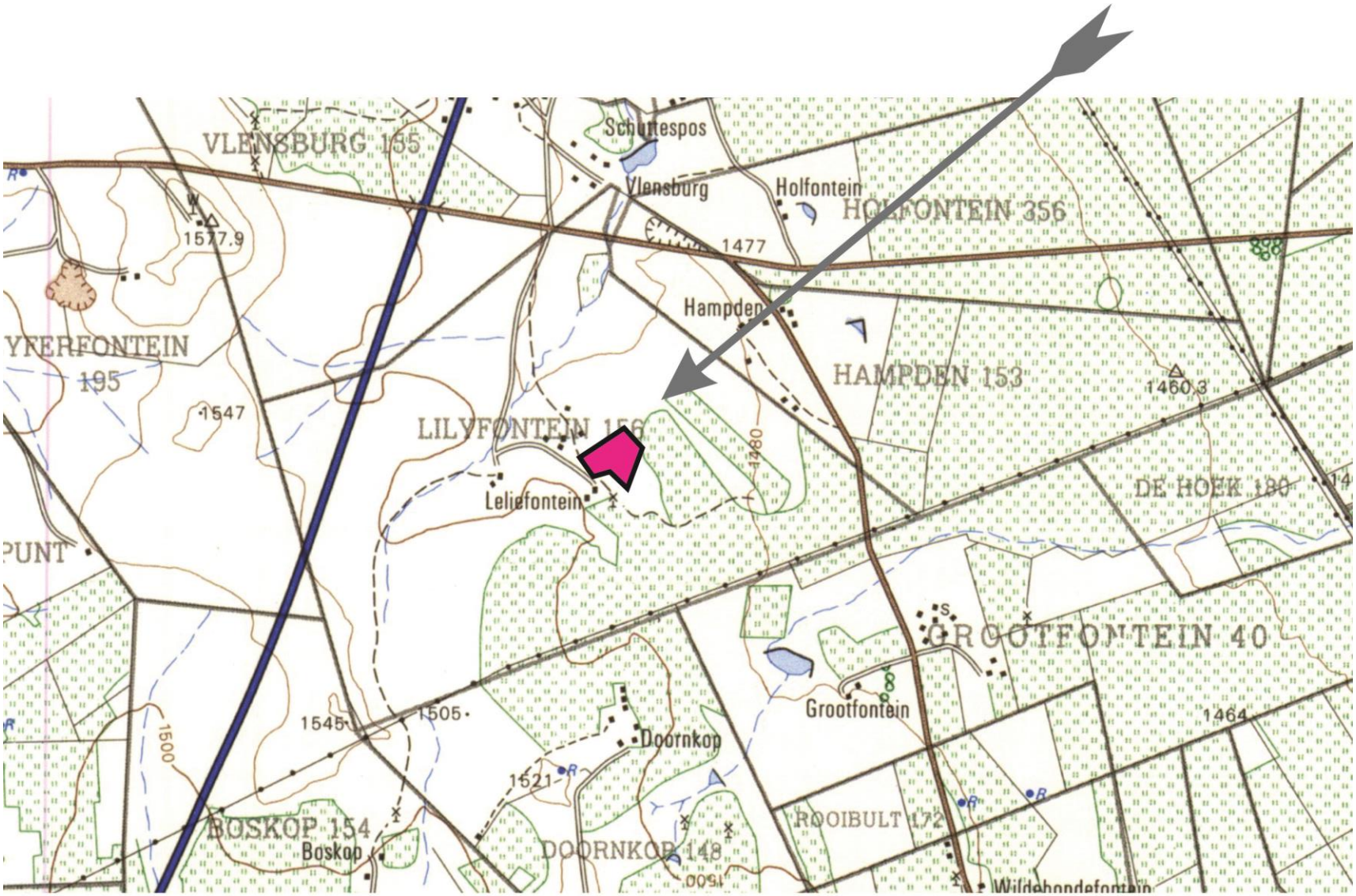


Figure 1. Map of the proposed new feedlot area on farm Lilyfontein 156 (portion of 1:50 000 scale topographic 2627 DC Weiveld).

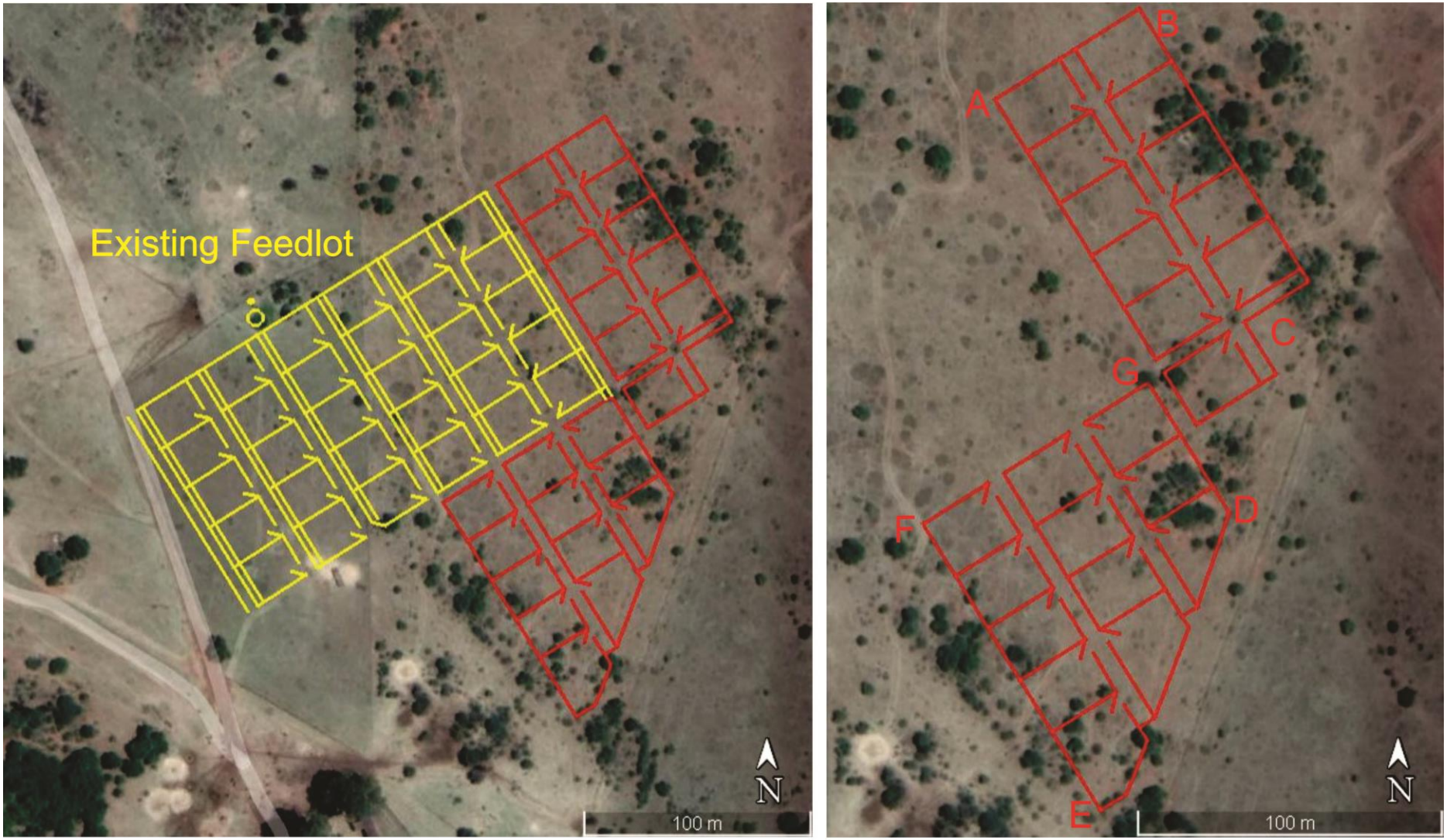


Figure 2. Aerial view of the proposed development footprint (red area). area.

Figure 3. General view of the veld.

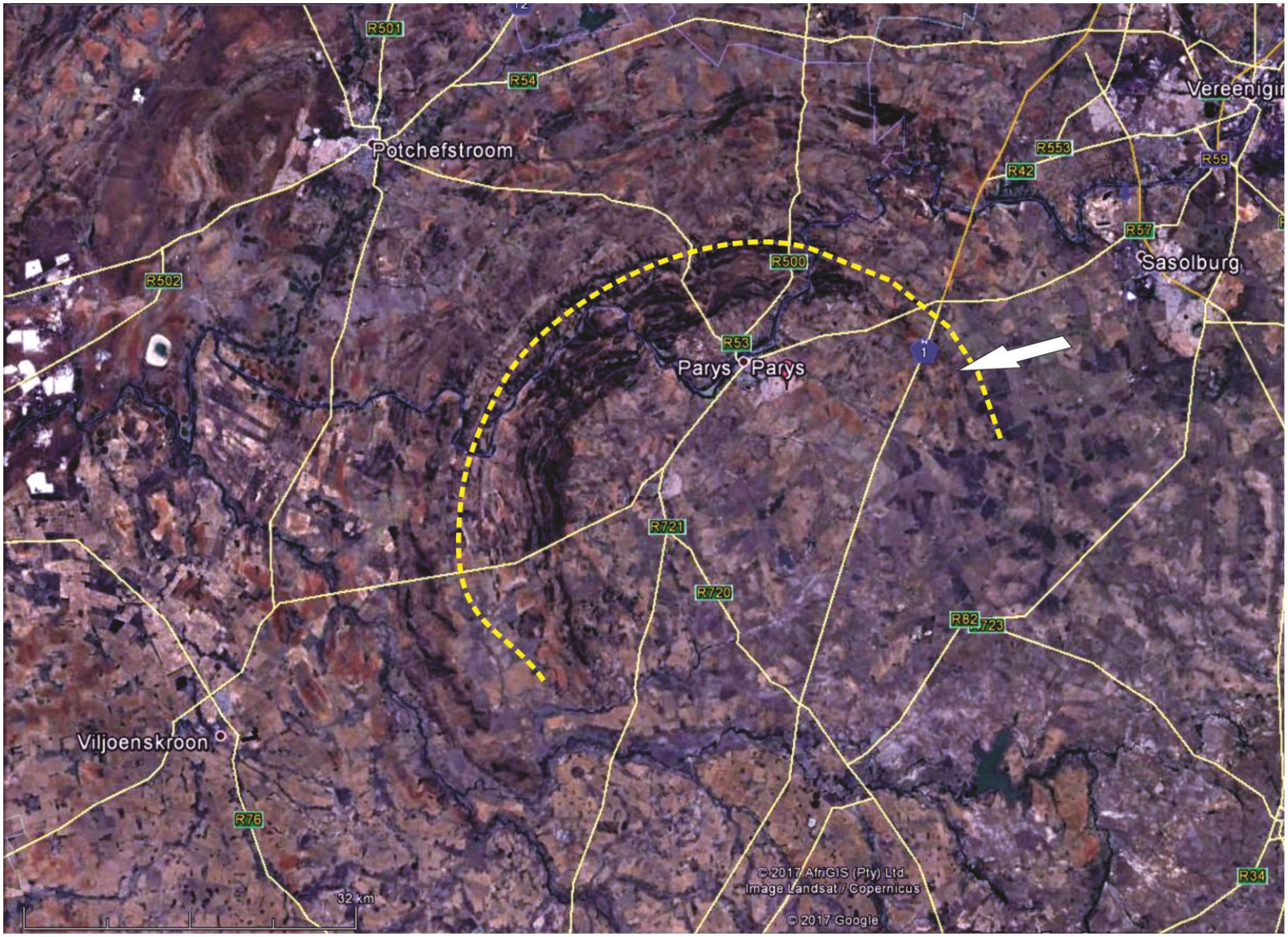


Figure 4. Aerial view of the central portion of Vredefort Dome impact structure. White arrow = position of study area

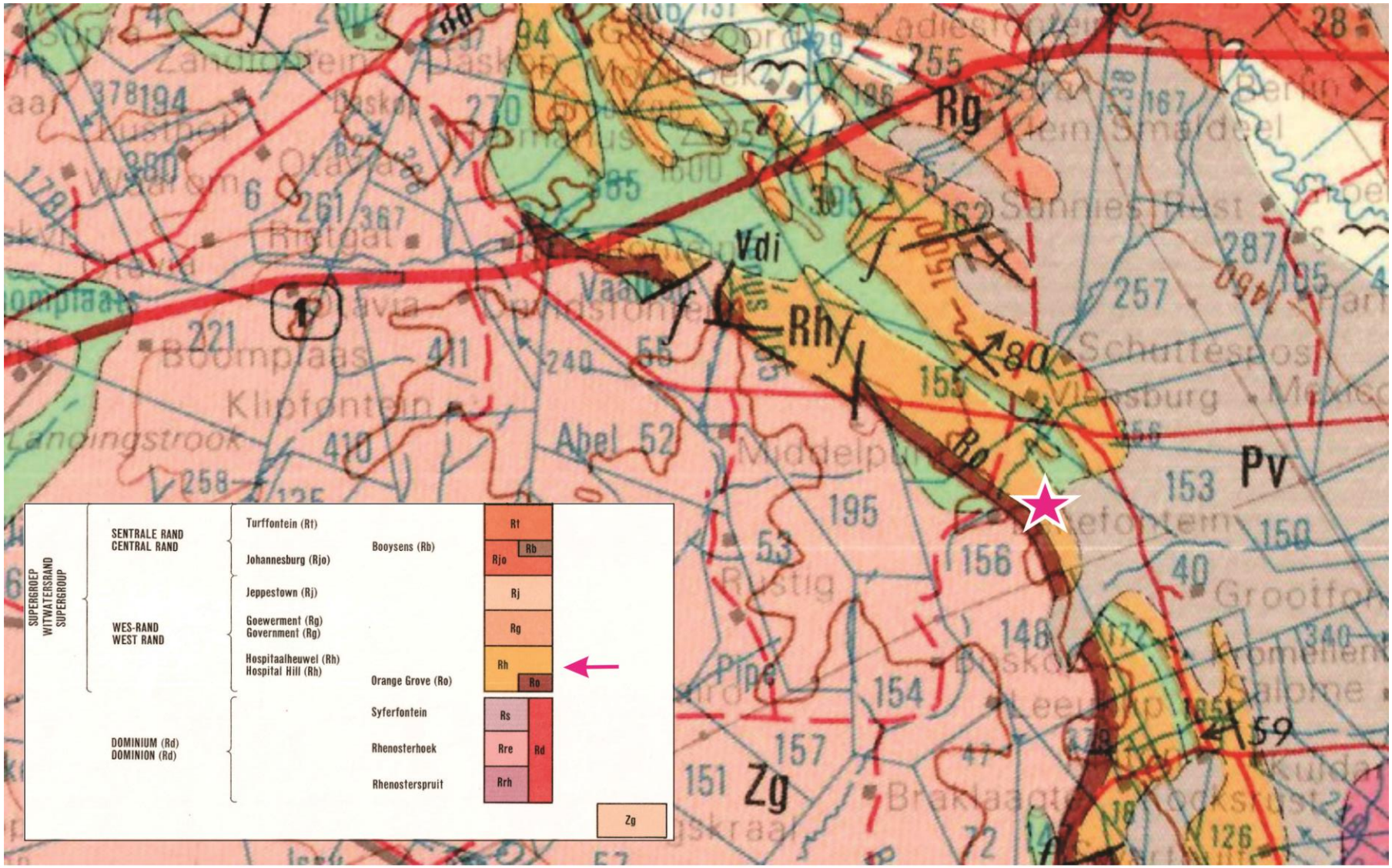


Figure 5. The site (star) marked on portion of 1:250 000 scale geological map 2626 Wes Rand is underlain by undifferentiated Archaean and Palaeoproterozoic rocks (granites and gneiss, *Zg*).

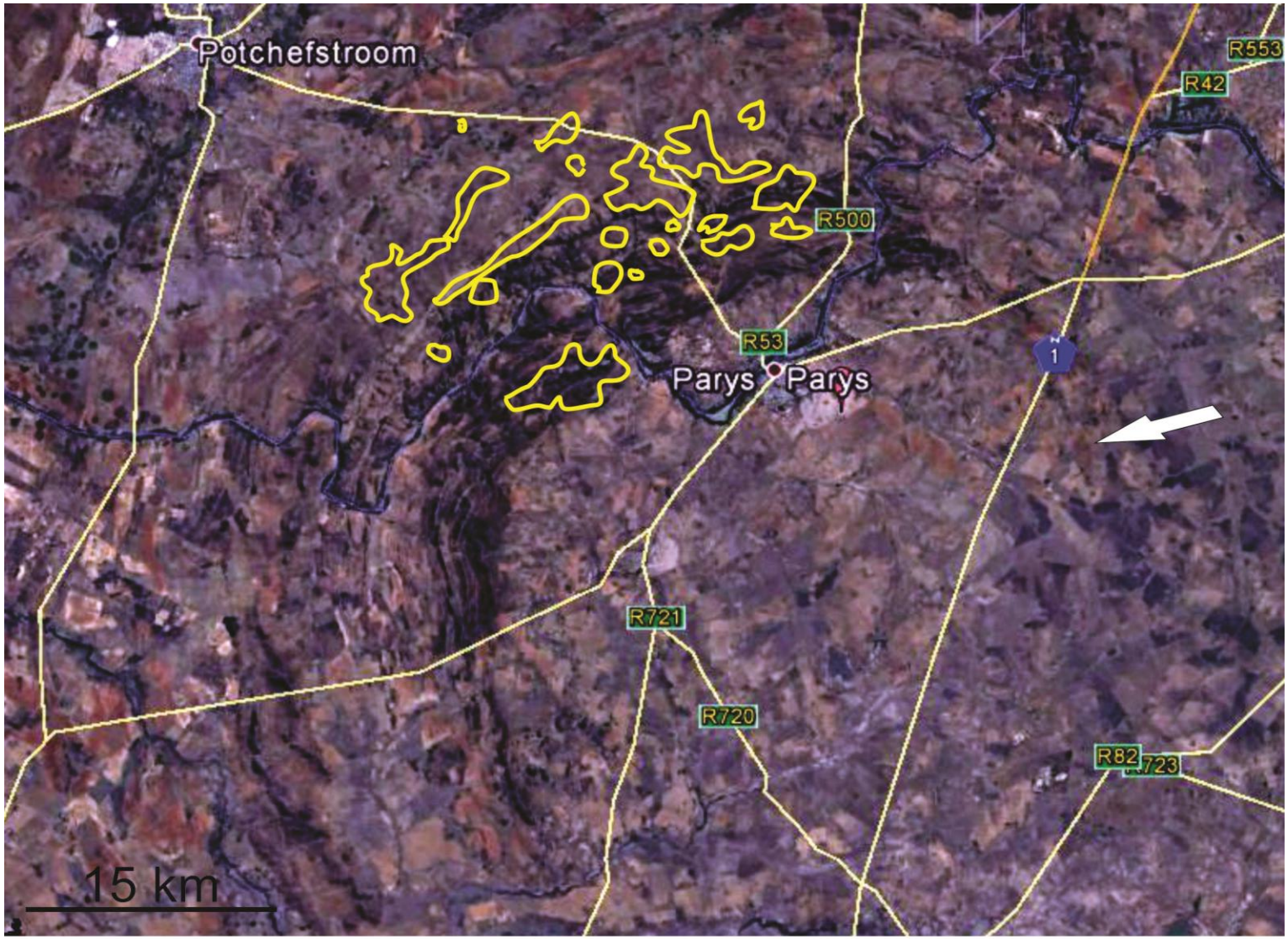


Figure 6. Distribution of Late Iron Age stone-walled settlements (yellow polygons) built by Sotho-Tswana speakers. White arrow = position of study area

Figure 7. Outcrop of clastic sediments showing bedded layers of quartzitic sandstone (below).

Figure 8. General view of the study area, looking towards the existing cattle feedlot.

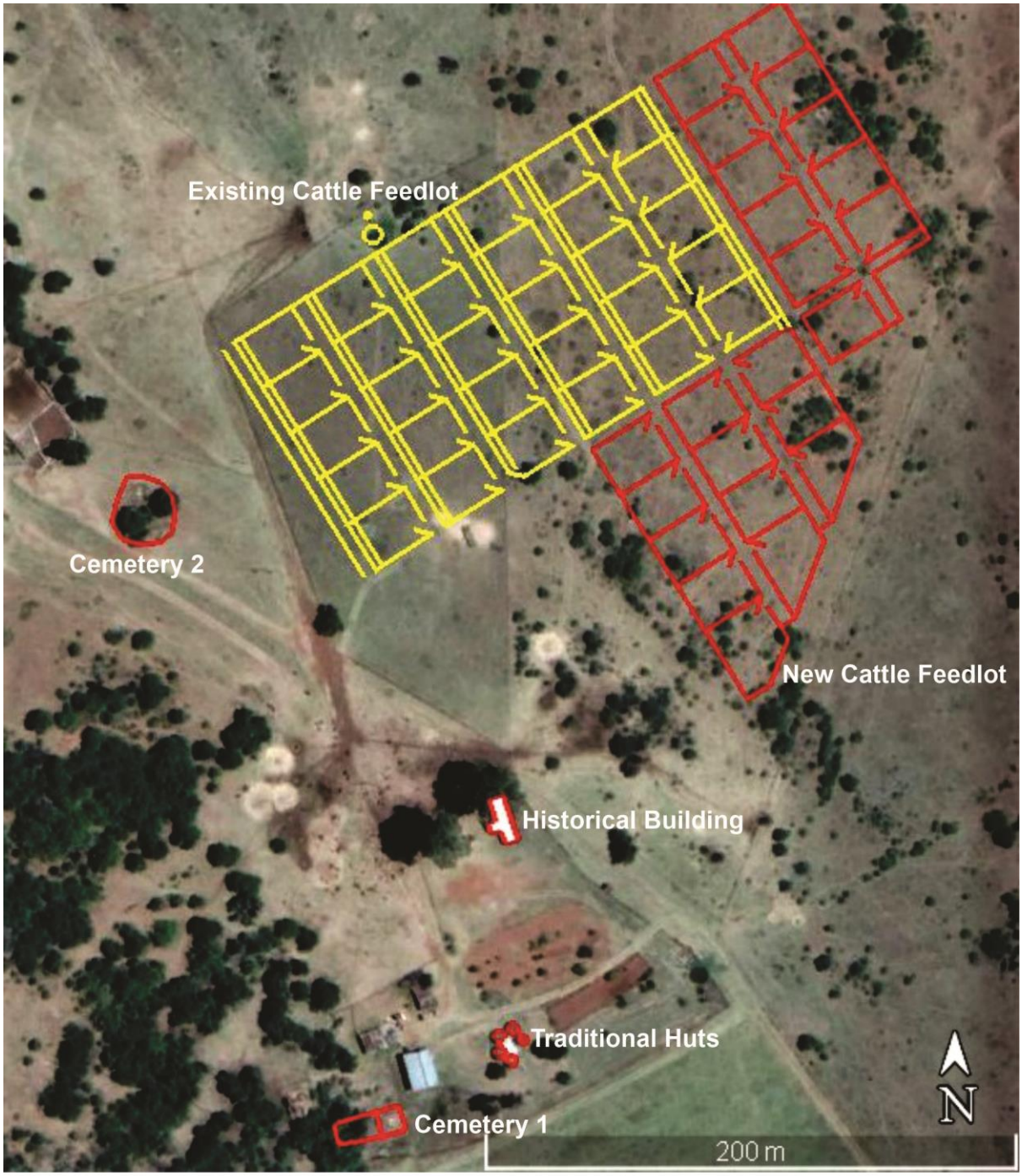


Figure 9. Aerial view and layout of man-made features recorded during survey.

Figure 10. From left to right, Cemetery 1 and 2 (above) a historical building and traditionally constructed huts (below).

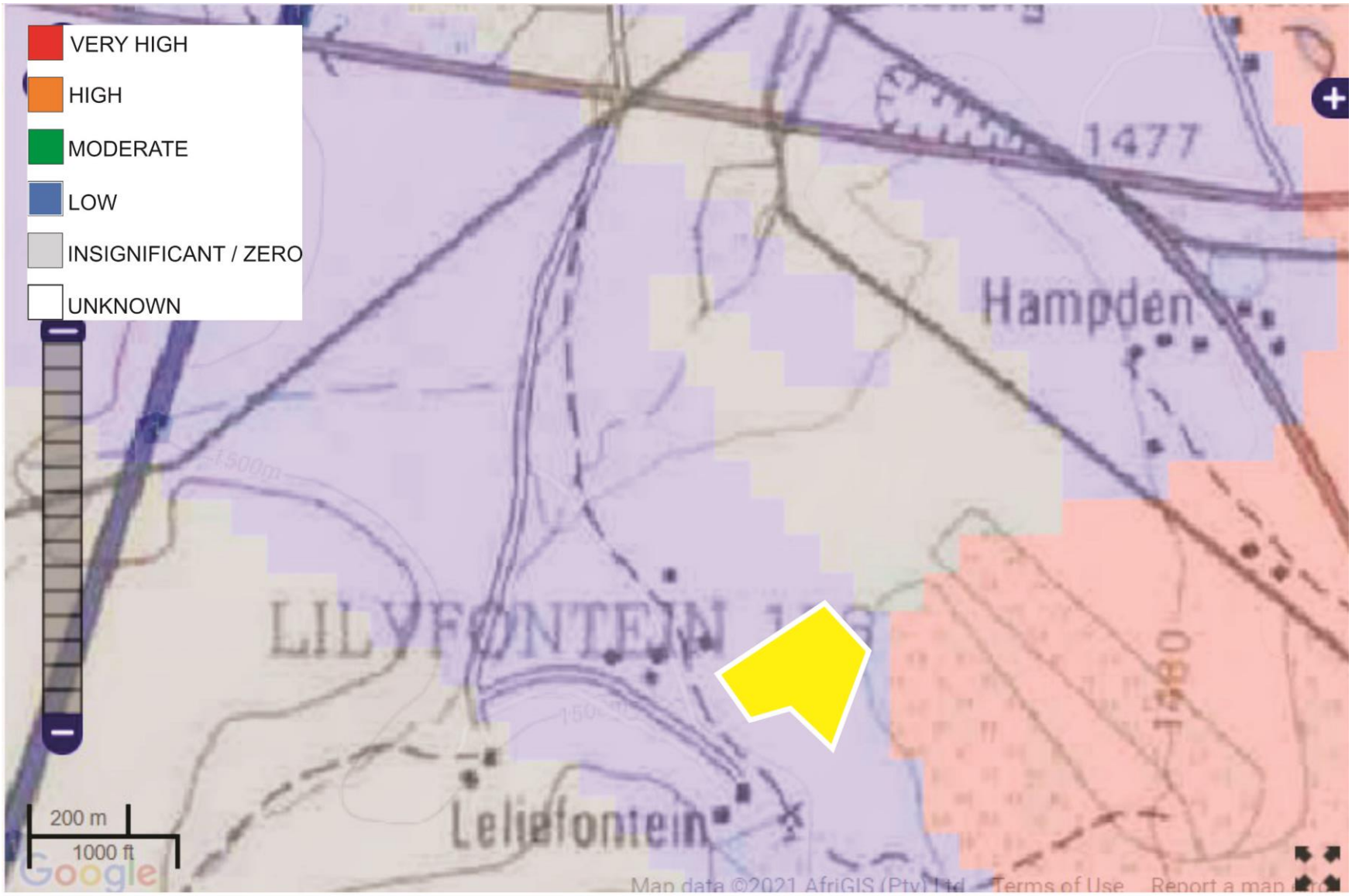


Figure 11. SAHRIS palaeosensitivty map of the area (Study area marked by yellow polygon).

Appendix E: Public Participation

APPLICATION FOR THE PROPOSED DEVELOPMENT OF CATTLE-SHEEP FEEDLOTS ON FARM LILYFONTEIN 156

ENVIRONMENTAL MANAGEMENT GROUP (PTY) LTD

PUBLIC PARTICIPATION REPORT

Table of Contents

ABBREVIATIONS

BID	Background Information Document
DWS	Department of Water and Sanitation
RI&APS	Registered Interested & Affected Parties
I&APS	Interested & Affected Parties
PPP	Public Participation Process

1. INTRODUCTION

The Public participation process (PPP) forms an integral part of the rectification application process. It provides people with the opportunity to raise their issues and concerns about the proposed expansion and new development of livestock feedlots near Parys. A comprehensive public participation process was conducted by EMG Consultants, to ensure that all identified Interested and Affected Parties (I&APs) were informed of the proposed project and their input is able to influence decision-making process with regards to the development.

2. APPROACH AND METHODOLOGY

The Public Participation Process was conducted as per Regulation 39, 40, 41, 42, 43 & 44 of the Environmental Impact Assessment Regulations 2014 (as amended 07 April 2017) and the Public Participation Guidelines, 2017 were considered. Steps, which were taken to inform the identified I&APs and surrounding community of the proposed development included:

- Newspaper advertisement;
- On site notice and posters;
- Notifications, i.e. Distribution of Background Information Document (BID) to neighbouring property owners, organs of state and relevant authorities.

3. PUBLIC PARTICIPATION PROCESS CONDUCTED

The methods that were undertaken during conducting of the public participation process as discussed in detail below.

3.1. NEWSPAPER ADVERTISEMENT

The project was advertised in a newspaper, Parys Gazette on the 9th of December 2022 to inform the I&APs of the application for Environmental Impact Assessment for the proposed expansion and new development of livestock feedlots.

3.1.1 Newspaper Advert

NOTICE OF APPLICATION FOR BASIC ASSESSMENT AND WATER USE AUTHORISATION

BASIC ASSESSMENT
Notice is hereby given in terms of regulation 41 of Government Notice No. R326 under the National Environmental Management Act (Act 107 of 1998) as amended 7 April 2017, as well as in terms of the National Water Act (Act 36 of 1998)

WATER USE AUTHORISATION
A Water Use Authorisation (WUA) in terms of the National Water Act (NWA), 1998 (Act No. 36 of 1998, as amended) and its associated Regulations will be submitted to the Department of Water and Sanitation (DWS).

PROJECT NAME: PROPOSED DEVELOPMENT AND EXPANSION OF LIVESTOCK FEEDLOTS

NEMA: Listing Notice 1 (NO. 327, 07 APRIL 2017)

R327	27	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation.
R327	39 (ii) (a)	The expansion and related operation of facilities for the concentration of animals in densities that will exceed (i) 20 square metres per large stock unit, where the expansion will constitute more than 500 additional units; (ii) 8 square meters per small stock unit, where the expansion will constitute more than; (a) 1 000 additional units per facility or more excluding pigs
R327	4	The development and related operation of facilities or infrastructure for the concentration of animals for the purpose of commercial production in densities that exceed –

NWA: Section 21 (ACT NO. 36 of 1998) as amended

(a) Taking water from a water resource;
(g): disposing of waste in a manner which may detrimentally impact on a water resource;

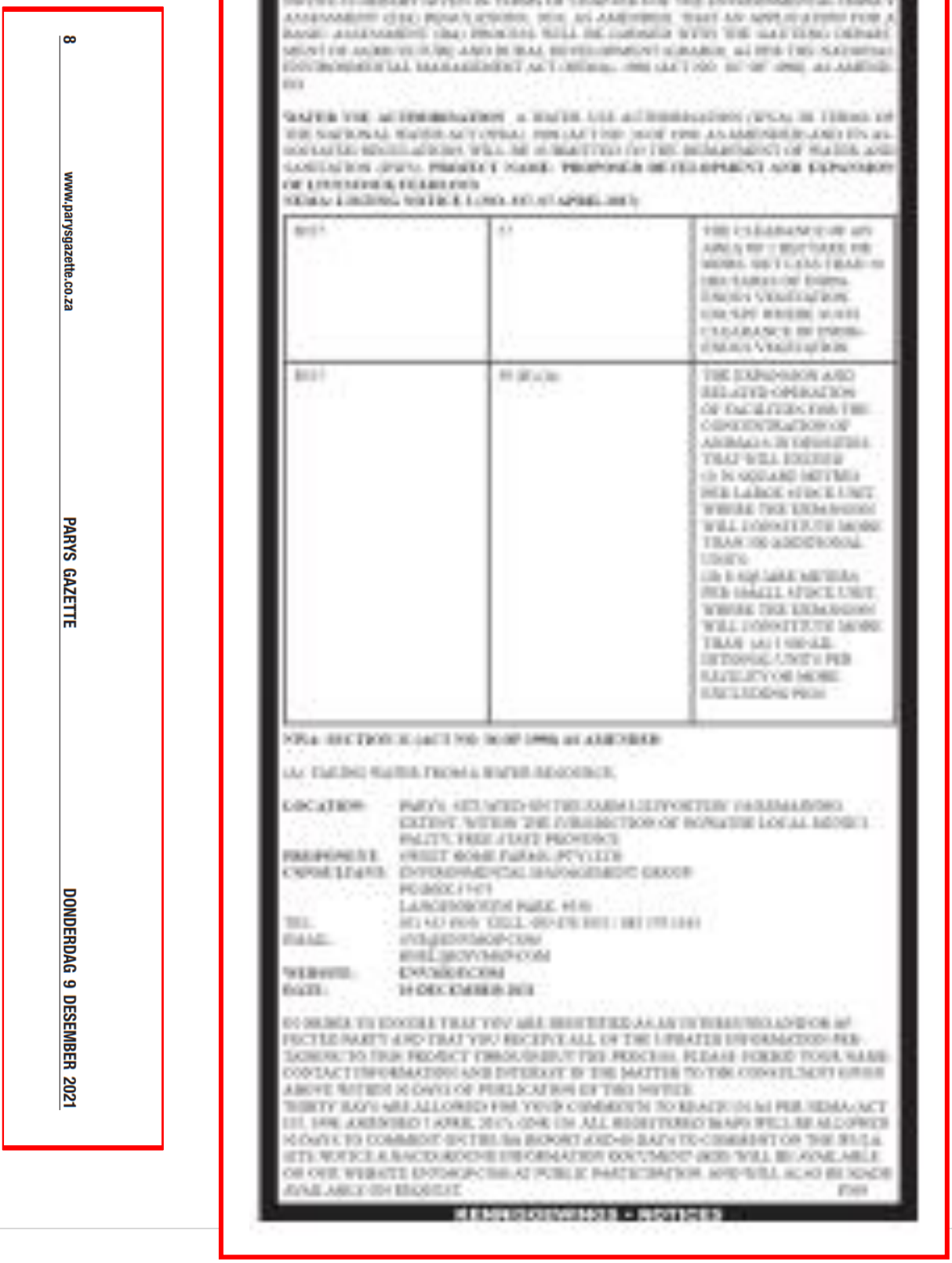
LOCATION: Parys, situated on the Farm Lilyfontein 156 Remaining Extent, within the jurisdiction of Ngwathe Local Municipality, Free State Province
PROPONENT: Sweet Home Farms (PTY) Ltd
CONSULTANT: ENVIRONMENTAL MANAGEMENT GROUP PTY (LTD)
PO Box 37473
Langenhoven Park, 9330
Tel: 051 412 6350
Cell: 083 678 3032 / 083 279 5143
Email: swn@envmgp.com
mel@envmgp.com
WEBSITE: envmgp.com
DATE: 7 December 2021

In order to ensure that you are identified as an Interested and/or Affected Party and that you receive all of the updated information pertaining to this project throughout the process, please submit your name, contact information and interest in the matter to the consultant given above within 30 days of publication of this notice

Thirty days are allowed for your comments to reach us as per NEMA (Act 107, 1998, amended 7 April 2017), GNR 326. All registered I&APs will be allowed 30 days to comment on the BA Report and 60 days to comment on the WULA.

Site notice & Background information document (BID) will be available on our website envmgp.com at public participation, and will also be made available on request.


8
PARYS GAZETTE
DONDERDAG 9 DESEMBER 2021
Geklassifiseerd
05 Memorium
05 Memorium
66 Motors
30 Bouwerk
Mr Gutter
Aluminium and colourbond
Prepainted inside and outside
Facias and bargeboards replaced
VIR KONTANT
079 498 3243
33 Loodgieters
WILLIE HALLABY PLUMBERS
Contracted with insurance companies
We handle geyser issues quickly and efficiently
Blocked Drains and Drain Clearing
Installation of Water Geysers, Pressure Pumps and Water Tanks
Issuing of plumbing certificates
24 hour guaranteed service
46 Salon
HAIRTALK BY CORRIE
WESSTRAAT 2
34 Algemene dienste
HONDA
Kawasaki
37 Plaagbeheer
Pest Control Professionals cc
083 439 2535
056 811 2022
TERMITES
36 YRS SERVICE!!
36 Sekuriteit
Incredible Door
CLASSIFIEDS
CONTACT PAULINA BARDA
073 772 3649
TO ADVERTISE



8 www.parysgazette.co.za PARYS GAZETTE DONDERDAG 9 DESEMBER 2021

3.2. SITE NOTICES

On site notices was placed on the 18th of November 2021, to bring the proposed expansion and new development of livestock feedlots to the attention of I&APs including surrounding land users.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SH
SWEET HOME FARMS

3.3. DISTRIBUTION OF BACKGROUND INFORMATION DOCUMENT

For notification of I&APs about the proposed project, a BID, shown below was compiled, and it was sent to the identified I&APs.

APPLICATION FOR THE PROPOSED DEVELOPMENT AND EXPANSION OF CATTLE-SHEEP FEEDLOTS ON FARM LILYFONTEIN 156

ENVIRONMENTAL MANAGEMENT GROUP (PTY) LTD

Application for the proposed development and expansion of cattle-sheep feedlots on farm Lilyfontein 156

CHRISTIEN KRUGER

Background Information Document

Background Information Document for the Application for the proposed development and expansion of cattle-sheep feedlots on farm Lilyfontein 156

December 2021

INTRODUCTION

Environmental Management Group (Pty) Ltd is applying for Environmental Authorisation on behalf of Sweet Home Farms (PTY) Ltd for the proposed Cattle-Sheep feedlot animal production development near Parys.

LOCALITY

The development of the proposed expansion and new development of livestock feedlots will take place near Parys on Remaining Extent of the Farm Lilyfontein 156, which falls within the jurisdiction of the Ngwathe Local Municipality. Quaternary Catchment C23B, Sub Water Management area is Downstream Vaal Dam, Upper Vaal in the Free State Province.

ENVIRONMENTAL AUTHORISATION

Prior to the commencement of the proposed development, Environmental Authorisation in terms of the National Environmental Management Act (NEMA), 107 of 1998, as amended 7 April 2017 is required from the competent authority (DESTEA). The Environmental Assessment Process will be conducted in terms of the 2014 NEMA environmental impact assessment (EIA) Regulations, GNR 326 as amended.

Listing Notice 1 (GN. 327, 07 APRIL 2017) – R 327 the following activity applicable to this project:

- **Activity 27**: The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.
- **Activity 39:** The expansion and related operation of facilities for the concentration of animals in densities that will exceed—
  (i) 20 square meters per large stock unit, where the expansion will constitute more than 500 additional units;
- **Activity 4:** The development and related operation of facilities or infrastructure for the concentration of animals for the purpose of commercial production in densities that exceed –
  (ii) 8 square meters per small stock unit

PURPOSE OF THIS DOCUMENT

EMG has prepared this document to inform you about:

- The proposed project;
- The current understanding of the baseline environmental and social conditions;
- Possible environmental impacts and proposed specialist studies;
- How you can have input into the Environmental Authorization and Water Use Authorisation Processes

YOUR ROLE

You have been identified as an interested and/or Affected Party (I&AP) who may want to be informed about the proposed project and have input into the environmental assessment processes and environmental reports.
You have an opportunity to review the BID and provide your initial comments to us for incorporation in the environmental assessment process. You will also be given the opportunity to provide input at the public meeting, if the need arises.

Comments will be recorded and included in the reports submitted to the relevant authorities for decision-making.

HOW TO RESPOND

If you are interested in receiving further information on the project please register your details with the persons listed below. Responses to this document can be submitted by means of the attached comments sheet and/or through communication with the persons listed below.
Christien Kruger
Tel: 051 412 6350
E-mail: ckruger@envmgp.com

Figure 1

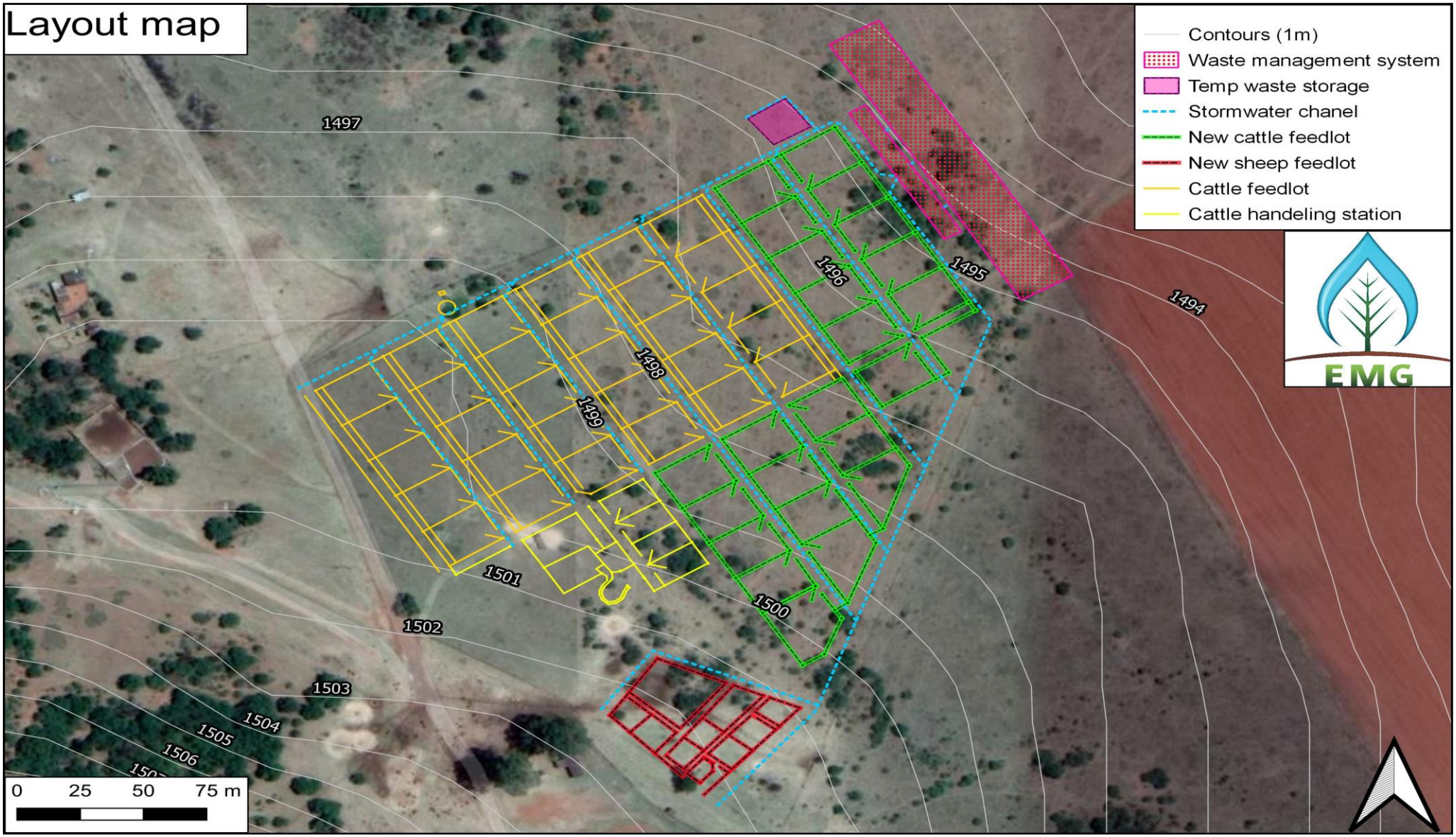
Layout map
Contours (1m)
Waste management system
Temp waste storage
Stormwater chanel
New cattle feedlot
New sheep feedlot
Cattle feedlot
Cattle handeling station
EMG
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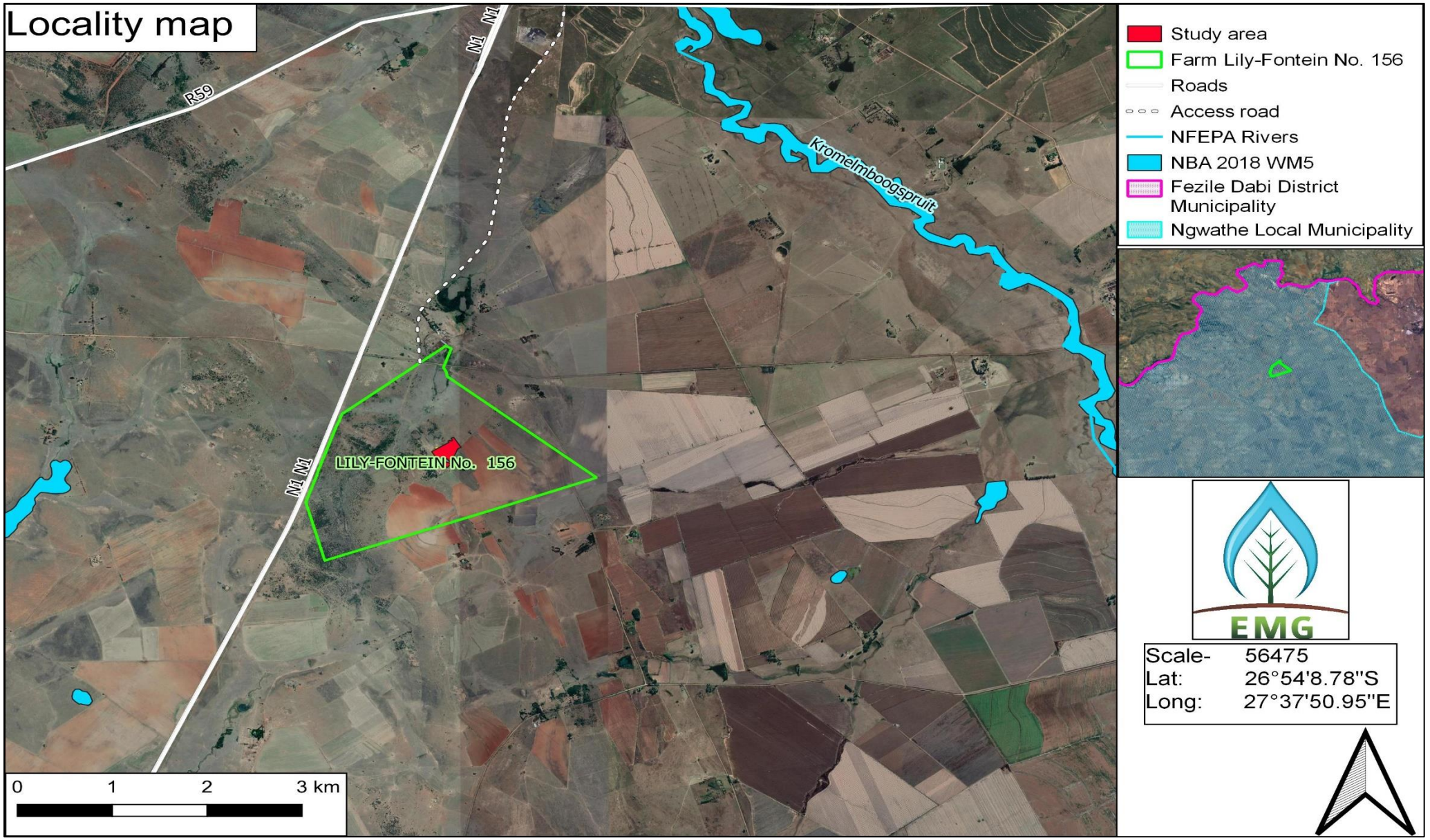
FIGURE 2


Locality map
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N1 N1
Kromelmboogspruit
LILY-FONTEIN No. 156
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Study area
Farm Lily-Fontein No. 156
Roads
Access road
NFEPA Rivers
NBA 2018 WM5
Fezile Dabi District Municipality
Ngwathe Local Municipality
EMG
Scale- 56475
Lat: 26°54'8.78"S
Long: 27°37'50.95"E

PROJECT DESCRIPTION

Environmental Management Group (PTY) Ltd. (EMG) is applying for environmental authorisation and water use licence on behalf of Sweet Home Farms (PTY) Ltd. for the above-mentioned development.

The proposed development includes the expansion of a cattle feedlot to host approximately 2000 cattle and the construction of a sheep feedlot that will ultimately host 1000 sheep. The proponent has tested the financial viability of high-density cattle farming by erecting 30 cattle feedlot cells containing 480 cattle. The total area within the fenced boundary of the existing feedlot is 1.7 ha. However, it should be emphasised that the actual footprint of built-up infrastructure only includes fencing, which equates to far less than 1 ha. Stocking density within the 30 feedlot cells equates to an average of 16 cattle per feedlot cell (500 m^2). This is considered a reasonably low stocking density which has not caused significant vegetation clearance through trampling, therefore not triggering Listing Notice 1 Activity 27 (GN 327). The proponent wishes to expand on the high- density feedlot farming in two phases.

Phase 1:

Increasing the stocking density from 480 large stock units (LSU) to 2000 LSU. The increase in stocking density will have to be accommodated by constructing 23 additional cattle feedlot cells of similar size to the existing feedlot cells (500 m^2 per feedlot cell). On completion, the cattle feedlot will include 58 cells (30 existing feedlot cells, 23 new feedlot cells, and 5 cells within the handling station) and will cover approximately 3.8 ha.

Phase 2:

Construction of a new sheep feedlot covering an approximate area of 0.25 ha, made up of 10 feedlot cells. The new sheep feedlot will have the potential of hosting 1000 sheep (small stock unit, SSU).

Feedlot waste management:

Organic waste produced by the proposed development's operation will be a mixture of manure and soil, forming a biodegradable by-product. According to Font-Palma (2019), healthy feedlot cattle produce manure equivalent to 5-6% of their body weight per day. The proposed cattle feedlot production scheme aims to introduce new cattle every four months with a starting weight of 250 kg and an exit weight of 500 kg. Calculated as the average between the two weight classes, each LSU will produce 562.5 kg manure per month.

According to Ogejo et al, (2010), sheep produce manure equivalent to 5% of their body weight per day. The proposed sheep feedlot production scheme aims to introduce new sheep every four months, with a starting weight of 25 kg and an exit weight of 50 kg. Calculated as the average between the two weight classes, each SSU will produce 56 kg manure per month.

The concentrated quantities of manure resulting from high-density livestock farming often lead to the proliferation of unwanted pest insects such as flies. To mitigate this, probiotics will be introduced into the livestock feed and will be sprayed onto the feedlots to limit the proliferation of unwanted pests.

The feedlots will be cleaned each month which involves the mechanical removal of manure. The collected waste will be transported to a temporary storage/drying area lined by an impenetrable material, preventing seepage into the ground. Manure stockpiles will be covered with a 50% shade net until dry. The dried manure will be used as fertiliser on the surrounding cultivated fields.

A stormwater layout plan has been compiled and is attached. The mentioned stormwater management plan will conforms to industry best practice design. The stormwater network will redirect runoff from the feedlots into a sedimentation pond, trapping solid waste before entering the evaporation pond (waste lagoon). Both the sedimentation pond and waste lagoon will be lined by an impenetrable material, preventing seepage. The accumulated solids within the sedimentation pond will be cleaned when it reaches 70% capacity.

Waste from the sedimentation pond will be transported to the temporary waste storage area to dry out and eventually used as fertiliser. The water within the evaporation pond (waste lagoon) will dry naturally and eventually be used as fertiliser in the surrounding cultivated fields.

Dimensions of the sedimentation pond and waste lagoon are as follows:

Sedimentation pond:

(W)7.7 m x (L)72 m x (D)1.5 m _ Volume: 831.6 m^3

Waste lagoon:

(W)23 m x (L)145 m x (D)1 m _ Volume: 3335 m^3

Water supply:

The supply of cool, clean, good-quality water is essential for high-density cattle/ sheep production. The water requirement for cattle and sheep are calculated as:

Cattle: 40 litre per LSU per day: 40 litre x 2000 x 30 days = 2287 cubes / month

Sheep: 5 litre per SSU per day: 5 litre x 1000 x 30 days = 151 cubes / month

Drinking water will be supplied in a trough and placed off the ground. This ensures keeping the water clean and free of livestock secretions. Water abstracted from three existing boreholes will satisfy the water supply need. The operational activities for the proposed feedlot facility will require authorisation in terms of Section 21 of the National Water Act. The proponent has submitted a water use licenses application to the Department of Water and Sanitation (DWS).

Mortalities will be immediately removed from the feedlot and stored in a cooling room for a maximum of 48 hours, where after they will be donated to the Johannesburg Zoo. Here the mortalities will be fed to the various carnivores within the zoo.

POTENTIAL ENVIRONMENTAL IMPACTS

Below is a preliminary list of potential impacts identified at this stage of the process and will be investigated as part of the environmental assessment process. The list will be refined during the course of the environmental assessment process.

SPECIALIST ASSESSMENTS

Below is a list of specialist assessments that might be required for the project.

- Heritage/cultural and paleoanthropological resources:
- Land use:
- Groundwater:

ENVIRONMENTAL AUTHORISATION AND WULA PROCESS

The environmental assessment processes will be conducted to inform the competent authorities in their decision-making. These processes are conducted simultaneously.

STEPS IN THE ENVIRONMENTAL AUTHORISATION PROCESSES

The environmental authorisation processes provides information on the project and environment in which it is being undertaken; identifies, in consultation with registered interested & affected parties (RI&APs), the potential negative as well as positive impacts of the project; and reports on management measures required to mitigate impacts to an acceptable level. The likely process steps and timeframes are provided below. RI&APs and other stakeholders on the project's database will receive notification of public participation opportunities in advance.

PUBLIC PARTICIPATION

Public Participation provides Stakeholders and I&APs the opportunity to raise issues of concern and comment on the proposed activity. Notify other regulatory authorities and I&APs of project and environmental assessment (via newspaper advertisements, site notices and this BID document)

Public meeting with I&APs and regulatory authorities (if required)
Submit application to the DESTEA (14 days)
Submit draft BAR to the DESTEA
Public & authority review of draft BAR (30 calendar days) Update the draft BAR with comments received during the review period
Submit updated Final BAR to the DESTEA
Review of the Final BAR by the DESTEA (107 calendar days)
Submit WUL technical report and application forms to DWS
Circulate decision to RI&APs on the project database.

PARTIES INVOLVED IN THE ENVIRONMENTAL APPLICATION PROCESSES

IAPs

- Surrounding landowners, land users and communities
- Parastatals

ORGANS OF STATE & RELEVANT AUTHORITIES

- Department of Rural Development and Land Reform
- Department Of Agriculture and Rural Development
- Department of Water and Sanitation (DWS)
- Department of Heritage (SAHRA)
- Free State Department of Public Works and Infrastructure
- Fezile Dabi District Municipality
- Ngwathe Local Municipality
- Mayor & Ward Councillor

Please let us know if there are any additional parties that should be involved.

PROCESS STEPS (in accordance with GN326)	RESPONSIBLE PARTY	TIMEFRAME
1. Initial communication to clarify the application with the Authorising Department.	EAP	1 day
2. EAP to conduct a site investigation	EAP	1 day
3. EAP to submit Application for Environmental Authorisation to the competent authority.		1 day
4. Competent authority Accepts Application.	DESTEA	14 day
5. EAP to compile a Basic Assessment Report subjected to 30 days Public Participation Process.	EAP	90 day
6. EAP to submit Final Basic Assessment Report inclusive of comments to competent authority.	EAP	1 day
7. Competent authority to grant or decline Approval for Environmental Authorisation.	DESTEA	107 day
8. Environmental Authorisation subject to 20 day appeal process.	EAP	20 day
9. Final Approval of Environmental Authorisation.	DESTEA	1 day

Application for the proposed development and expansion of cattle-sheep feedlots on farm Lilyfontein 156 Registration and Response Form for Interested and Affected Parties (I&AP)

Date	

Particulars of the I&AP

Name	
Postal Address & Code	
Street Address & Code	

Telephone number		Cell Phone Number	
Fax Number		E-Mail Address	

Please Identify your Interest in the Proposed Project:

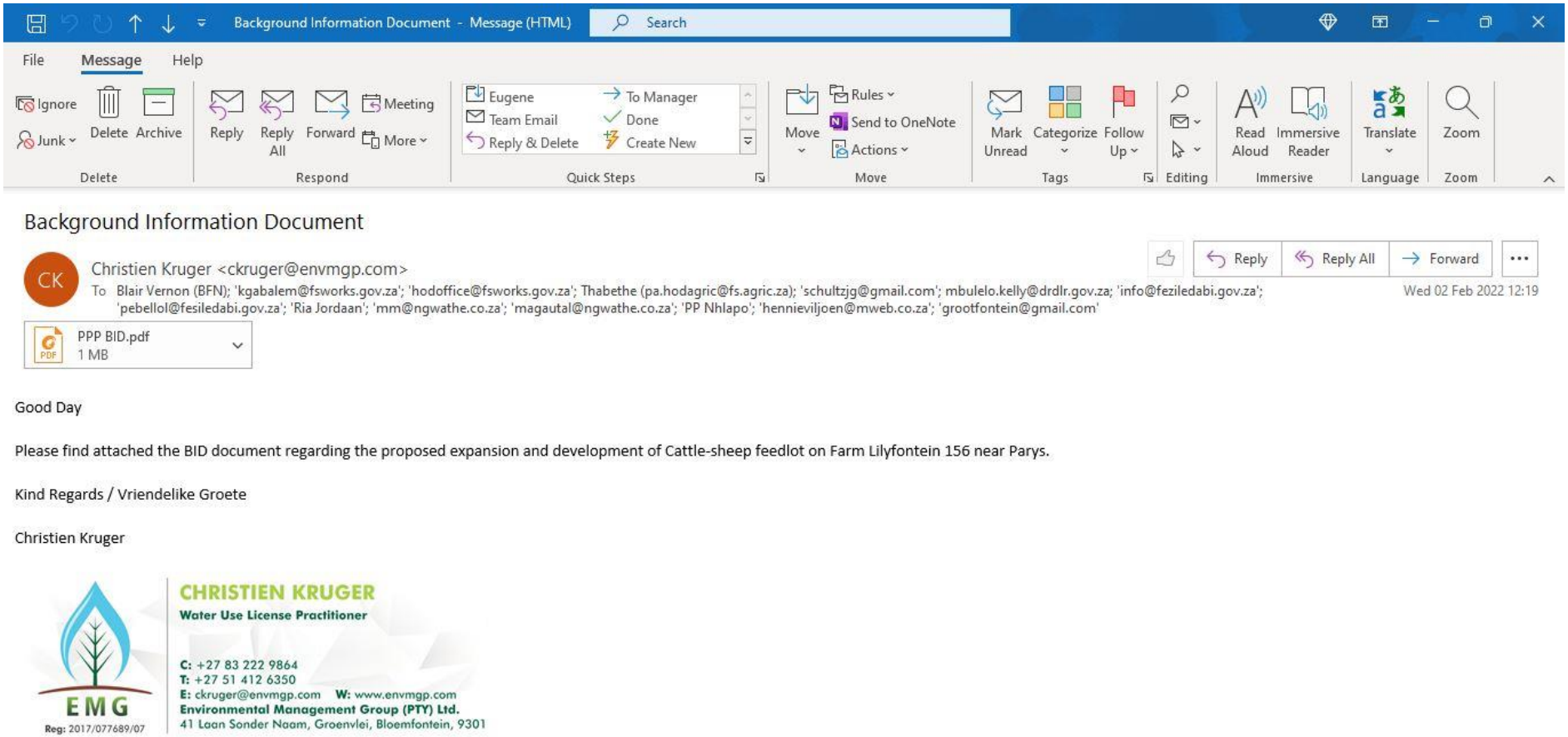
Please write your comments and questions here:

Please return completed document prior to 30 days lapsing to:

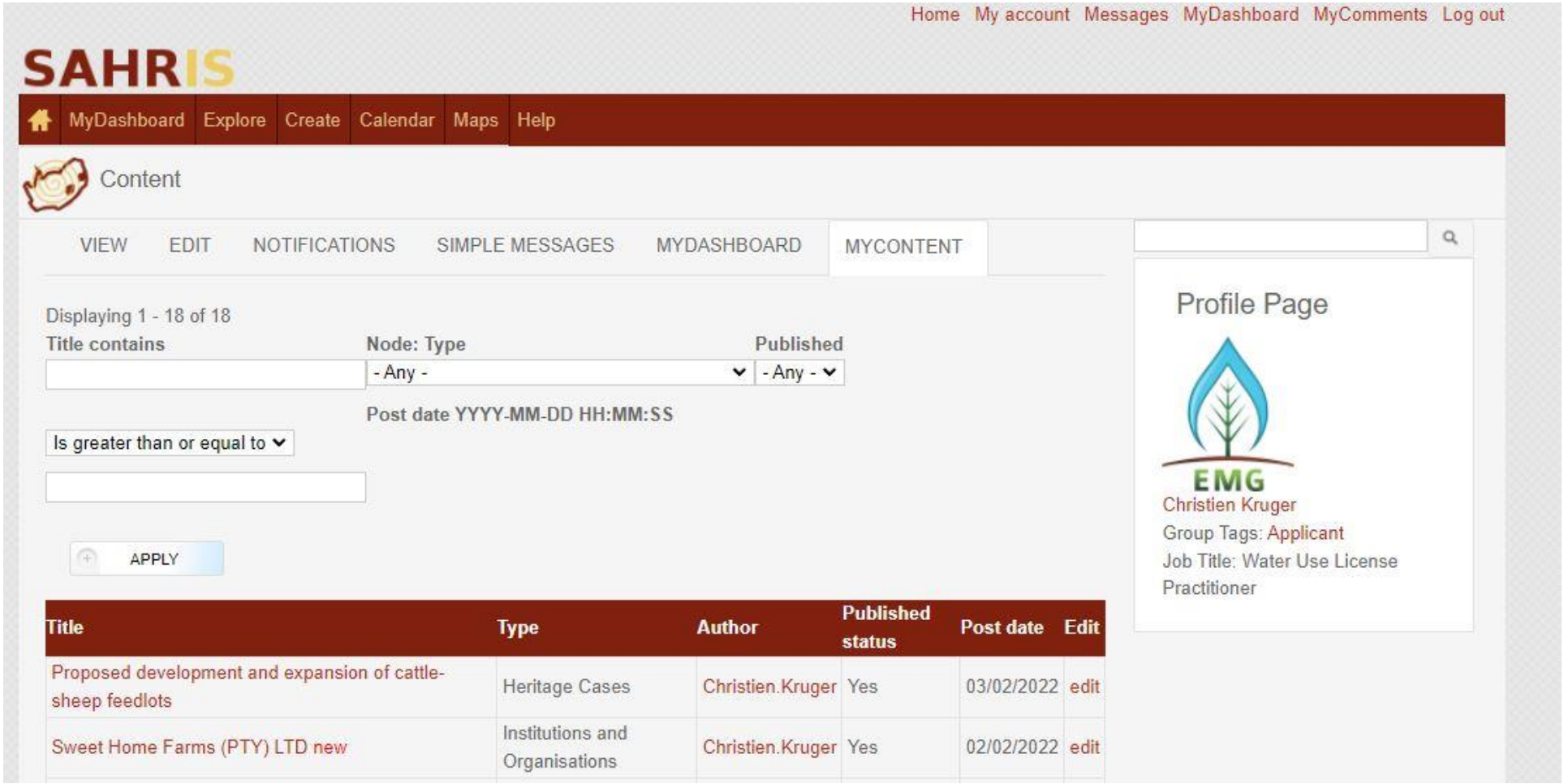
Christien Kruger
Date: 2 February 2022
Tel: 051 412 6350
Email: ckruger@envmgp.com
Website: envmgp.com

3.4 NOTIFICATION TO RELEVANT AUTHORITIES & I&AP'S

3.4.1 BID circulated to all I&AP's and District and Local Departments.



3.4.2 Heritage Report uploaded to SAHRIS



3.5 LIST OF I&AP'S

List of Stakeholders and I&AP's				
Department / Organisation	**Contact Person**	**E-Mail Address**	**Address**	**Contact Nr**
Department of Water & Sanitation	Mr. Vernon Blair Deputy Director: Water Use	BlairV@dws.gov.za, NelG@dws,gov.za	Bloem Plaza 2nd Floor c/o Charlotte Maxeke & East Burger Streets, Bloemfontein, 9300	051 405 9000 082 807 3552
Free State Department of Public Works and Infrastructure	Mr M Mohlahlo	hodoffice@fsworks.gov.za – kgabalem@fsworks.gov.za	Room 146, OR Tambo House Cnr St, Andrews and Markgraaf Streets Bloemfontein 9300	051 492 3915
Department of Agriculture and Rural Development	Mr. Thabethe	pa.hodagric@fs.agric.za schultzjg@gmail.com	Gielie Joubert Street, Glen, Bloemfontein, 9360	051 861 8509
Department of Rural Development & Land Reform	Mr. M Kelly	mbulelo.kelly@drdlr.gov.za	136 Charlotte Maxeke Street, Bloemfontein, 9300	051 400 4200 / 071 674 4089
SAHRIS				
Fezile Dabi District Municipality	Ms. LM Molibeli	info@feziledabi.gov.za / pebellol@fesiledabi.gov.za	John Vorster Road, P.O Box 10, Sasolburg, 1947	016 970 8600
Ngwathe Local Municipality	Mr. Bruce W Kannemeyer	jordaanr@ngwathe.co.za / mm@ngwathe.co.za	Liebenbergstrek, Parys, 9585	056 806 5901 / 056 811 2131 / 081 033 9636
Ngwathe Local Municipality Ward 6 Councilor	Mr. Magashule Malebo		Liebenbergstrek, Parys, 9585	079 381 2164 Number does not exist
Ngwathe Local Municipality Executive Mayor	Mrs. Joey Mochela	magautal@ngwathe.co.za	Liebenbergstrek, Parys, 9585	071 878 6571
Ngwathe Local Municipality Environmental Department	Mrs P Nhlapo	ppnhlapo53@gmail.com	Liebenbergstrek, Parys, 9585	056 817 6890 / 073 306 6121
	Johan Danhauser	Phoned on the 1st of February 2022. He knowns about the development and has no objections or concerns. And does not want any correspondence. C Kruger	Lilyfontein 156/1	082 655 4271
	Hennie Viljoen	hennieviljoen@mweb.co.za	Vlensburg 155/RE	082 655 4262
	Willem Coetzer		Hamden 153/RE	082 651 3686
	Willem Coetzer		Grootfontein 40/RE	082 651 3686
	George Frederick Van Der Westhuizen	grootfontein@gmail.com	Doornkop 148/RE	082 651 2858
	Johan Danhauser	Phoned on the 1st of February 2022. He knowns about the development and has	Boskop 154/RE	082 655 4271

		no objections or concerns. And does not want any correspondence. C Kruger		
	Dirk Strydom	Phoned on the 2nd of February 2022. He knowns about the development and has no objections or concerns. And does not want any correspondence. C Kruger	Zyferfontein 195/RE	0828056985

4. CONCLUSION

It is concluded that the methods incorporated in the public participation process to inform the surrounding landowners, organs of state and identified relevant government authorities was adequate. All the identified I&APs will be given an opportunity to give input regarding the proposed expansion and new development of livestock feedlots and will be included in the final report.

Appendix F: Impact Assessment

ENVIRONMENTAL MANAGEMENT GROUP

Specialists in Environmental Management
Integrating Industry and Infrastructure with the Environment

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Langenhoven Park 9330

Impact Assessment of:

Cattle-Sheep Feedlots at Lily-Fontein No. 156

For:

Sweet Home Farms (PTY) Ltd.

Parys – Free State

January 2022

Prepared for:

Sweet Home Farms (PTY) Ltd.

Client:	Sweet Home Farms (PTY) Ltd JA Kotze
Contact Information:	227 5088 / 082 362 4083
E-mail:	jakotze@kotzecon.co.za
Address:	Farm Lily-Fontein No. 156

Prepared by:

Environmental Management Group (Pty) Ltd

Specialist:	Ricus Nel Ecologist and Environmental Specialist Environmental Management Group
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Contents

1. Introduction:

The social and environmental impacts assessment of the proposed new **Cattle and Sheep Feedlots** at **Farm Lily-Fontein No. 156, Free State Province**, is presented as the risk assessment methodology and associated results. This process aims to identify possible impacts associated with the proposed development and evaluate their significance to ensure appropriate mitigation is applied. The recommendations of suitable mitigation measures that should be implemented to reduce the consequences of likely impacts associated with the project have been formulated by industry best practice principles, professional experience, and relevant legislation.

2. Methodology:

2.1. Introduction:

Management and risk assessment plays a key role in the proponent's business. Managing the risks must be integrated into day-to-day business-related processes to ensure that both operational and strategic decisions are risk-based. The risk management system provides a framework to identify both threats and opportunities. The system then compensates and initiates resources that are allocated to treat the risks. It is required to review the risks as an ongoing process and then proceed to review the effectiveness of the controls.

The risk assessment comprises quantifying the magnitude of potential impacts and the likelihood of these impacts to occur. The Consequence I and Likelihood (L) matrix combine the qualitative and or semi-quantitative ratings of consequence and the likelihood that a specific consequence will occur to calculate a risk score and risk rating (Equation 1). Essentially, the greater a probability of an adverse impact occurring, the greater the risk level associated with it will be.

$\boldsymbol{C}$ = Overall consequence
$\boldsymbol{L}$ = Likelihood of occurrence

Equation 1: Calculation of environmental significance.

$$Environmental\ Significance = C \times L$$

2.2. Determination of Consequence:

Consequence analysis is a combination of quantitative and qualitative information and the outcome can be positive or negative. Several factors can be used to determine consequence. For the purpose of determining the environmental significance in terms of consequence, the following factors were chosen: Severity/Intensity, Duration and Extent/Spatial Scale. Each factor is assigned a rating between 1 to 5, as described in the tables below.

2.2.1. Determination of Severity:

Severity relates to the nature of the event, aspect or impact to the environment and describes how severe a given aspect's impact on the biophysical and socio-economic environment will be.

Table 1: Rating criteria describing the severity of a given aspect.

Type of criteria	Rating				
	1	2	3	4	5
Quantitative	0-20%	21-40%	41-60%	61-80%	81-100%
Qualitative	Insignificant / Non-harmful	Small / Potentially harmful	Significant / Harmful	Great / Very harmful	Disastrous Extremely harmful
Social/ Community response	Acceptable / I&AP satisfied	Slightly tolerable / Possible objections	Intolerable/ Sporadic complaints	Unacceptable / Widespread complaints	Totally unacceptable / Possible legal action
Irreversibility	Very low cost to mitigate/ High potential to mitigate impacts to level of insignificance / Easily reversible	Low cost to mitigate	Substantial cost to mitigate / Potential to mitigate impacts / Potential to reverse impact	High cost to mitigate	Prohibitive cost to mitigate / Little or no mechanism to mitigate impact Irreversible
Biophysical (Air quality, water quantity and quality, waste production, fauna and flora)	Insignificant change / deterioration or disturbance	Medium change / deterioration or disturbance	Significant change / deterioration or disturbance	Very significant change / deterioration or disturbance	Disastrous change / deterioration or disturbance

2.2.2. Determination of Duration:

Duration refers to the amount of time the receiving environment will be exposed to a given aspect, risk or impact, given the absence of intervention/mitigation.

Table 2: Rating criteria for determination of duration

Rating	Description
1: Low	1 Month
2: Low-Medium	1 – 3 Months
3: Medium	More than 3 Months
4: Medium-High	5 – 10 Years
5: High	More than 10 Years

2.2.3. Determination of Extent/Spatial Scale:

Extent refers to the spatial influence of an impact, be it contained to the immediate surroundings (site), extending to the surrounding area, regional (will have an impact on the region), national (will have an impact on a national scale) or international (impact across international borders).

Table 3: Rating criteria for the determination of extent/spatial scale

Rating	Description
1: Low	Immediate, fully contained area (site)
2: Low-Medium	Surrounding Area
3: Medium	Regional
4: Medium-High	National
5: High	International

2.2.4. Determination of Overall Consequence:

The overall consequence is determined by calculating the sum of all impact factors described above and those summarised below, divided by the total number of impact factors (three) (Equation 2).

$\boldsymbol{S}$ = Severity
$\boldsymbol{D}$ = Duration
$\boldsymbol{E}$ = Extent
$\boldsymbol{n}$ = number of factors

Equation 2: Calculation of overall consequence.

$$Overal\ Consequence = \frac{\sum(\boldsymbol{S}+\boldsymbol{D}+\boldsymbol{E})}{\boldsymbol{n}}$$

2.3. Determination of Likelihood:

Likelihood refers to the probability of a given aspect/impact to occur given that no mitigation measures are implemented.

Table 4: Rating Criteria for the determination of likelihood.

Rating	Description
1: Low	< 30% chance of occurrence
2: Low-Medium	30% - 50% chance of occurrence
3: Medium	50% - 70% chance of occurrence
4: Medium-High	70 – 90% chance of occurrence
5: High	>90% of occurrence

2.4. Determination of Overall Environmental Significance:

2.4.1. Quantitative analysis of the overall environmental significance:

The overall environmental significance is determined by multiplying the overall consequence I by the likelihood of occurrence (L) (Equation 1). The rationale of the overall environmental significance relates to identifying and quantifying the sum of environmental impacts arising from the proposed development and the recommendation of appropriate mitigation measures.

Table 5: Environmental significance evaluation score sheet.

Aspect Specific Environmental significance	**Low**	**Low-Medium**	**Medium**	**Medium-High**	**High**
Overall Consequence X Overall Likelihood *(Equation 1)*	1-5	6-10	11-15	16-20	21-25
Overall Environmental significance.	**Low**	**Low-Medium**	**Medium**	**Medium-High**	**High**
Summed totals of all environmental aspects.	6-34	35-63	64-92	93-121	122-150

2.4.2. Qualitative description or magnitude of the environmental significance:

The qualitative description of environmental significance attempts to provide an indication of the nature and or magnitude associated with the proposed development. It also guides the prioritisation and decision-making process related to this event, aspect or impact.

Table 6: Rating Criteria for Impact significance

Significance	Low	Low-Medium	Medium	Medium-High	High
Impact Magnitude	Impact is of very low order and therefore likely to have very little real effect. Acceptable.	Impact is of low order and therefore likely to have little real effect. Acceptable.	Impact is real, and potentially substantial in relation to other impacts. Can pose a risk to the company	Impact is real and substantial in relation to other impacts. Pose a risk to the company and environment. Unacceptable	Impact is of the highest order possible. Unacceptable. Fatal flaw.
Action Required	Maintain current management measures. Where possible improve.	Maintain current management measures. Implement monitoring and evaluate to determine potential increase in risk. Where possible improve	Implement monitoring. Investigate mitigation measures and improve management measures to reduce risk, where possible.	Improve management measures to reduce risk.	Implement significant mitigation measures or implement alternatives.

3. Impact Assessment for the Preferred Alternative:

3.1. Fauna and Flora:

The flora and fauna impact assessment takes into consideration the site's natural condition and any sensitivities, i.t.o. Habitat diversity, species diversity and ecological diversity. The flora impact assessment refers to the vegetative component of the assessed area and focuses on the degree of infestation by exotics, vegetation structure, endemics, and protected species. The fauna impact assessment refers to the animal component and focuses on the available habitats, resources and protected species.

1. Habitat loss						
Impact	Loss of habitat and species diversity as a result of construction and the removal natural elements.					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	3	1	2	4	8
Mitigation	Limit the amount of construction sites that are worked on simultaneously and consult an ecologist with regards to sustainable rehabilitation of the disturbed areas. The construction phase should be completed as soon as possible without causing any unnecessary environmental damage.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	3	1	2	3	6
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	5	1	3	4	12
Mitigation	Rehabilitation measures must be implemented in areas where the soil surface was disturbed					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	5	1	3	3	9
Cumulative Impacts	Loss of plant and animal species due to construction vehicles, removal of topsoil and trampling.					
Additional Notes:	Construction footprint to be demarcated as per the construction phase conditions. A comprehensive stormwater management plan must be implemented. Vehicle movement may not encroach near the small hill situated west of the proposed feedlots.					

The environmental impact on habitat loss during constructional phase will be **Low-medium** without mitigation and **Low-medium** when mitigation measures are applied. This risk assessment for the operational phase will be **Medium** prior to mitigation and **Low-medium** after mitigation and is described as having a low order impact. It is necessary to implement monitoring and evaluation procedures to determine the potential of increase in risk. The already disturbed ecological conditions observed on-site has influenced the impact assessment.

2. Invasive plant species						
Impact	Proliferation of exotic plant species due to environmental disturbance.					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	3	2	3	3	9
Mitigation	Topsoil must be stockpiled and kept clean from alien vegetation. Equipment used should be regularly washed to avoid transporting invasive species.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	3	1	2	2	4
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	5	2	4	3	12
Mitigation	No exotic flora may be introduced for landscaping purposes. Native species, and preferably species naturally occurring in the area should be used. Inspections followed by the clearance of exotics should be conducted on a yearly basis.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	3	1	2	2	4
Cumulative Impacts	Transportation of alien/invasive plant species					
Additional Notes:	Contain the natural environment and ensure the Environmental Management Plan is adhered to.					

The impact that invasive plant species will have during constructional phase is estimated to be **Low-medium** without mitigation and **Low** when mitigation measures are implemented. This risk assessment for the operational phase is estimated to be **Medium** prior to mitigation, and **Low** after mitigation measures are implemented. It is necessary to implement monitoring and evaluation procedures to determine the potential of increase in risk.

3. Loss of protected fauna and flora						
Impact	The loss of protected species as a result of the proposed development.					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	3	1	3	3	9
Mitigation	Notice boards should be erected displaying information on the potential occurrence of protected species. During construction, if a protected species is observed, a relevant specialist should be consulted.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	3	1	2	2	4
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	5	1	3	2	6
Mitigation	Relocation of protected species after the acquisition of the relevant permits. No disturbance related activities may encroach near the mentioned small hill.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	5	1	3	1	3
Cumulative Impacts	The local extinction of protected species and possibly rare endemics.					
Additional Notes:	During the site visit no such species were observed and considering the disturbed condition of the site it is deemed unlikely that they will occur.					

The impact assessment related to the loss of protected fauna and flora during the constructional phase prior to mitigation is considered to be **Low-medium** and **Low** after mitigation. The loss of protected fauna and flora during the operational phase prior to mitigation is considered **Low-medium** and **Low** after mitigation. The impact assessment considers the related loss of protected species as a low order impact due to the already degraded condition of the site.

4. Land Transformation/ Veld fire						
Impact	Uncontrolled veld fire and destruction of natural veld conditions.					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	3	2	3	3	9
Mitigation	Construction workers will not be permitted to start veld fires, firefighting equipment must be on-site and activities generating heat or an open flame must be monitored.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	3	1	2	2	4
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	2	2	3	3	9
Mitigation	Fire Management Plan must be present on site					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	2	1	2	2	4
Cumulative Impacts	Uncontrolled veld fires could destroy the natural habitat and lead to loss of species diversity. All operations should strictly be contained within the authorised development area.					
Additional Notes:	The local fire station, landowner and neighbouring landowners must be alerted about the potential of causing a fire.					

Veld fires will have an impact during both constructional and operational phases and is rated according to the risk matrix of having **Low-medium** impact. Although the assessed risk is low the threat or severity of the impact is high and can cause large scale destruction if this risk is not managed and monitored regularly. It should be emphasised that the overall poor ground cover and consequently low organic matter build-up will drastically reduce the probability of veld fires occurring.

Flora and Fauna Impacts						
Impacts	Constructional Phase		Operational Phase		Total Before Mitigation	Total After Mitigation
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation		
1. Habitat loss	8	6	12	9	10	8
2. Invasive plant species	9	4	12	4	11	4
3. Loss of protected fauna and flora	8	6	12	9	10	8
4. Land Transformation/ Veld fire	9	4	9	4	9	4
				Total:	10	6

The overall environmental impact arising from the proposed development on the floral and faunal community is considered **Low-medium** prior to mitigation and **Low-medium** after mitigation. It is important to note that the degraded current condition of the site has contributed to these low scores.

3.2. Heritage:

Heritage involves culturally significant finds including, but not limited to fossils, artefacts and certain culturally relevant infrastructure. These items will be identified by a Heritage Specialist throughout the construction phase of this project.

1. Artefacts and Fossils						
Impact	Destruction of any archaeological artefacts or fossils					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	5	1	3	1	3
Mitigation	The impact on palaeontological, archaeological, or historically significant resources within the development footprint is considered very low. However, if any such resources are unearthed, the relevant authorities should be notified.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	3	1	2	1	2
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	2	1	2	1	2
Mitigation	The impact on palaeontological, archaeological, or historically significant resources within the development footprint is considered very low. However, if any such resources are unearthed, the relevant authorities should be notified.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	2	1	2	1	2
Cumulative Impacts	N/A					
Additional Notes:	Specialist statement: " *Impact on palaeontological, archaeological or historically significant remains within development footprint is considered very low to non-existent. It is recommended that the planned development is exempt from further palaeontological investigation. Also, the proposed development footprint is assigned a rating of Generally Protected C."*					

The Paleoanthropological specialist indicated that the potential of finding any paleoanthropological resources of significant concern (Fossils and associated artefacts) is very low. The specialist further requested exemption from further investigation relating to this aspect. The overall impact on these historical resources is considered **Very Low**.

2. Historical structures of significance						
Impact	Destruction of any archaeological artefacts or fossils					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	5	1	3	2	6
Mitigation	No disturbance related activity may occur within a 25 m buffer zone of the two graveyards or the old buildings. Development should stay within the authorised boundary					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	1	1	1	1	1
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	5	1	3	1	3
Mitigation	No disturbance related activity may occur within a 25 m buffer zone of the two graveyards or the old buildings. Development should stay within the authorised boundary					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	1	1	1	1	1
Cumulative Impacts	The destruction of potentially historically significant structures.					
Additional Notes:	N/A					

The study area presents two graveyards and a historical building of significance. The impact assessment on this aspect during the construction phase is considered **Low-medium** before mitigation and **Low** after mitigation. During the operation phase the proposed impact on these resources is considered **Low** before mitigation and **Low** after mitigation. The appropriate mitigation measures should be introduced.

Heritage Impacts						
	Constructional Phase		Operational Phase		Total Before Mitigation	Total After Mitigation
Impacts	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation		
1. Artefacts and Fossils	3	2	2	2	3	2
2. Historical structures of significance	6	1	3	1	5	1
				Total:	4	2

The overall impacts on archaeological aspects will be of **Low** order prior to any mitigation and **Low** after mitigation. Mitigation during the construction phase will be necessary especially concerning the mentioned graveyards and historical building. It is therefore advised that the appropriate mitigation measures be implemented as indicated.

3.3. Water Resources:

Water resources include every aspect of water including surface and ground water, as well as assessments on their quality and quantity.

1. Surface and Ground Water Quality						
Impact	Sewage and effluent have the potential to adversely affect the quality of any receiving water body.					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	3	1	3	2	6
Mitigation	Chemical toilets must be available during construction and trap containers containing any oil, grease or other industrial substance must be treated and discharged at a recognised facility.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	2	1	2	1	2
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	3	2	3	4	12
Mitigation	A comprehensive stormwater network should be implemented. Stormwater channels should be lined with clay. The sedimentation pond, evaporation pond and the temporary storage/drying area should be connected to the stormwater network and be lined with concrete. Regular inspection of the stormwater network should be conducted. The sedimentation pond should be cleaned once it reaches 70% capacity.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	3	1	2	2	4
Cumulative Impacts	Contamination of groundwater resources.					
Additional Notes:	To eliminate the risk of contamination, above mentioned measures need to be implemented.					

The major risk to groundwater quality will be associated with activities on the surface such as spillages which will infiltrate over a period of time into the aquifer, which, depending on the size of the spill, can contaminate the whole aquifer. It is thus crucial to exercise mitigation measures during such incidents to avoid other groundwater users in the area being negatively affected by poor quality water. During the construction phase of the development, it estimated that the impact on surface and groundwater quality is of **Low-medium** order prior to mitigation and **Low** after mitigation. During the operational phase it is calculated that the impact on water resources will be of **Medium** order prior to mitigation and **Low** after mitigation. A comprehensive stormwater plan should be implemented to prevent concentrated organic waste (manure) from entering lower soil strata. The mitigation measures included in this impact assessment and those identified in the BAR should be followed.

Water Resources Impacts						
Impacts	Constructional Phase		Operational Phase		Total Before Mitigation	Total After Mitigation
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation		
1. Surface and Ground Water Quality	6	2	12	4	9	3
				Total:	9	3

The impact on water resources will be **Low-medium** prior to mitigation and **Low** after mitigation. All other mitigation measures as indicated should be implemented.

3.4. Aesthetics:

This risk to the visual character of the environment will be based on a cumulative contribution of all the specialists and site visits done by the Environmental Assessment Practitioner.

1. Construction of Infrastructure						
Impact	Negative overall aesthetic value due to construction					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	3	2	2	2	4
Mitigation	Construction debris should be removed regularly and not allowed to pile up. A designated construction waste area should be placed. All domestic waste and construction debris should be removed to a designated waste landfill site.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	2	1	2	2	4
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	4	2	3	3	9
Mitigation	Native trees can be planted around the feedlot to obscure direct visual impact. All operational activities should strictly be concentrated on the proposed site. Rehabilitation of all open spaces after construction.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	4	1	2	2	4
Cumulative Impacts	Negative visual impact on the surrounding environment.					
Additional Notes:	The proposed feedlots are situated on a farm and generate minimal visual impacts.					

The risk to the aesthetic value of the surrounding environment during the constructional phase of the development is rated to be **Low** before mitigation and **Low** after mitigation. The low scores were assigned due to the placement of the new feedlots on farm ground with the nearest neighbour being more than 2 km from the site. The operational phase of the proposed development generates a slightly higher visual impact. During the operational phase the impact on the surrounding aesthetic value of the area is considered **Low-medium** prior to mitigation and **Low** after mitigation.

Aesthetics Impacts						
	Constructional Phase		Operational Phase			
Impacts	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	Total Before Mitigation	Total After Mitigation
1. Construction of Infrastructure	4	4	9	4	7	4
				Total:	7	4

The overall impact on the area's Aesthetic value is considered **Low-medium** prior to mitigation and **Low** after mitigation. Therefore, it is recommended that construction finish as early as possible and that all disturbed open spaces are rehabilitated with indigenous vegetation.

3.5. Noise and Air Quality:

Noise and air quality assessments are based upon the type of equipment being used during a specific activity and the degree of disturbance that will occur. Air quality is further impacted by emissions emanating from the proposed development.

1. Air Quality						
Impact	Mobilization of equipment, land clearing and earthworks. Odour generation due to the concentration of livestock in a particular area.					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	3	2	2	3	6
Mitigation	Watering bare surfaces and excavations to promote dust suppression, enforce speed limit of 30km/h and optimization of working schedule to reduce vehicle mobilization					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	3	1	2	2	4
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	4	2	3	3	9
Mitigation	Introduction of probiotics in livestock feed and drinking water to accelerate the organic compound breakdown and limit fly population. Manure stockpiles may not stand unutilised for more than four months. Feedlot layout should be placed downwind from the populated areas. The sedimentation pond should be cleaned once at 70% capacity. The introduction of composting bacteria in the sedimentation pond accelerates the breakdown of organic compounds.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	4	1	2	2	4
Cumulative Impacts						
Additional Notes:						

Air quality will temporarily be impacted due to the movement and activities of construction vehicles. Due to the temporary nature of these activities, it is not foreseen that these impacts will significantly alter the air quality of the environment. Air quality and the risks involved will have an insignificant impact on the environment. The impacts for the constructional phase of the proposed development are considered **Low-medium** prior to mitigation and **Low** after mitigation measures have been

implemented. The impacts for the operational phase are considered to be **Low-medium** before mitigation and **Low** after mitigation. It is important that all the necessary mitigation measures are implemented, especially during the operational phase of the development. It remains the responsibility of the applicant to frequently investigate and assess the implementation of industry best practice mitigation measures to limit the overall impact on air quality.

2. Noise and Vibrations						
Impact	Vehicles and equipment utilized					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	3	2	2	3	6
Mitigation	Working schedule for activities with high noise levels will be limited to 08:00 AM to 17:00 PM, machinery should be serviced regularly during the construction stage. Equipment should be regularly serviced.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	1	3	1	2	2	4
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	4	2	3	3	9
Mitigation	Native trees can be planted around the feedlots to act as sound barriers. Regular inspection and maintenance of equipment must be undertaken to ensure that all components function optimally.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	4	1	2	3	6
Cumulative Impacts						
Additional Notes:	The noise generated by livestock is unavoidable, but the impacts can be mitigated by implementing the strategies mentioned above. It should be emphasised that the new feedlot will be placed on a farm located approximately 2 km from the nearest neighbour.					

Ambient noise will temporarily be impacted due to construction activities. It is considered unlikely that any significant environmental impact will arise due to these activities considering their temporary nature and the site's locality on a farm. During the construction phase the environmental impact on ambient noise is considered to be **Low-medium** before mitigation and **Low** after mitigation. During the operational phase the environmental impact on ambient noise is estimated to be of **Low-medium** grade before mitigation and **Low-medium** after mitigation.

Noise and Air Quality Impacts						
Impacts	Constructional Phase		Operational Phase		Total Before Mitigation	Total After Mitigation
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation		
1. Air Quality	6	4	9	4	8	4
2. Noise and Vibrations	6	4	9	6	8	5
				Total:	8	5

The impacts that the proposed development will have on the noise and air quality will be minimal if mitigation measures are implemented. Taking all factors into consideration the risk for noise and air quality to be significantly affected is considered **Low-medium** before mitigation and **Low** after mitigation have been implemented.

3.6. Waste:

Waste refers to all solid waste, including domestic waste, hazardous waste and construction debris. The Contractor is responsible for the establishment of a refuse control system (which must consider recycling wherever possible). Disposal arrangements must be made in advance comply with industry best practice.

1. General Solid Waste						
Impact	General solid waste pollution					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	3	2	3	3	9
Mitigation	Reduce, reuse and recycle strategy needs to be implemented. Waste receptacles must be made available, and all waste shall be adequately stored and removed. Waste that can easily be dispersed by wind should be appropriately discarded in bins with lids. Waste should be regularly removed from the site. The burning of waste should be prohibited.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	3	1	2	2	4
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	4	2	3	3	9
Mitigation	General waste should be transported to a designated waste storage area and may not be burned. Waste should be transported to a registered landfill site. Construction waste should also be removed from the site and not pile up. Construction debris should be removed to a registered landfill site.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	2	4	1	2	2	4
Cumulative Impacts						
Additional Notes:	In order to avoid posing a risk to the environment accessible receptacles must be readily available.					

The impact that general waste production will have during construction is estimated to be **Low-medium** before mitigation and **Low** when mitigation measures are implemented. The impact general waste production will have during the operational phase is considered **Low-medium** before mitigation and **Low** after mitigation measures have been implemented. It is necessary to implement monitoring and evaluation procedures to determine the potential of increase in risk over the duration of the facilities operation.

2. Organic waste (manure)						
Impact	Land contamination					
Constructional Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	N/A					
Mitigation	The new feedlots will only start to generate organic waste (manure) once the competent authority approves the project and the construction thereof has been completed. Therefore, the construction phase does not generate any impacts related to manure production.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	N/A					
Operational Phase						
Before Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	4	4	1	3	4	12
Mitigation	A comprehensive stormwater management network should be implemented and regularly inspected for faults. The stormwater channels should be lined with clay to prevent seepage. The sedimentation pond, evaporation pond and the temporary storage/drying area should be lined with concrete. Dried manure should not be unutilised for more than four months. Unutilised manure stockpiles should be transported to the nearest landfill site.					
After Mitigation	Severity	Duration	Extent	Consequences	Likelihood	Significance
	3	4	1	3	2	6
Cumulative Impacts	The accumulation of manure leading to environmental contamination.					
Additional Notes:	The waste management strategy must include the reduce, reuse and recycle model. Health and safety regulation should be followed.					

The environmental impact arising from the increased manure production will only be relevant after the project has been authorised by the competent authority and construction has been completed. Therefore, no impact relating to this aspect can be assessed for the constructional phase. During the operational phase of the development, the increase in livestock units will produce more manure which will have to be managed. Before mitigation, the effects hereof are considered **Medium** and **Low-medium** after adequate mitigation has been implemented. It is necessary to implement monitoring and evaluation procedures to determine the potential for an increase in risk.

Waste Impacts						
Impacts	Constructional Phase		Operational Phase		Total Before Mitigation	Total After Mitigation
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation		
1. General Solid Waste	9	4	9	4	9	4
2. Organic waste (manure)	N/A	N/A	12	6	12	6
				Total:	11	5

The overall environmental impact that waste will impose on the receiving environment is considered **Medium** before mitigation and **Low** after mitigation measures have been implemented. It is necessary to implement monitoring and evaluation procedures to determine the potential for increased risk.

4. Risk Assessment and Conclusion:

In conclusion the development is rated to be of **Low-medium** impact if no mitigation is applied. This score is however, highly unlikely as environmental monitoring and supervision will be conducted and an Environmental Management Plan report will also be available to the contractors. If all mitigation measures are implemented the overall environmental impact is estimated to be **Low** which is regarded as an insignificant environmental impact.

Total Combined Impacts		
Factors	***Impact Before Mitigation***	***Impact After Mitigation***
Fauna and Flora	10	6
Heritage	6	2
Water Resources	9	3
Aesthetics	7	4
Noise and Air Quality	8	5
Waste	11	5
Overall Impact	**51**	**25**

Appendix G: Environmental Management Programme

Environmental Management Plan (EMPr)

Cattle-Sheep Feedlots at Sweet Home Farms (PTY) Ltd. – Farm Lily-Fontein 156.

Prepared By:
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Table of Contents

EMG

1. DEFINITIONS:

1.1. ***Alien Vegetation:*** alien vegetation is defined as undesirable plant growth which shall include, but not be limited to; all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

1.2. ***Aspect:*** Element of an organisation's activities, products or services that can interact with the environment.

1.3. ***Auditing:*** A systematic, documented, periodic and objective evaluation of how well the environmental management plan is being implemented and is performing with the aim of helping to safeguard the environment by: facilitating management control which would include meeting regulatory requirements. Results of the audit help the organisation to improve its environmental policies and management systems.

1.4. ***Built environment:*** Physical surroundings created by human activity, e.g. buildings, houses, roads, bridges and harbours.

1.5. ***Contamination:*** Polluting or making something impure.

1.6. ***Corrective (or remedial) action:*** Response required addressing an environmental problem that is in conflict with the requirements of the EMP. The need for corrective action may be determined through monitoring, audits or management review.

1.7. ***Degradation:*** The lowering of the quality of the environment through human activities, e.g. river degradation, soil degradation.

1.8. ***Ecology*****:** The scientific study of the relationship between living things (animals, plants and humans) and their environment.

1.9. ***Ecosystem*****:** The relationship and interaction between plants, animals and the non-living environment.

1.10. ***Environment:*** environment means the surroundings within which humans exist and that could be made up of -

1.10.1. the land, water and atmosphere of the earth;

1.10.2. micro-organisms, plant and animal life;

1.10.3. any part or combination of (1.10.1) and (1.10.2) and the interrelationships among and between them; and

1.10.4. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

1.11. ***Environmental aspect:*** an environmental aspect is any component of a contractor's construction activity that is likely to interact with the environment.

1.12. ***Environmental impact:*** an impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

1.13. ***Environmental Authorisation:*** an environmental authorisation is a written statement from the National Department of Forestry, Fisheries and the Environment (DFFE) that records its approval of a planned development.

1.14. ***Hazardous waste:*** Waste, even in small amounts that can cause damage to plants, animals, their habitat and the well-being of human beings, e.g. waste from factories, detergents, pesticides, hydrocarbons, etc.

1.15. ***Land use:*** The use of land for human activities, e.g. residential, commercial, industrial use.

1.16. ***Mitigation:*** Measures designed to avoid, reduce or remedy adverse impacts

2. INTRODUCTION AND BACKGROUND:

2.1. SCOPE:

Environmental Management Group Consultants (EMG), as independent environmental managers and impact assessors, has been appointed by **Sweet Home Farms (PTY) Ltd** for to compile and submit an Environmental Management Programme (EMPr) under the National Environmental Management Act No 107 of 1998, for the **Expansion and New Development of Cattle-Sheep Feedlot on Farm Lily-Fontein No. 156, Ngwathe Local Municipality, Free State Province.**

This document is compiled in accordance with the Integrated Environmental Management (IEM) philosophy which aims to achieve a desirable balance between conservation and development (DEAT, 1992). IEM is a key instrument of the National Environmental Management Act [NEMA] (Act No. 107 of 1998). NEMA promotes the integrated environmental management of activities that may have a significant effect on the environment, while IEM prescribes a methodology for ensuring that environmental management principles are fully integrated into all stages of the development process. It advocates the use of several environmental management tools that are appropriate for the various levels of decision-making. One such tool is an EMP. The IEM guidelines encourage a pro-active approach to sourcing, collating and presenting information in a manner that can be interpreted at all levels. The basic principles underpinning IEM are that there be:

- informed decision-making;
- accountability for information on which decisions are taken;
- accountability for decisions taken;
- a broad meaning given to the term environment (i.e. one that includes physical, biological,
- social, economic, cultural, historical and political components);
- an open, participatory approach in the planning of proposals;
- consultation with interested and affected parties;
- due consideration of alternative options;
- an attempt to mitigate negative impacts and enhance positive aspects of proposals;
- an attempt to ensure that the ‘social costs’ of development proposals (those borne by society, rather than the developers) be outweighed by the ‘social benefits’ (benefits to society as a result of the actions of the developers);
- democratic regard for individual rights and obligations;
- compliance with these principles during all stages of the planning, implementation and decommissioning of the proposals (i.e. from ‘cradle to grave’);
- and the opportunity for public and specialist input in the decision-making process.

The Environmental Impact Assessment Regulations that took effect in December 2014 regulate the procedures and criteria for the submission, processing, consideration and decision on applications for environmental authorisation of listed activities.
The general principles contained within this document apply to all PLANNING PHASE, CONSTRUCTION PHASE, and OPERATIONAL PHASE activities regarding the proposed development.

2.2. SITE SPECIFIC INFORMATION:

Sweet Home Farms (PTY) Ltd intends to expand on its current high-density livestock farming by adding 23 more cattle feedlot cells and constructing a new sheep feedlot. The proposed development is situated on farm Lily-Fontein No. 156, located within the jurisdiction of the Ngwathe Local Municipality, Free State Province. Existing infrastructure located on the proposed development site include a cattle handling station and a cattle feedlot consisting of 30 cells (500 m^2 per cell). The existing cattle feedlot currently holds 480 LSUs.
Sweet Home Farms (PTY) Ltd has requested expertise of a suitable service provider to carry out the necessary assessments, planning and investigations in order to obtain the necessary permits (Environmental Authorisation and WULA) to capacitate the new development. Environmental Management Group (Pty) Ltd. was appointed to conduct a Basic Assessment Report (BAR) for the proposed development and in so doing obtain Environmental Authorisation and Water Use License.
The site's topography is described as an undulating plain with a gradual 10 m elevation loss across 320 m in an NNE direction. The study area's downwards leaning slope favours the proposed development as runoff from the proposed feedlot can easily be channelled through a network of stormwater channels into the two-phase organic waste management system.
Organic waste produced by the proposed development's operation will be a mixture of manure and soil, forming a biodegradable by-product. Healthy feedlot cattle produce manure equivalent to 5-6% of their body weight per day. The proposed cattle feedlot production scheme aims to introduce new cattle every four months with a starting weight of 250 kg and an exit weight of 500 kg. Calculated as the average between the two weight classes, each LSU will produce 562.5 kg manure per month.
Sheep produce manure equivalent to 5% of their body weight per day. The proposed sheep feedlot production scheme aims to introduce new sheep every four months, with a starting weight of 25 kg and an exit weight of 50 kg. Calculated as the average between the two weight classes, each SSU will produce 56 kg manure per month.
The concentrated quantities of manure resulting from high-density livestock farming often lead to the proliferation of unwanted pest insects such as flies. To mitigate this, probiotics will be introduced into the livestock feed and will be sprayed onto the feedlots to limit the proliferation of unwanted pests.
The feedlots will be cleaned each month which involves the mechanical removal of manure. The collected waste will be transported to a temporary storage/drying area lined by an impenetrable material, preventing seepage into the ground. Manure

stockpiles will be covered with a 50% shade net until dry. The dried manure will be used as fertiliser on the surrounding cultivated fields.
The stormwater network will redirect runoff from the feedlots into a sedimentation pond, trapping solid waste before entering the evaporation pond (waste lagoon). Both the sedimentation pond and waste lagoon will be lined by an impenetrable material, preventing seepage. The accumulated solids within the sedimentation pond will be cleaned when it reaches 70% capacity. Waste from the sedimentation pond will be transported to the temporary waste storage area to dry out and eventually used as fertiliser. The water within the evaporation pond (waste lagoon) will dry naturally and eventually be used as fertiliser in the surrounding cultivated fields.
Dimensions of the sedimentation pond and waste lagoon are as follows:
Sedimentation pond:
(W)7.7 m x (L)72 m x (D)1.5 m _ Volume: 831.6 m^3
Waste lagoon:
(W)23 m x (L)145 m x (D)1 m _ Volume: 3335 m^3

2.3. INTERPRETATIONS:

The implementation of the EMP is not an additional or “add on” requirement. The EMP is legally binding through NEMA. The proponent is to ensure that through the project tender process the EMP forms part of the Project Contract Document for the proposed development to be incorporated in line with:

2.3.1. General project specifications; and
2.3.2. SANS 1200 A or SANS 1200 AA, as applicable.

3. ROLE PLAYERS AND RESPONSIBILITY MATRIX:

In order for the EMP to be successfully implemented, all the role players involved in the project need to co-operate. For this to happen, role players must clearly understand their roles and responsibilities in the project, must be professional, form respectful and transparent relationships, and maintain open lines of communication.

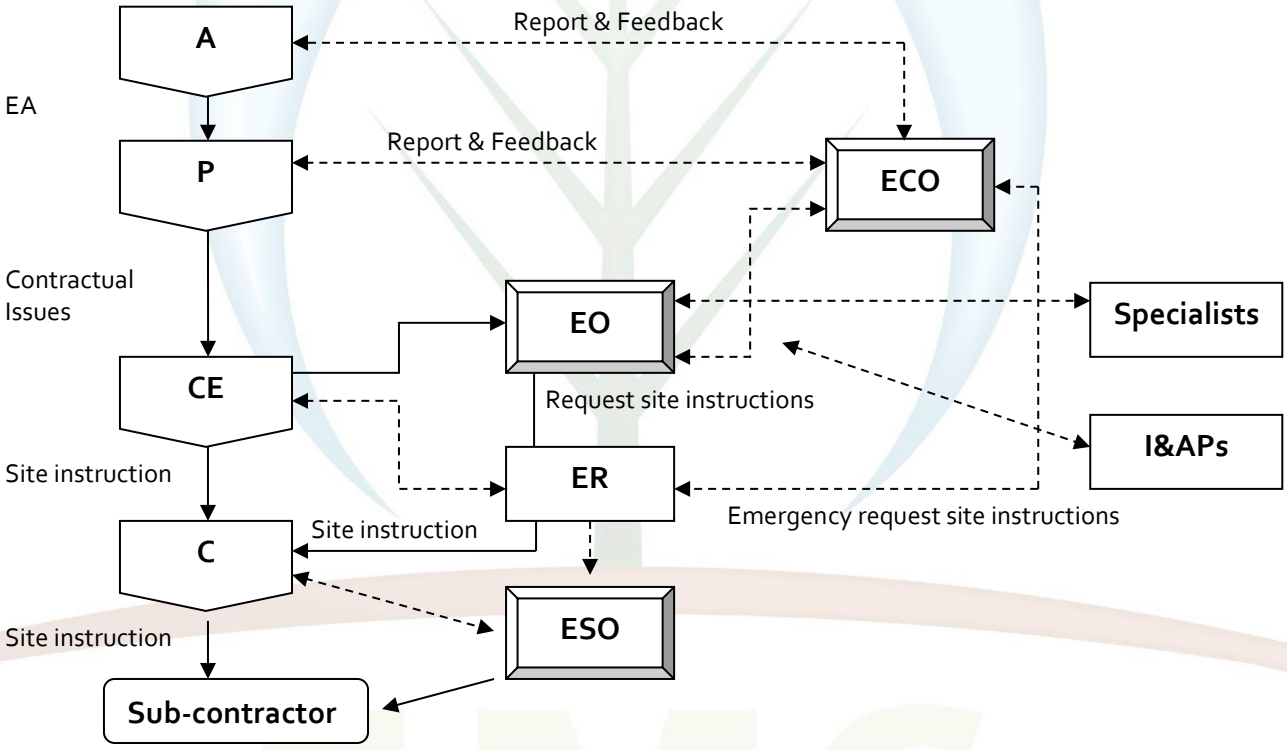
Table 1: Functions and Responsibilities of Project Team

KEY	FUNCTION	RESPONSIBILITY
P	Proponent	Proponent is ultimately accountable for ensuring compliance to the EMP. The ECO must be contracted by the Proponent (full time or part time depending on the size of the project) as an independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of the EMP for the project. The Proponent is further responsible for providing and giving mandate to enable the ECO to perform responsibilities. The developer must ensure that the ECO is integrated as part of the project team.
CE	Consulting Engineer	Contracted by the developer to design and specify the project engineering aspects. Generally, the engineer runs the works contract. The CE may also fulfil the role of Project Manager on the proponent's behalf (See PM).
PM	Project Manager	The Project Manager has over-all responsibility for managing the project, contractors, and consultants and for ensuring that the environmental management requirements are met. The CE may also act as the PM. All decisions regarding environmental procedures must be approved by the PM. The PM has the authority to stop any decommissioning activity in contravention of the EMP in accordance with an agreed warning procedure.
ER	Engineers Representative	The consulting engineer's representative on site. Has the power/mandate to issue site instructions and in some instances, variation orders to the contractor, following request by the EO or ECO. The ER oversees site works, liaison with Contractor and ECO.
EO/EM	Environmental Officer / Environmental Manager	Appointed by the Consulting Engineers as their environmental representative on site. The EO is not independent but must rather act on behalf of the consulting engineers with the mandate to enforce compliance under the project contract, which must include the EMP. The EO has the directive to issue non-conformance and hazard certificates. Further, in terms of accepted industry practice the EO could issue the equivalent of a "cease works" instruction only in exceptional circumstances where serious environmental harm has been or is about to be caused i.e. in cases of extreme urgency and then only when the ER is absent. The EO must form part of the project team and be involved in all aspects of project planning that can influence environmental conditions on the site. On certain types of projects, such as linear developments (fences, pipelines, etc), the EO must also be the liaison between the contractor and landowners. The EO must attend relevant project meetings, conduct daily inspections to monitor compliance with the EMP, and be responsible for providing reports and feedback on potential environmental problems associated with the development to the project team and ECO. The EO must convey the contents of this EMP to the Contractor site team and discuss the contents in detail with the Contractor as well as undertake to conduct an induction and an environmental awareness training session prior to site handover to all contractors and their workforce.

		The EO must be suitably experienced with the relevant qualifications and preferably competent in construction related methods and practices.
ECO	Environmental Control Officer	An independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of Environmental Authorisations (EA's), and the EMP for the project. The ECO must be on site prior to any site establishment and must endeavour to form an integral part of the project team. The ECO must be proactive and have access to specialist expertise as and when required, these include botanists, ecologists, etc. Further, the ECO must also have access to expertise such as game capture, snake catching, etc. The ECO must conduct audits on compliance to relevant environmental legislation, conditions of EA, and the EMP for the project. The size and sensitivity of the development, based on the EIA, will determine the frequency at which the ECO will be required to conduct audits. (A minimum of a monthly site inspection must be undertaken). The ECO must be the liaison between the relevant authorities and the project team. The ECO must communicate and inform the developer and consulting engineers of any changes to environmental conditions as required by relevant authoritative bodies. The ECO must ensure that the registration and updating of all relevant EMP documentation is carried out. The ECO must be suitably experienced with the relevant environmental management qualifications and preferably competent in construction related methods and practices. The ECO must handle information received from whistle blowers as confidential and must address and report these incidences to the relevant Authority as soon as possible. On small projects, where no EO is appointed, the ECO must convey the contents of this EMP to the Contractor site team and discuss the contents in detail with the Contractor as well as undertake to conduct an induction and an environmental awareness training session prior to site handover to all contractors and their workforce.
C	Contractor	The principle contractor, hereafter known as the 'Contractor', is responsible for implementation and compliance with the requirements of the EMP and conditions of the EA's, contract and relevant environmental legislation. The Contractor must ensure that all sub-contractors have a copy of and are fully aware of the content and requirements of this EMP. The contractor is required, where specified, to provide Method Statements setting out in detail how the management actions contained in the EMP will be implemented.
ESO	Environmental Site Officer	The ESO is employed by the Contractor as his/her environmental representative to monitor, review and verify compliance with the EMP by the contractor. This is not an independent appointment; rather the ESO must be a respected member of the contractor's management team. Dependent on the size of the development the ESO must be on site one week prior to the commencement of construction. The ESO must ensure that he/she is involved at **all phases** of the constriction (from site clearance to rehabilitation).
A	Lead Authority	The authorities are the relevant environmental department that has issued the Environmental Authorisation. The authorities are responsible for ensuring that the monitoring of the EMP and other authorisation documentation is carried out, this will

		be achieved by reviewing audit reports submitted by the ECO and conducting regular site visits.
OA	Other Authorities	Other authorities are those that may be involved in the approval process of an EMP. Their involvement may include reviewing EMP's to ensure the accuracy of the information relevant to their specific mandate. Other authorities may be involved in the development, review or implementation of an EMP. For example, if a specific development requires a water use licence for the relevant national authority then that authority should review and comment on the content of the particular section pertaining to that mandate.
EAP	Environmental Assessment Practitioner	The definition of an environmental assessment practitioner in Section 1 of NEMA is "*the individual responsible for the planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management plans or any other appropriate environmental instruments introduced through regulations".*

3.1. RECOMMENDED FORMAL ENVIRONMENTAL COMMUNICATION CHANNELS:



3.2. OBJECTIVES OF THE EMP:

The specific objectives of this EMP are to:

- To provide explicit operational guidelines and environmental monitoring requirements during the construction phases so that activities are done in environmentally responsible and sustainable manner.

- To benefit the host communities, minimise the impacts on the environment and to ensure the health and safety of the community by creating a development that eliminates unacceptable health hazards and ensures public and animal safety.
- To enable proponent and its contractors to use resources efficiently and effectively during the project lifecycle in order to reduce wastage and thereby reduce associated negative environmental impacts. In addition, the aim is also to handle waste streams responsibly and apply the 'reduce, re-use and recycle' principle, wherever possible
- To leave areas disturbed by construction in a rehabilitated, stable, non-polluting and tidy condition.

4. ACTIVITIES COVERED BY THE EMP:

4.1. PLANNING STAGE:

The project planning stage consists of layout design surveying and ensuring that all plans and required contracts, permits/ licenses and agreements are set in place.

4.2. CONSTRUCTION PHASE:

The construction phase will start after the relevant authorizations are granted. The construction phase involves earthwork, structure development, service provision and finishing. The construction phase will start after the relevant authorizations are granted. This phase includes:

- transportation of construction material and other resource inputs;
- use of heavy construction equipment on site;
- storage of input materials and disposal of waste generated;
- construction of building structures;
- rehabilitation of the disturbed areas through:
  - demolition/removal of any unwanted construction fences and infrastructure;
  - top-soiling and re-vegetation of areas disturbed by construction.

5. IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS:

The contractor shall identify likely aspects before commencing with any construction activity. Examples of environment aspects include:

- Waste generation
- Storm water discharge
- Chemical use operations
- Energy use operations
- Water use operations
- Use of natural resources
- Noise generation

Thereafter the contractor shall programme his work in such a way that each cause and effect of a construction activity is also identified and the activity planned so as to prevent any impacts from happening. If prevention is not practicable, or in the event of mishap or misapplication, the contractor shall provide plans and measures for the engineer's approval, which will limit and contain the magnitude, duration and intensity of the impact. The contractor shall demonstrate that he is capable of carrying out any repair and reinstatement of the damaged environment. Listed below are some environmental impacts that could adversely alter an aspect of the environment through usual construction activities:

- Pollution of atmosphere, soil or water
- Destruction or removal of fauna and flora and effect on biological diversity
- Deformation of the landscape
- Soil erosion
- Effect on the built environment

6. LEGAL REQUIREMENTS:

6.1. GENERAL:

Construction activities will be according to the best industry practices, as identified in the project documents. This EMP, which forms an integral part of the contract documents, informs the contractor as to his duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by Construction activities associated with the project. The contractor should note that obligations imposed by the EMP are legally binding in terms of environmental statutory legislation and in terms of the additional conditions to the general conditions of contract that pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications then the latter shall prevail.

6.2. STATUTORY AND OTHER APPLICABLE LEGISLATION:

The contractor is deemed to have made himself conversant with all legislation pertaining to the environment, including provincial and local government ordinances, which may be applicable to the contract.

7. RECORD KEEPING:

All records related to the implementation of this management plan (e.g. site instruction book and method statements) must be kept together in an office where it is safe and can be retrieved easily. These records should be kept for a minimum of two years and should at any time be available for scrutiny by any relevant authorities.

It is recommended that photographs are taken of the site prior to, during and immediately after construction as a visual reference. These photographs should be stored with other records related to this EMP.

7.1. COMPLIANCE AND PENALTIES:

The contractor shall act immediately when a notice of non-compliance is received, correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register, and the response noted with the date and action taken.

Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed; therefore, any avoidable non-compliance, dependant on severity, shall be considered sufficient grounds for contact to be made with relevant provincial or national authorities.

The responsible provincial or national authorities shall ensure compliance and impose penalties relevant to the transgression as allowed for within its statutory powers.

7.2. REPORT AVAILABILITY:

Copies of this EMP shall be kept at the construction site office and will be accessible to all senior contract personnel. All senior personnel working on the project shall be required to familiarise themselves with the contents of this document.

8. ENVIRONMENTAL MITIGATION SPECIFICATIONS FOR IMPACTS:

8.1.1. *SOCIAL ENVIRONMENTAL ISSUES:*

It is important to minimize any negative perception, by taking proactive measures to prevent any social conflicts or social gaps and to develop a positive attitude within the community of the project. The following management strategies are to be implemented:

- Transparent fair recruitment and procurement practices. The contractor chosen should maximize the involvement of local communities in construction and support activities, to the extent possible, based on available skill levels. Whenever possible, training programmes that will benefit both construction stage skills requirements and long-term employment demand should be developed.
- The recruitment selection process should seek to promote gender equality and the employment of women wherever possible.
- Priority should be given to the local suppliers of goods and services, which meet requirements of project procurement as far as is possible. In order to optimize the opportunities for local businesses to supply goods and services to the project, the contractor will do a survey of the capabilities of the goods and services that are locally available that are of an acceptable standard and quality and a survey of the capabilities of local construction companies and identify opportunities for local suppliers.

- A public complaint register and system to ensure that community complaints clearly investigated and adequate remedial taken should be instituted.
- Adequate notification should be done to people residing close to where construction activities are taking place especially if they are to be affected by them. In addition, there should be a system of compensation for any damages to infrastructure that may occur.
- Each worker should be required to abide by a Code of Conduct which will limit unsavoury activities in local towns and communities and restrict certain behaviours in the work sites and accommodation.

8.1.2. *FENCING:*

- Fencing of the campsite and construction area (if applicable) shall be suitably secured to prohibit access by livestock and local fauna.
- No unauthorised pedestrian or vehicular access shall be allowed into fenced off-limits areas.
- Fencing shall be kept neat at all times. The contractor shall be responsible for the maintenance of all fences.
- If temporary fencing is removed temporarily for the execution of work, the contractor shall reinstate it as soon as practicable.
- Breaches in the fencing must be repaired immediately.
- The purpose of the fenced areas is to control construction and personnel activity within the designated areas, and limit unauthorised access.
- No fences or gates that provide access to the site/construction campsite may be cut, lowered, removed or damaged in any way.
- Leave private gates, as they are found (open or closed). Gates to adjacent properties or onto public roads must be closed at all times.
- Open gates must be guarded to prevent animals from straying onto adjacent camps, roads or properties.

8.1.3. *CLEARING AND GRUBBING:*

- Contractor shall at all times carefully consider what machinery is appropriate to the task while minimising the extent of environmental damage.
- Topsoil shall be cleared of woody vegetation and specifically exotic vegetation before ripping and removing.
- The topsoil is regarded as the top 300 mm of the soil profile irrespective of the fertility appearance.
- Topsoil is to be stripped when it is in as dry a condition as possible in order to prevent compaction.
- The topsoil, including the existing grass cover is to be shallowly ripped (only the depth of the topsoil) before removal. This is to ensure that organic plant material, and the natural seed base is included in the stripping process.

- Soil stockpiles shall not be higher than 2.5 m or stored for a period longer than one year. The slopes of soil stockpiles shall not be steeper than 1m vertical to 2.5m horizontal.
- No vehicles shall be allowed access onto the stockpiles after they have been placed.
- Stockpiles shall not be allowed to become contaminated with oil, diesel, petrol, garbage or any other material, which may inhibit the later growth of vegetation.
- The contractor shall apply soil conservation measures to the stockpiles to prevent erosion. This can include the use of erosion control fabric or grass seeding.
- If at any stage of the clearing operations archaeological artefacts are unearthed or identified the relevant organisations are to be contacted immediately to conduct a thorough scientific investigation of the finds.
- The works shall be cleared of alien vegetation as identified by the ESA. An effort must be made to remove the entire root system where after the plant shall be left to dry out on a hard surface that will not facilitate the germination of seed.
- If applicable, it must be ascertained (in writing) from the landowner concerned whether he wishes to retain the cleared bush, trees and shrubs. If not, they must be removed to the satisfaction of the owner, bearing in mind that it does not contravene waste disposal regulations.
- Burning of any material is not permitted under any circumstances.
- All unattended trenches/ excavations should be demarcated.

8.1.4. *ESTABLISHING OFFICE / CAMP SITES:*

- The area chosen for these purposes shall be the minimum reasonably required and which will involve the least disturbance to vegetation.
- Fires will only be allowed in facilities or equipment specially constructed for this purpose. If required by applicable legislation, a fire-break shall be cleared around the perimeter of the camp and office sites.
- Lighting and noise disturbance or any other form of disturbance that may have an effect on the landowner/tenant/persons lawfully living in the vicinity shall be kept to a minimum.
- Chemical toilet facilities or other approved toilet facilities should be sited in such a way that they do not cause water or other pollution. The use of existing facilities must take place in consultation with the landowner/tenant.
- In cases where facilities are linked to existing sewerage structures, all necessary regulatory requirements concerning construction and maintenance should be adhered to. The facilities must comply with water act requirements.
- Adequate signage must be provided and the area must be appropriated secured.
- Adequate parking and security should be provided at the campsites.
- All formal documentation should be kept at the site office, and be made available during monthly audits.

8.1.5. *AIR QUALITY:*

The main sources of impact on air quality are mobilization of equipment, land clearing and earthworks. To ensure air quality characteristics of the project area are maintained near the baseline conditions during of the construction stage, the following measures shall be done:

- Regular inspection and scheduled maintenance of all equipment to ensure that construction vehicles are in good condition, are utilising fuel efficiently and do not smoke.
- Periodically watering the bare surfaces and excavations during construction to keep the dust level down.
- Slowing down the vehicles carrying the construction materials to reduce dust generation.
- Properly wrapping the material truck containers with cover to avoid dust spreads on windy days and prohibiting transport of over loaded trucks.
- Providing and using the safety equipment such as dust mask, noise cover for employees who work near the dusty location such as the heavy equipment operators
- Optimization of working schedule and work to help to minimize several material vehicle mobilization trips.

8.1.6. *NOISE AND VIBRATIONS:*

The primary noise sources will be vehicles and equipment utilized during the construction stage including graders, bulldozers, general purpose vehicles, etc. To manage the impact the following will be done:

- Working schedule for the activities with high noise level will be arranged between 08:00 AM to 17:00 PM.
- Only well-maintained vehicles and equipment should be operated onsite and all machinery should be serviced regularly during the construction stage.
- Avoiding unnecessary simultaneous noisy activities.
- No amplified music shall be allowed at the site.
- Selecting ‘quiet’ construction equipment and working method and avoiding unnecessary revving and hooting.
- Providing ear protection for activities that are likely to create noise in order to protect worker’s health and safety.

8.1.7. *EROSION CONTROL:*

Construction activities will require the removal of vegetation cover, potentially resulting in soil erosion and subsequent impacts on surface water quality due to uncontrolled rainwater run-off or mechanical/wind action. The following measures are necessary to minimise impacts:

- Clearance of vegetation should be restricted to the absolute minimum required to facilitate construction activities to proceed. Disturbance of topsoil and vegetation rootstock must be minimized as far as possible.
- Appropriate drainage systems will be built to accommodate the surface water movement from the rain and wind.
- Construction activities shall take place only within the approved demarcated area. Appropriate drainage facilities must be constructed to make sure water runs smoothly downstream.
- Top soil layer will be kept to rehabilitate and will be adequately stored to protect it from erosion.
- Areas where construction has been finished should immediately be rehabilitated up to industry relevant standards.

8.1.8. *CONTAMINATION OF LAND:*

Land contamination may occur as a result of fuel and oil leaks or spills and/or poor fuel, chemical and waste storage. The following measures are necessary to mitigate/ avoid the adverse effects of land contamination:

- The storage areas shall be securely fenced and appropriately marked to indicate the goods in the storage. Material Safety Data Sheets should be kept for all hazardous materials on site.
- All hazardous substances and stocks such as diesel, oils, detergents, etc., shall be stored in areas with impervious flooring such as concrete and properly bunded. Drip pans, other impervious surface, shall be installed in such storage areas with a view to prevent soil and water pollution.
- Dedicated impervious areas should be designated for concrete mixing and the spillage from concrete mixed should be cleaned immediately.
- The waste management strategy on the construction site should be hinged on the waste hierarchy model of '*reduce, reuse and recycle'* waste in order to reduce the ultimate impact on the environment.
- All used oils, grease or hydraulic fluids shall be placed in appropriate impervious containers and these receptacles will be removed from the site on a regular basis for disposal at a licensed disposal facility or sent for recycling/reuse with a registered facility.
- Residues from machinery maintenance and other sources contaminated with hazardous waste should be stored in proper containers that avoid seepage to ground.
- Spills should be cleaned up immediately by removing the spillage together with the polluted soil and by disposing of them at a recognised facility.
- Adequate waste receptacles shall be made available and all waste shall be adequately stored so that it does not pose a pollution risk.
- General waste is to be disposed of through the municipal service. Any other waste will be disposed of through only licensed waste disposal facilities.

- Volatile waste items such as plastic bags, cement bags, etc. should be temporarily stored in a suitable manner as to prevent it from being dispersed via wind.
- Feedlots should be cleaned once a month via means of mechanical removal.
- Seepage into lower soil strata should be prevented by lining the stormwater network, waste lagoon, sedimentation pond and the temporary drying / storage area with an impermeable layer such as:
    - Synthetic plastic sheets
    - Concrete
    - Clay
- The organic breakdown of manure should be promoted by either introducing lime or composting bacteria to manure stockpiles.

8.1.9. *SURFACE WATER QUALITY:*

Poor chemical storage and poor waste management practices may lead to the contamination of water sources. Sewage and sanitary effluent have the potential to adversely affect the quality of receiving water bodies unless properly managed. To eliminate the risk of contamination, the following measures have to be instituted:

- Suitable covered receptacles for waste shall be available at all times and conveniently placed for the disposal of waste.
- Spills or overflows from chemical or other toilets used by construction staff must be dealt with by a sanitation expert immediately.
- Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and treated prior to discharge or removed from the site for appropriate disposal at a recognised facility.
- A comprehensive stormwater management plan should be implemented that ensures all runoff from the feedlots are channelled into the two-phase treatment system.
- The stormwater network should prevent the mixing of clean runoff with runoff from the feedlots via culverts, bunds or drains.

8.1.10. *WATER USAGE:*

- Any water that is used which does not emanate from Municipality supplies must be registered and authorised by the Department of Water Affairs prior to usage commencement.
- The contractor shall promote responsible water use by all personnel.
- The contractor is requested to notify the Department of Water Affairs in writing of the proposed commencement of construction and provide the department with a construction programme, prior to any work commencing in proximity of a river or riverbank.
- Any activity which adversely affects aquatic fauna and flora shall be forbidden.

8.1.11. *FAUNA AND FLORA:*

Fauna and flora are negatively impacted by the clearance of vegetation, noise from construction activities (disturbance) and gathering/ hunting of flora and fauna by workers. The following measures are necessary to mitigate impacts.

- Clearance of vegetation should be restricted to the absolute minimum required to facilitate access and undertaken construction activities.
- Topsoil shall be removed and kept separate for use during rehabilitation.
- The Contractor shall be responsible for the removal of alien vegetation within areas affected by the construction activities including cleared ground and topsoil stockpiles. Equipment used should be regularly washed down to avoid transporting seeds (invasive species) or plant diseases.
- All protected plant species will be demarcated using construction tape or any relevant means as to prevent their damage.
- No **protected or endangered** plant species shall be removed/killed/pruned or damaged in any way without a permit or license.
- Protected species should be incorporated into the layout and design as far as possible.
- No trees or shrubs will be felled or damaged for the purpose of obtaining firewood, unless agreed to by the landowner/tenant.
- The rehabilitation activities require the re-planting of vegetation in any areas cleared for the construction activities. This will promote soil stability, improve the visual environment and provide faunal habitat.
- Hunting/gathering/trapping of wild fauna by construction workers must not be permitted.
- Localized habitat features such as nests, dens or burrow sites should be avoided as much as possible. In addition, care should be taken in working in areas of active nesting, spawning, and feeding areas.

8.1.12. *SAFETY:*

- The Contractor shall be responsible for the protection of the public and public property from any dangers associated with the construction and operation of the road activities,
- All work should be handled in accordance with the Occupational Health and Safety Act and adequate safety precautions taken and suitable sanitation facilities provided in line with the requirements of the act. It is the duty of the contactor to ensure that the all protective measures against accidents are done.
- Any works/activities which may pose a hazard to humans and/or domestic animals are to be protected or cordoned off and, if appropriate, warning signage erected.
- Appropriate security is to be provided at the site to protect equipment and provide for a safe construction site and work areas.
- Any damage caused as a result of the construction activities shall be repaired to the satisfaction of the project manager and owner.

8.1.13. *HISTORICAL ARCHEOLOGICAL AND HERITAGE IMPACTS:*

- A 25 m no-go buffer should be implemented around the historical building and the two graveyards. This buffer should be adhered to and no disturbance activities may be conducted within this area for the duration of the development and its operation.
- Should any other cultural or archaeological artefacts be found during operational activities, operations must cease immediately and the area secured and SAPS, and the South African Heritage Resources Agency and other relevant authorities informed immediately.
- No site of archaeological or historical significance maybe moved without a permit from the SAHRA. Any permitted removal of any archaeological or historical matter must be done under the strict supervision of a qualified registered archaeologist.

8.1.14. *REHABILITATION:*

- On completion of operations, all buildings, structures or objects on the camp/office site shall be demolished and removed.
- Where office/camp sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped to aerate and promote the infiltration of water.
- On completion of operations, the areas shall be cleared of any contaminated soil, which must be dumped as per the waste management plan.
- All infrastructure, equipment, plant, temporary housing and roads and other items used during the construction period will be removed from the site and rehabilitated if necessary.
- Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the area and disposed of at a registered waste disposal facility. It will not be permitted to be buried or burned on the site.
- Disturbed areas should be left in a safe and stable manner. Preventative measures may be necessary to construct adequate drainage structures including ditches and other structures to facilitate the movement of surface water.
- Photographs of the camp and office sites, before and during the construction and after rehabilitation, shall be taken at selected fixed points and kept on record.
- The disturbed surfaces shall then be ripped or ploughed and the topsoil previously stored shall be spread evenly to its original depth over the whole area. The area shall then be fertilised if necessary (based on a soil analysis).
- Exotic species will have to be continually removed to prevent their proliferation.
- The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, there might be need that the soil be analysed and any

deleterious effects on the soil arising from the construction operation be corrected and the area be seeded with a seed mix to his or her specification.

8.1.15. *HANDLING OF EMERGENCIES:*

- The contractor should identify all situations that can lead to emergency situations and provide response strategies. The situations should include fire and major chemical spill.
- Contact details of all departments/service providers to be contacted in case of an emergency shall be made available to employees.
- Equipment for dealing with emergencies such as spill kits, firefighting equipment, first aid boxes etc shall be made available and personnel properly trained in its use.
- All staff on site should be trained on how to handle emergency situations and emergency drills/ rehearsals should be conducted periodically to ensure that staff prepared.
- All emergencies/ incidents should be reported and distributed to the relevant parties.

8.2. METHOD STATEMENTS:

The Contractor shall submit written Method Statements to for all environmentally sensitive aspects of the work. It should be noted that Method Statements must contain sufficient information and detail to mitigate the potential impacts of the works on the environment. The Contractor will also need to thoroughly understand what is required of him / her in order to undertake the works. Work shall not commence until Method Statements have been put in place.

Appendix H: Details of the EAP

ENVIRONMENTAL MANAGEMENT GROUP

Specialists in Environmental Management
Integrating Industry and Infrastructure with the Environment

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Email: ckruger@envmgp.com
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CURRICULUM VITAE

Salmon E. van Rooyen (Sampie)

Director Managing & Environmental Assessment Practitioner & Ecologist
(MSc. Cand.Sci.Nat.116554; IAIA Reg No. 5901)

Personal Information

ID:	9205095047086
Nationality:	South African
Gender:	Male
Health:	Excellent
Vehicle License:	Code A&B
Language:	English/Afrikaans
Contact number:	083 678 3032
Email:	svr@envmgp.com

Skills and Responsibilities

- Use of Geographical Information Systems;
- Conduct Environmental Impact Assessments and other Environmental Technical Investigations;
- Apply and obtain, water licenses, mining permits and environmental authorisations for clients;
- Use different GIS datasets in order to create new information or investigate patterns for projects;
- Conduct environmental compliance and other environmental audits;
- Microsoft Office and Planet GIS;
- Project Management;
- Biodiversity Assessments;
- Agricultural advisory.

Professional Experience

Date	5/2017 - Present
Organisation	Environmental Management Group
Position	Director; EAP; Ecologist

Date	8/ 2016 - 5/2017
Organisation	Terra Works Environmental
Position	Environmental scientist/ Office Manager

Date	1/2016 - 8/2016
Organisation	Bokamoso Environmental
Position	Environmental Specialist (Fauna and Flora), Water Use License Application Consultant, General Environmental Consultant.
Responsibilities	Conducting specialist Faunal and Flora assessments. Applying for Water Use Licenses. GIS Mapping. Environmental Impact Assessments.

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Date	1/2015 – 6/2015
Organisation	Agreenco
Position	Flora and Fauna Specialist
Responsibilities	Rehabilitation and Alien eradication on game farm in the Magaliesburg region, Rustenburg.

Date	2014 - 2015
Organisation	NWU Potchefstroom
Position	Practical demonstrator
Responsibilities	Responsible for laboratory preparation for NWU and UNISA Botany practical sessions, assistant facilitator of the practical syllabus, invigilating practical exams.

Date	1/2015 – 11/2015
Organisation	NWU Potchefstroom
Position	Practical Post-Graduate Student Assistant
Responsibilities	Assisting Post-Graduate students in veld surveying methods and technologies.

Date	1/2014 – 6/2014
Organisation	E-Tek Consultants
Position	Contract, Monitoring specialist on De Beers Mining, Kimberley.
Responsibilities	Monitoring rehabilitated tailings on De Beers mines.

Date	2008 - 2016
Organisation	Monswario Boerdery
Position	Assistant Farm Manager
Responsibilities	Farming experience of Bonsmara cattle and Meat-master sheep, as well as veld management practices.

Education

Institution	Degree(s) or Diploma(s) obtained
North West University Potchefstroom 2011 – 2013	BSc. Environmental and Biological Sciences and Tourism
North West University Potchefstroom 2014 – 2015	Hons BSc. Environmental Sciences (*Ecology: Ecological Remediation & Sustainable development*)
North West University Potchefstroom 2015 – 2016	MSc BSc. Environmental Sciences (*Ecological Remediation & Sustainable Management*)
North West University Potchefstroom 2015	Short Course at CEM (Centre for Environmental Management) in Basic Principles of Ecological Rehabilitation and Mine closure.

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Research and Conferences

Masters degree research project (2015 January-2016 November)

Ecological Remediation and Sustainable Management

Supervisors: Prof. Klaus Kellner and Dr. Niels Dreber

Title: Composition and structure of woody vegetation in thickened and controlled bushveld savanna in the Molopo, South Africa

Honours degree research project (2014 January-2014 November)

Ecological Remediation and Sustainable Management

Supervisors: Prof. Klaus Kellner and Dr. Niels Dreber

Title: Comparison of plant diversity of shrub thickened and chemically controlled savannas in the Molopo district, North-West Province, South Africa

Conference presentations (2014-2015)

- Comparison of plant diversity of shrub thickened and chemically controlled savannas in the Molopo district, North-West Province, South Africa. Biological Sciences Symposium, Potchefstroom, 2014. Presentation.
- Comparison of plant diversity of shrub thickened and chemically controlled savannas in the Molopo district, North-West Province, South Africa. Poster presentation: Arid-Zone Ecology and Thicket Fusion Form in 2014.
- Attending the Third Annual LaRSSA Conference (Land Rehabilitation Society of Southern Africa) (2015).

Experience of Academic Introductory Modules

Introduction to Environmental Management

Introduction to Landscape Ecology

Conservation Ecology

Introduction to GIS Applications

Restoration of degraded ecosystems

Microbial Ecology

Short Course at CEM (Centre for Environmental Management) in Basic Principles of Ecological Rehabilitation and Mine closure 28 Septermber – 2 October 2015

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Environmental Impact Assessment Projects

Type	Client	Project
Waste	**Metsimaholo Local Municipality**	Scoping/EIA; WULA application for the development of a new landfill site in Sasolburg
	Joe Morolong Local Municipality	Scoping/EIA application for the development of a new landfill site in Hotazel
Mining Permits or Rights	**Danoher Contracting (PTY) Ltd**	Mining Right application for a gravel BP in Bloemfontein
	Michael Gutter	Mining Permit in Theunissen, Free State Province
	Department of Rural Development and Land Reform	Mining Permit application for a sandstone Quarry in Zastron
Road Construction	**Free State Department of Police, Roads and Transport**	BAR/IWUL/Mining Permit applications/ECO for the Deneysville - Jim Fouché road rehabilitation
	Free State Department of Police, Roads and Transport	BAR/IWUL/Mining Permit applications/ECO for the Deneysville - Heilbron road upgrading
	Free State Department of Police, Roads and Transport	BAR/IWUL applications/ECO for the Schonkenville - Koppies road upgrading
	SANRAL	BAR/IWUL/ECO applications for the N1 Section 16 road upgrade
	SANRAL	ECO Periodic Maintenance on National Route N6 Sec 8 from Reddersburg (km 0.00) to Rustfontein (km37.8)
	Department of Roads and Public Works, Northern Cape	BAR/IWUL/Mining Permit applications for the MR 938 Mamatwan road upgrade
	Free State Department of Police, Roads and Transport	ECO for the internal road upgrades in Thumahole, Free State Province.

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	Department of Roads and Public Works, Northern Cape	Environmental Screening/BAR/IWUL/ DAFF Permit applications/ECO for the BK126 Magobing to Bathlaros road upgrade.
	Department of Roads and Public Works, Northern Cape	Environmental Screening/BAR/IWUL/ DAFF Permit applications/ECO for the Tsineng to Washington road upgrade.
	Department of Roads and Public Works, Northern Cape	BAR/IWUL/ DAFF Permit applications/ECO for the Hotazel to Maipeng road upgrade.
Infrastructure Developments	**Amatola Water**	IWUL application/ECO for the installation of a bulk water pipeline, Herschel
	Maluti A Phofung Local Municipality	IWUL application/ECO for the installation of a bulk water pipeline, Kestell to Qwa Qwa
	Dr. Ruth Segomotsi Mompati District Municipality	BAR and IWUL applications for the upgrading of the Waste Water Treatment Works in Stella
	Dr. Ruth Segomotsi Mompati District Municipality	Environmental Screening/EMP/IWULA/ECO for the construction of a water provision project for the village of Reivilo, Shaleng, Madipelesa, Karelstad, Mothlako, Molelema, Lykso, Pitsong and Kameelputs, North-West Province.
	Dr. Ruth Segomotsi Mompati District Municipality	Environmental Screening/ EMP/IWULA/ECO for the construction of a water provision project for the village of Schweizer-reneke, Piet Plessis, Konke, Broedersput, Geduldspan, Louwna, Mabone and Maeng, North-West Province.
	Department of Rural Development and Land Reform	Scoping EIA, WULA and Air Emission License for the development of a Brick factory in Thaba-Nchu
	Dr. Ruth Segomotsi Mompati District Municipality	Section 24G for the development of a pump station in the Wentzel Dam, Schweizer-reneke, North-West Province.
	AURECON	ECO for the upgrading of 12 Bridges in the De Aar and Upington Areas,
	EUROMID AFRICA Development	EIA/Scoping/IWULA and ECO for MATJHABENG PRECINCT IDP PROJECT 201621, Free State Province.
	Umfundu Professional Services CC.	IWULA and EIA/Scoping for the Mmamahabane cemetery establishment, Free State

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	LMV (PTY) LTD.	Environmental Screening for the school developmentin Maokeng (Kroonstad) - Erwe 1500 & 24628, Free State Province
	AURECON	Environmental Screening/BAR/WULA/ECO for Lindley Water Treatment Works and Pipeline route, Free State Province
Residential Developments	**Greater Taung Local Municipality**	BAR application for Boipela Residential Development Extension in Reivilo
Agriculture	**VS Kunsmis**	Scoping/EIA application for expansion of storage of a dangerous good at Vrede
	Linheim	BAR/ECO for the expantion of the Linheim Sheep Feedlot, Free State Province
	Wildeklawer	BAR application for the expansion of pivot systems near Barkley West
	Department of Rural Development and Land Reform	Environmental Screening/BAR and WULA application for the development of an Agri-Park in Parys, Free State
	Department of Rural Development and Land Reform	Environmental Screening/S24G and WULA application for the development of an Agri-Park in Springfontein, Free State
	Department of Rural Development and Land Reform	S24G and WULA application for the development of an Agri-Park in Thaba-Nchu, Free State
	Department of Rural Development and Land Reform	Environmental Screening for the development of an Agri-Park in Tsiame, Free State
	Department of Rural Development and Land Reform	Environmental Screening/BAR and WULA application for the development of an Agri-Park in Wesselsbron, Free State
	Department of Rural Development and Land Reform	Environmental Screening/BAR and WULA application for the development of a Farmer Production Support Unit in Koffiefontein, Free State
	Department of Rural Development and Land Reform	Environmental Screening/BAR and WULA application for the development of a Farmer Production Support Unit in Odendalsrus, Free State

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	Department of Rural Development and Land Reform	Environmental Screening for the development of a Farmer Production Support Unit in Sediba, Free State
	Department of Rural Development and Land Reform	Environmental Screening/BAR application for the development of a Farmer Production Support Unit in Kroonstad, Free State

**EIA* *Environmental Impact Assessment*
**BAR* *Basic Assessment Report*
**EMP* *Environmental Management Plan*
**S24G* *Section 24G (Application for rectification)*
**IWULA* *Integrated Water Use License Application*
**ECO* *Environmental Control Officer*

Ecological Specialist Reports

Fauna Habitat Assessment Specialist Reports:

- **Johannesburg**
  - Clubview extention 95 & 91: Mixed use Development
  - Fairlands: Road Interchange
- **Pretoria**
  - Knoppieslaagte: Industrial Development
  - Lanseria: Mixed Use Development
  - Lanseria extension 56: Mixed Use Development
  - Pretoria Gardens: Residential Development
  - Wattle Springs: Residential Development
  - PWV 17: Proposed Road Construction
  - Sunderland Ridge extention 24: Industrial Development
- **Boksburg**
  - Leeuwpoort: Residential Development
- **Randburg**
  - Land Parcel 9: Mixed Use Development
  - Land Parcel 10: Mixed Use Development
  - Waterfall Kikuyu: Mixed Use Development
- **Brits**
  - Winterveld: Residential Development

Flora Habitat Assessment Specialist Reports:

- **Johannesburg**
  - Clubview extention 95 & 91: Mixed use Development
  - Fairlands: Road Interchange

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- **Pretoria**
  - Knoppieslaagte: Industrial Development
  - Lanseria extention 51 & 53: Mixed Use Development
  - Mogale extention 5: Mixed Use Development
  - Lanseria extension 56: Mixed Use Development
  - Pretoria Gardens: Residential Development
  - Wattle Springs: Residential Development
  - PWV 17: Proposed Road Development
  - Sunderland Ridge extention 24: Industrial Development
  - Randjiesfontein: Residential Development
  - Rooihuiskraal: Mixed Use Development
  - Garsfontein: Residential Development
  - Knoppieslaagte extention 73: Industrial Development
  - Knoppieslaagte extention 95: Industrial Development
  - Swartkoppies: Mixed Use Development
  - Waterfall fields: Residential Development
  - Waterfall Ridge: Mixed Use Development
- **Boksburg**
  - Leeuwpoort: Residential Development
- **Randburg**
  - Land Parcel 9: Mixed Use Development
  - Land Parcel 10: Mixed Use Development
  - Waterfall Kikuyu: Mixed Use Development
  - Greystone: Mixed Use Development
- **Brits**
  - Winterveld: Residential Development
- **Vereeniging**
  - K 47: Proposed Road Development
  - K 77: Proposed Road Development
- **Limpopo**
  - Steelpoort: Industrial Development
- **Bloemfontein**
  - Section 16 N1 Road: Road Development
- **Kimberley**
  - Erf 11920: Residential Development
  - Wildeklaver: Agricultural Development

Appendix I: Specialist Declaration of Interest

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) amended and the Environmental Impact Assessment Regulations, 2014

PROJECT TITLE

Development and expansion of Cattle-Sheep Feedlots for Sweet Home Farms (PTY) Ltd.

Specialist:	Lloyd Rossouw		
Company Name:	Palaeo Field Services		
Contact person:	Lloyd Rossouw		
Postal address:	PO Box 38806 Langenhoven Park		
Postal code:	9330	Cell:	0842505992
Telephone:	-	Fax:	0864010679
E-mail:	lloyd.rossouw@gmail.com		
Professional affiliation(s) (if any)	Archaeology and Cultural Anthropology Specialist		

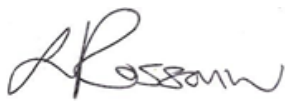
Project Consultant:	Environmental Management Group (PTY) LTD		
Contact person:	Sampie van Rooyen		
Postal address:	P.O Box 37473 Langenhoven Park		
Postal code:	37473	Fax:	051 412 6351
Telephone:	051 412 6350	Cell:	083 678 3032/0730361385
E-mail:	svr@envmgp.com		

The specialist appointed in terms of the Regulations.

I, _____Lloyd Rossouw_____, declare that:

General declaration:

- I act as the independent specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favorable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of section 24F of the Act.



Signature of the specialist:

Paleo Field Services

Name of company (if applicable):

25/01/2022

Date:

Appendix J: Additional Information

Company registration details

Certificate issued by the Commissioner of Companies & Intellectual Property Commission on Monday, August 31, 2020 at 14:55

Companies and Intellectual Property Commission
a member of the dti group

COR14.3: Registration Certificate

Registration Number: 2020 / 682355 / 07
Enterprise Name: SWEET HOME FARMS

ENTERPRISE INFORMATION

Registration Number	**2020 / 682355 / 07**
Enterprise Name	**SWEET HOME FARMS**
Registration Date	**31/08/2020**
Business Start Date	**31/08/2020**
Enterprise Type	**Private Company**
Enterprise Status	**In Business**
Financial Year End	**February**
TAX Number	

Addresses

POSTAL ADDRESS

POSBUS 37
PARK SOUTH
PARK SOUTH
GAUTENG
1910

ADDRESS OF REGISTERED OFFICE

141 RIVER ROAD
MANTEVREDE
VANDERBIJLPARK
GAUTENG
1914

ACTIVE MEMBERS / DIRECTORS

Surname and First Names	Type	ID Number / Date of Birth	Appointment Date	Addresses
KOTZE, JACOB ARNOLDUS	Director	6609285039089	31/08/2020	Postal: POSBUS 37, PARK SOUTH, PARK SOUTH, GAUTENG, 1910 Residential: 141 RIVER ROAD, MANTEVREDE, VANDERBIJLPARK, GAUTENG, 1911

Physical Address
the dti Campus - Block F
77 Meintjies Street
Sunnyside 0001

Postal Address: Companies
P O Box 429
Pretoria
0001

Docex: 256
Web: www.cipc.co.za
Contact Centre: 086 100 2472 (CIPC)
Contact Centre (International): +27 12 394 9573

Certificate issued by the Registrar of Companies & Close Corporations on Monday, March 09, 2009 01:02
Certificate of Confirmation

COMPANIES AND INTELLECTUAL PROPERTY REGISTRATION OFFICE
a member of the dti group

Registration Number	2001 / 000756 / 07
Enterprise Name	INVESTZIK FOUR
Enterprise Shortened Name	None provided.
Enterprise Translated Name	None provided.
Registration Date	16/01/2001
Business Start Date	16/01/2001
Enterprise Type	Private Company
Enterprise Status	In Business
Financial Year End	February
Tax Number	9428144142
Main Business/Main Object	
Postal Address	P O BOX 868 VEREENIGING 1930
Address of Registered Office	ALBATROS BUILDING 17 JOUBERT STREET VEREENIGING 1939

Auditors

Name	JORDAAN BOTHA AND PARTNERS INCORPORATED
Postal Address	PO BOX 868 VEREENIGING 1930

Active Directors / Officers

Surname and first names	ID number or date of birth	Director type	Appoint-ment date	Addresses
KOTZE, JACOB ARNOLDUS	6609285039089	Director	16/01/2001	Postal: P O BOX 1227, VEREENIGING, 1930 Residential: 17 OLIENHOUT STREET, SE3 VANDERBIJLPARK, 1911

Carcasses donation letter

Ricus Nel

From: Sampie van Rooyen <svr@envmgp.com>
Sent: Monday, 29 November 2021 3:50 PM
To: Ricus Nel
Subject: Fw: Donation of Dead Animals to Zoo Farm

From: Hilton Nemutamvuni
Sent: Monday, November 29, 2021 2:38 PM
To: svr@envmgp.com
Cc: admin@kotzecon.co.za
Subject: FW: Donation of Dead Animals to Zoo Farm

The previous email were sent to the address below

Hilton Nemutamvuni

t:
e: hilton.nemutamvuni@jhbcityparks.com

City Parks and Zoo House
40 De Korte Street
Braamfontein 2017

PO Box 2824
Johannesburg
South Africa

From: Hilton Nemutamvuni
Sent: Wednesday, November 10, 2021 10:58 AM
To: 'jakotze@kotzecon.con.za' <jakotze@kotzecon.con.za>
Subject: Donation of Dead Animals to Zoo Farm

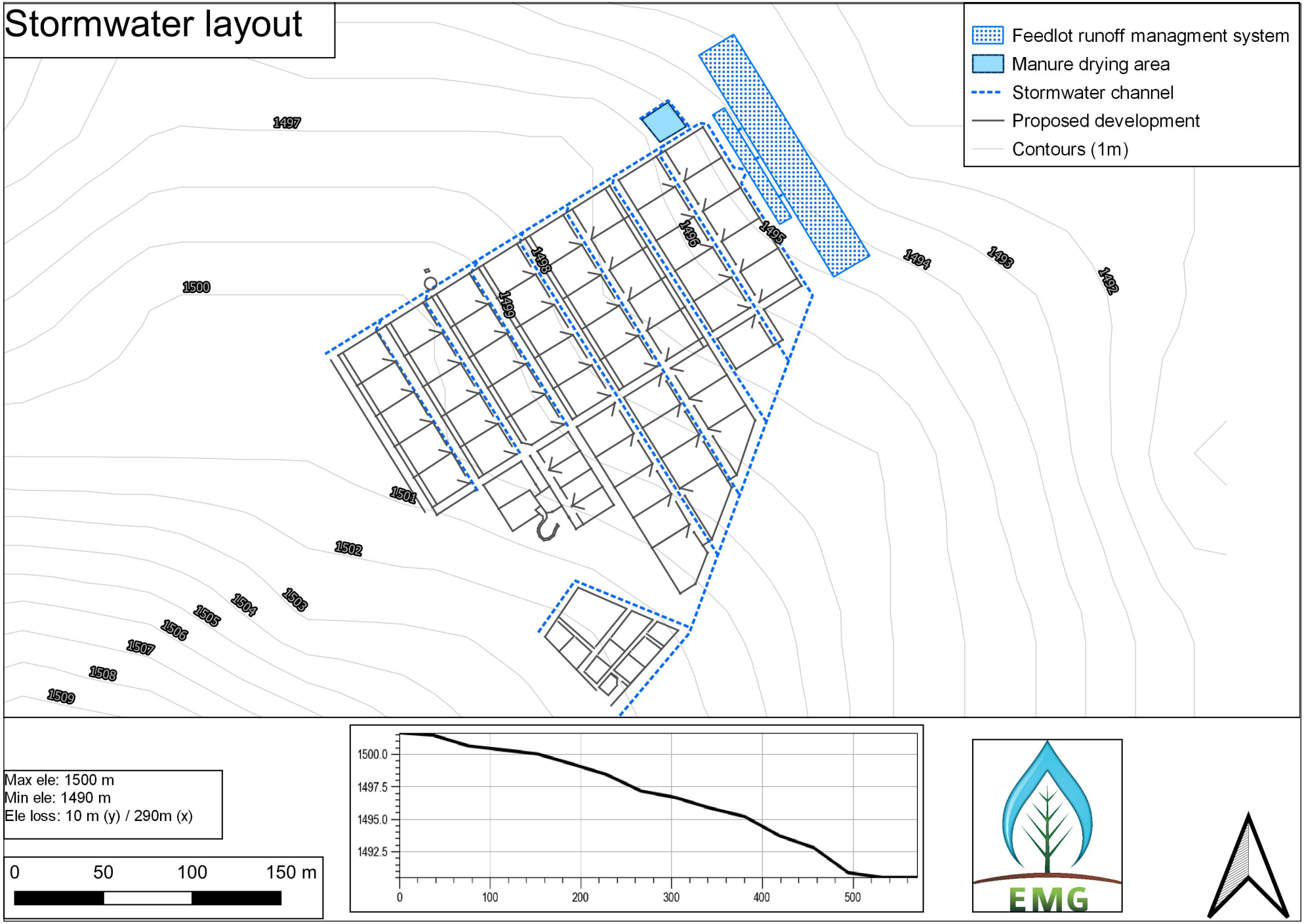
Dear Mr Peer Kotze

I trust you doing well. I would like to appreciate the donated carcasses of dead animal (Girraffe and cows) from your Farm.Our carnivores(Lions, Meerkat, Cervals ,secretary birds and groundhornbills) are now enjoying the meat.

Johannesburg Zoo and city parks is looking forward to collect more dead animals for our Lions if you have.

Regards,

Stormwater layout



Application Status

Water User

Sweet Home Farms

Application

WU23008 - Expansion and new development of livestock f

Duration: Day 0 of 90

Current Status: Pre Application Enquiry

#	Date	Applicant	Department	Duration in Days
1	Dec 8 2021 1:10PM		Pre Application Enquiry	35 Days (Current)
2	Dec 2 2021 9:27AM		Pre Application Enquiry	6 Days
3	Nov 26 2021 11:06AM	Applicant : Prepares Pre-application for submission		6 Days

Christien Kruger

From: Ewulaas_Do_Not_Reply@dws.gov.za
Sent: 02 December 2021 09:48
To: ckruger@envmgp.com
Subject: Pre-Application Water Use Enquiry has been submitted to the department (WU23008)

Dear Mrs Christien Kruger (Consultant),

A request for consultation for the following Pre-Application Water Use Enquiry has been submitted to the department :

Expansion and new development of livestock feedlots (WU23008)

Your request for consultation was submitted to :

Name : Ms F. Mamabolo (WUAAAC Chairperson)
e-Mail : MamaboloF@dws.gov.za
Tel : +27123921361

Click Here to access the Application

Kind Regards,
e-WULAAS on Behalf of **Department of Water and Sanitation**

Private Bag X313, Pretoria, 0001
Sedibeng Building, 185 Francis Baard Street, Pretoria, 0001
Tel: (012) 336 7500
Fax: (012) 323-4472
Website: www.dws.gov.za
Email: E-WULAASCalls@dws.gov.za

water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

e-WULAAS