



**Proposed red meat abattoir, near Moinooi,
Madibeng Local Municipality, North-West Province**
Draft Basic Assessment Report

11 November 2024

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EXECUTIVE SUMMARY

Bila Foods (Pty) Ltd is proposing to construct a red meat abattoir with a slaughtering capacity of 200 cattle and 200 sheep per day. The area on which the abattoir is proposed is 8Ha in extent and within the 8Ha, a shop and butchery is also proposed to be constructed, covering an area of approximately 1700m² in extent. Water for the operational purposes is proposed to be abstracted from a groundwater resource and wastewater is proposed to be treated by means of aerobic and anaerobic treatment ponds. Following the treatment of wastewater used for the operation of the abattoir, water will be used for irrigation purposes.

Environmental Authorisation (EA) is required in accordance with the National Environmental Management Act 107 of 1998 and therefore a Basic Environmental Authorisation Process is undertaken and will be submitted to the Competent Authority, the Northwest Department of Economic Development, Environment, Conservation and Tourism (DEDECT). The abstraction and treatment of wastewater will also require a Water Use License in accordance with the National Water Act 36 of 1998 and therefore a Water Use License Application is also in process. The Water Use License Application will be submitted to the Department of Water and Sanitation (DWS).

Bila Foods (Pty) Ltd subsequently appointed Core Environmental Services as an independent Environmental Consultant, to apply for the Environmental Authorisation and Water Use License by means of conducting a Basic Environmental Authorisation Application process in accordance with GNR 982, 2014 (as amended in 2017) as well as a Water Use Licensing process in accordance with the National Water Act 36 of 1998.

The site is located on portion 55 of the farm Groenkloof 464 JQ, Madibeng Local Municipality, North-West Province, approximately 8km east of Mooinooi.

Coordinates of the site:

25°44'36.25"S 29°

27°38'18.83"E.

The construction and operational phase for proposed abattoir and associated structures and infrastructure, are likely to result in environmental and socio-economic impacts. The table below summarises the impacts identified and assessed for both the construction and operational phases of the project:

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction Phase Impacts		
Erosion	Low	Very Low
Soil contamination	Low	Very Low
Impact on water resources	Low	Very Low
Generation of dust	Low	Very Low
Generation of noise	Low	Very Low
Traffic	Medium	Low
Waste generation	Low	Very Low
Job Opportunities	Neutral	Medium (+)
Health and Safety Impact	Low	Very Low

Operational Phase Impacts		
Impact on water availability	Medium	Low
Ground- and surface water pollution	High	Low
Odour	Medium	Low
Waste Generation, Storage and Disposal	High	Medium
Health and Safety	High	Low
Pests	Medium	Low
Socio-Economic	Neutral	High (+)
Cumulative Impacts during operation		
Impact on water availability	High	Low
Odour generated by considering other agricultural activities within the vicinity of the site	Medium	Low
Waste Generation, Storage and Disposal	High	Medium
Pests	High	Medium
Socio-Economic	Neutral	High (+)

The essence of all environmental assessment processes is aimed at ensuring informed decision-making and environmental accountability. Furthermore, it assists in achieving environmentally sound and sustainable development. The impact assessment for this project has been undertaken in line with the requirements prescribed in the NEMA regulations.

The assessment of the possible impacts associated with construction and operation of the proposed abattoir, concluded that the impact on the surrounding environment is of **medium to low significance if mitigation measures are implemented**. During operation, it is imperative that the following aspects be effectively managed to ensure that the impact on the surrounding environment is minimised:

- Waste management;
- Water pollution of the nearby Kareespruit;
- Water abstraction;
- Pest and fly management; and
- Health and Safety (sanitation)

Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment. Recommendations for the mitigation of impacts are included within Section 7 and the Draft Environmental Management Plan attached.

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation measures be included as the conditions of the authorisation.

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ABBREVIATIONS

BAR	Basic Assessment Report
BOD	Biochemical Oxygen Demand
CBA	Critical Biodiversity Area
CR	Critically Endangered
DEDECT	Department of Economic Development, Environment, Conservation and Tourism
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioner Association South Africa
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EN	Endangered
ESA	Ecological Support Area
GNR	General Notice Regulation
I&AP	Interested and Affected Party
IBA	Important Bird Area
IDP	Integrated Development Plan
LC	Least Concern
NFEPA	National Freshwater Ecosystem Priority Areas
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management Biodiversity Act
NWA	National Water Act
PPP	Public Participation Process
SAHRA	South African Heritage Resources Agency
SACNASP	South African Council for National Scientific Professions
SDF	Spatial Development Framework
SDI	Spatial Development Initiative
TSS	Total Suspended Solids
VU	Vulnerable
WP	Well Protected
WUL	Water Use License

1. OVERVIEW OF THE PROJECT

1.1 Introduction

Bila Foods (Pty) Ltd is proposing to construct a red meat abattoir with a slaughtering capacity of 200 cattle and 200 sheep per day. The area on which the abattoir is proposed is 8Ha in extent and within the 8Ha, a shop and butchery is also proposed to be constructed, covering an area of approximately 1700m² in extent. Water for the operational purposes is proposed to be abstracted from a groundwater resource and wastewater is proposed to be treated by means of aerobic and anaerobic treatment ponds. Following the treatment of wastewater used for the operation of the abattoir, water will be used for irrigation purposes.

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1.2 Location

The site is located on portion 55 of the farm Groenkloof 464 JQ, Madibeng Local Municipality, North-West Province, approximately 8km east of Mooiwool.

Coordinates of the site:

25°44'36.25"S 29°

27°38'18.83"E.

Please refer to the locality map below, Figure 1 below. The layout proposed for the abattoir and butchery is attached as Appendix A-2.

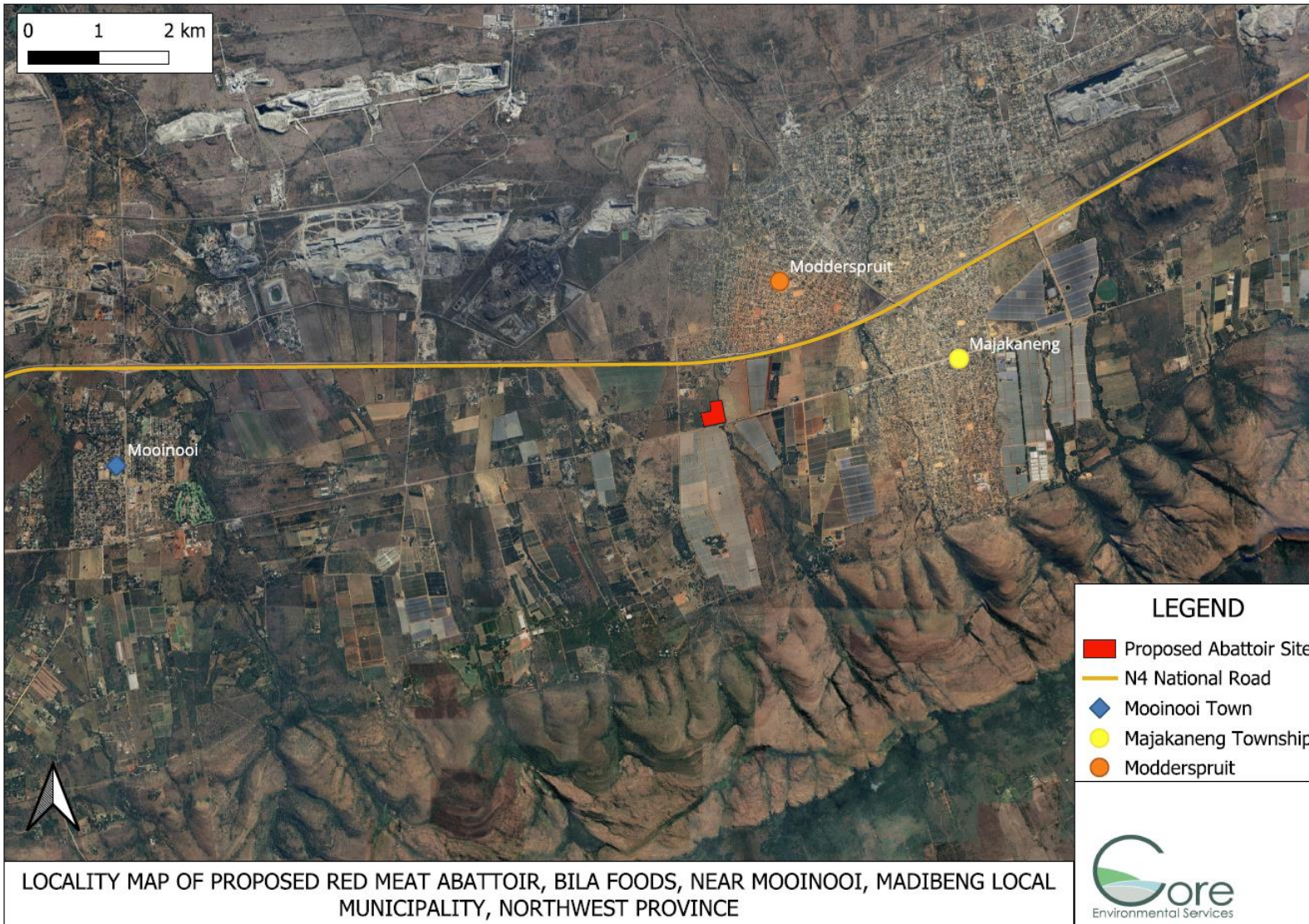


FIGURE 1: LOCALITY MAP – BILA FOODS ABATTOIR, MADIBENG LOCAL MUNICIPALITY, NORTHWEST PROVINCE

1.3 Details of the EAP

Ms. Anne-Mari Hitge, is an Environmental Specialist, who started her studies at the North-West University (NWU) and completed her Bachelor of Science: Environmental Management at the University of South Africa (UNISA) in 2007. Ms. Hitge is registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA Reg No: 2020/602) as well as the South African Council for Natural Scientific Professionals as a Certificated Natural Scientist (Reg. No 300067/15). In addition to her qualification, she completed short courses in soil classification and wetland delineations (Terrasoil Science), Geographic Information Systems (University of KwaZulu-Natal), and Environmental Impact Assessments (NWU).

1.4 Policy, Legal and Administrative Framework

TABLE 1: LEGISLATION APPLICABLE TO THE PROJECT

Applicable legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments considered	Project application and type (permit / licence / authorisation / comment)
The Constitution of South Africa, Act No. 108 of 1996	Bila Foods Abattoir will be required to adhere to the Environmental Management Programme (EMPr) requirements to ensure that social and environmental management considerations are considered and implemented. As per Section 25 the Constitution, a public participation process (PPP) was undertaken and will continue to be undertaken, as this is considered to be an essential mechanism for informing stakeholders of their rights and obligations in terms of the project.
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Environmental Authorisation will subsequently be applied for by means of conducting a Basic Environmental Authorisation process as regulated within GNR982 of 2014 (as amended in 2017).
National Water Act 36 of 1998 (Act No. 36 of 1998)	A Water Use License Application is submitted to the Department of Water and Sanitation for the water uses as per Section 21 of the NWA 36, 1998. These water uses include the abstraction of water from a water resource (Section 21a), the discharging and treatment of effluent into the aerobic, anaerobic and facultative ponds (Section 21g) as well as the irrigation of the treated effluent (Section 21e).

Occupational Health and Safety Act, 1998 (Act No. 85 of 1998)	<p>The Act provides for the health and safety of people at work and for the health and safety of people using plant and machinery during construction.</p> <p>During establishment and operation, work must be conducted with strict adherence to the Occupational Health and Safety Act 85 of 1998.</p>
National Environmental Management: Waste Act, No. 59 of 2008	<p>Schedule 3 of the NEM: WA classifies the non-infectious portion of animal waste as general waste: "Category B1 Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing (b) wastes from the preparation and processing of meat, fish and other foods of animal origin." Blood is included under this definition. Non-infectious condemned animal waste is viewed as waste and is classified as general waste.</p> <p>Infection waste is viewed as hazardous waste and must also be dealt with accordingly.</p> <p>This Act is therefore applicable as waste storage and disposal must be undertaken in accordance with the NEM:WA 59, 2008</p>
National Norms and Standards for the Disposal of Waste to Landfill (August 2013, GG No. 36784 GN No. 636)	<p>Waste is evaluated in terms of the Norms and Standards for the Assessment of Waste for Landfill Disposal set in terms of Section 7(1) of the NEM: WA. According to Section 4 (2) (iii): non-infectious animal carcasses may only be disposed of at a Class B waste disposal facility or at one designed in accordance with the requirements for a G:L:B+ waste disposal facility, as specified in the Department of Water Affairs and Forestry (DWAFF) Minimum Requirements for Waste Disposal by Landfill (2nd Edition, 1998).</p> <p>Section 5 (1) u: indicates that infectious animal carcasses and animal waste are prohibited and/or restricted from landfills with immediate effect, implying that treatment is needed before disposal at Class B.</p>
Red Meat Regulations, No 1072, September 2004	<p>Part VIII describes the process of treating condemned material. Section 119 deals specifically with the disposal of condemned material as follows:</p> <p>119. Any condemned material must be disposed of by –</p> <ol style="list-style-type: none"> a) Total incineration; b) Denaturing and burial of condemned material at a secure site, approved by the provincial executive officer and local government, by –

	<ol style="list-style-type: none"> 1. Slashing and then spraying with, or immersion in, an obnoxious colorant approved for the purpose; and; 2. Burial and immediate covering to a depth of at least 60 cm and not less than 100m from the abattoir, providing such material may not deleteriously affect the hygiene of the abattoir; or <p>c) Processing at a registered sterilizing plant.</p>
National Environmental Management: Air Quality Act 39, 2004	NEM: AQA, Section 35(2) imposes an obligation on the occupier of any premises to take all reasonable steps to prevent the emission of any offensive odour caused by any activity on such premises. 'Offensive odour' means any smell which is considered to be malodorous or a nuisance to a reasonable person.
Animal Diseases Act 1984 (Act. No 35 of 1984)	Provides for the control of animal diseases and parasites, for measures to promote animal health and for matters connected with this.
Madibeng Local Municipality Integrated Development Plan (IDP) (2022-2027)	<p>The primary objectives of the IDP are to foster economic growth that creates jobs and improve infrastructure within the province.</p> <p>More job opportunities will be created by the establishment of the Bila Food Abattoir facility.</p>

1.5 National Environmental Management Act 107 of 1998

In accordance with the NEMA 107 of 1998, an Environmental Authorisation is required prior to the construction of an abattoir, as the following listed activity is listed within the GN R983 of 2014 (as amended in 2017) and requires authorisation:

TABLE 2: LISTED ACTIVITIES APPLIED FOR IN TERMS OF THE GNR982, 2014 (AS AMENDED)

Listed Activity in terms of GNR983, of 2014 (as amended)	Description of the activity undertaken
<p><u>GNR983, 2014 (as amended): Activity 3</u></p> <p><i>The construction and related operation of facilities for the slaughter of animals with a product throughput of –</i></p> <p><i>ii) <u>Reptiles, red meat and game exceeding 6 units per day.</u></i></p>	<p>Bila Foods (Pty) Ltd is proposing to construct a red meat abattoir with a slaughtering capacity of 200 cattle and 200 sheep per day and for this reason, application is made for the above listed activity in terms of GNR983, 2014 (as amended).</p>

1.6 Description of the project

Bila Foods (Pty) Ltd is proposing the construction of a red meat abattoir, strategically designed to meet the growing demand for quality meat products in the region. The proposed abattoir will be situated on an 8-hectare (Ha) site, which has been carefully selected to accommodate the operational needs of the abattoir. Within this area, a 1,700 square meter (m²) shop and butchery are also proposed to be constructed. This facility will not only serve as a point of sale for high-quality meat products but also as a hub for value-added services such as meat processing, packaging, and distribution.

The facility is planned to have a slaughtering capacity of 200 cattle units and 200 sheep units per day. The design of the abattoir allows for the slaughtering of cattle and sheep on a rotational basis and not simultaneously. It is also important to note that 6 sheep is equal to 1 unit and therefore 200 sheep equate to 33 slaughtering units and therefore the total slaughtering units per day equates to 233. The water demand for the abattoir is calculated as follows:

- 1200 litres per cattle per day (1.2m³ x 200 cattle equates to 240m³/day);
- 300 litres per sheep per day (0.3m³ x 200 sheep equates to 60m³/day).

The above calculations for the water demand includes the water to be used for the cleaning of facilities, equipment, cooling systems and other essential uses within the abattoir. The total water demand for the abattoir is therefore noted as 300m³ per day.

The layout of the abattoir and butchery is presented in Figure 2 below. From this representation, the slaughtering process is described below:

- Delivery trucks transporting cattle and sheep (livestock) to be slaughtered, will access the property at the south-western corner of the property boundary, from the R104 Provincial Road;
- Different entry routes are provided for the clean and dirty areas. Trucks delivering livestock and collecting offal and condemned carcasses will be making use of the “dirty entrance”, while carcasses and packaged/processed meat will be making use of the “clean entrance” for collection.
- Trucks delivering livestock and/or collecting offal and condemned carcasses, will go through the weighbridge to the area where trucks will be washed prior to entering the abattoir site;
- Livestock is then offloaded at the north-western corner of the abattoir site, at the lairages which will be able to accommodate 160 cattle. Within the lairage, cattle and/or sheep is held within a secure holding facility, where they are provided with water and space to rest;
- From the lairages, cattle and/or sheep are stunned in order for the animal to be rendered unconscious;
- Following this process, animals are exsanguinated. Animals are usually suspended by a hind limb and moved down a conveyor line for the slaughtering procedures. With the exsanguination, animals are typically bled by the insertion of a knife into the thoracic cavity to sever the carotid artery and jugular vein. Blood which is drained is separated and collected by a third-party contractor for the use in fertiliser.

- The skin and hides are removed, followed by all the offal products. Offal products are then dispatched at a separate entrance provided for this purpose.
- Carcasses are then placed in a cooler of approximately 24 hours prior to fabrication into meat cuts. Two areas are however provided within the abattoir:
 - Area where full carcasses are being dispatched and removed from site;
 - Area where carcasses are being deboned, processed and boxed. Packaged meat is then dispatched from the abattoir site through the clean area.
- During the entire slaughtering process, antemortem and postmortem inspections are undertaken. Antemortem inspection identifies animals not fit for human consumption. These are animals which are known to be disabled, diseased or dead. Such animals are removed from the food chain and is labelled condemned. Other animals showing signs of being sick are labelled “suspect” and are segregated from healthy animals for more thorough inspection during the processing procedures. Postmortem inspections of the head, viscera and carcasses helps to identify whole carcasses, individual parts, or organs that are not wholesome or safe for human consumption. These carcasses are then sent to a separate facility/room within the abattoir and is removed from the site from a door which is used solely for this purpose. Care is taken to ensure that these carcasses do not contaminate any other carcasses within the abattoir. Facilities and equipment are inspected throughout the slaughtering process to ensure that they meet the safety requirements.

In considering potential solutions for managing abattoir waste, the principles of the Waste Management Hierarchy must be considered. The Waste Management Hierarchy therefore considers all the other principles before disposal by landfill (Reduce, reuse and recycle). The abattoir by-products could be used and/or applied as follows:

- Inedible meat and waste products: to be used for pet food;
- Paunch content (off-cuts, offal, blood mixed with kraal manure): Nutritive value of vermicompost for agriculture;
- Whole and portions of carcasses (infectious condemns and condemns): incineration – could be used to generate electricity;
- Animal manure: To be used as fertilizer

It is however noted that, except for the wastewater treatment, no abattoir waste will be processed or disposed of at the Bila Foods Abattoir facility. All waste will be transported off site and either be reused or disposed of at different facilities equipped to successfully dispose of such waste materials.

The abattoir premises must be thoroughly cleaned on a daily basis to avoid contamination. The project incorporates a comprehensive wastewater management strategy to minimize the environmental impact on the surrounding environment which could result as a consequence of the wastewater generated. Aerobic and anaerobic treatment ponds are proposed to be constructed on site to treat all wastewater generated during the operation of the abattoir. Aerobic wastewater treatment requires the use of oxygen, while anaerobic wastewater treatment does not require oxygen for treatment purposes. At this facility, it is proposed that the wastewater initially goes through the anaerobic treatment to reduce the organic contaminant levels. From the anaerobic

pond, water is transferred to the facultative pond which is used as a stabilization pond. Following this process, wastewater is treated through the aerobic treatment pond which further reduces the BOD (Biochemical Oxygen Demand) and TSS (Total Suspended Solids). Once treated, the wastewater will be reused for irrigation purposes within the site, promoting sustainable water use and reducing the need for additional water resources. Please refer to Figure 2 below, providing a visual presentation of the holding pond, aerobic-, facultative- and anaerobic ponds proposed on the north-eastern corner of the subject property.



FIGURE 2: WASTEWATER TREATMENT SYSTEM PROPOSED FOR THE BILA FOODS ABATTOIR, MADIBENG LOCAL MUNICIPALITY

To ensure a reliable water source for the abattoir’s operations, the project is proposing the abstraction of water from a local groundwater resource. A Geo-Hydrological Assessment was undertaken, and the results indicated that the current four operational boreholes provide a total of 258 m³/day of water. By adding boreholes 3, 5, 6, and 7, the total volume will increase to 302 m³/day. Ultimately, with all eight boreholes operational, the total water capacity will reach 436 m³/day, which can comfortably accommodate the proposed slaughtering of 200 red meat units per day. Please refer to Table 3 below noting the recommended sustainable abstraction rate for each borehole on site and also refer to Figure 3, referring to the locations of the boreholes on portion 55 of the farm Groenkloof 464-JQ.

TABLE 3: TOTAL VOLUME OF WATER AVAILABLE ON SITE FOR OPERATIONAL ACTIVITIES

Borehole No.	Recommended Abstraction Rate (m ³ /day)
BH1	52 m ³ /day
BH2	71 m ³ /day
BH3	49 m ³ /day
BH4	45 m ³ /day
BH5	49 m ³ /day
BH6	45 m ³ /day
BH7	39 m ³ /day
BH8	79 m ³ /day
Total Recommended Abstraction (m³/day)	436 m³/day

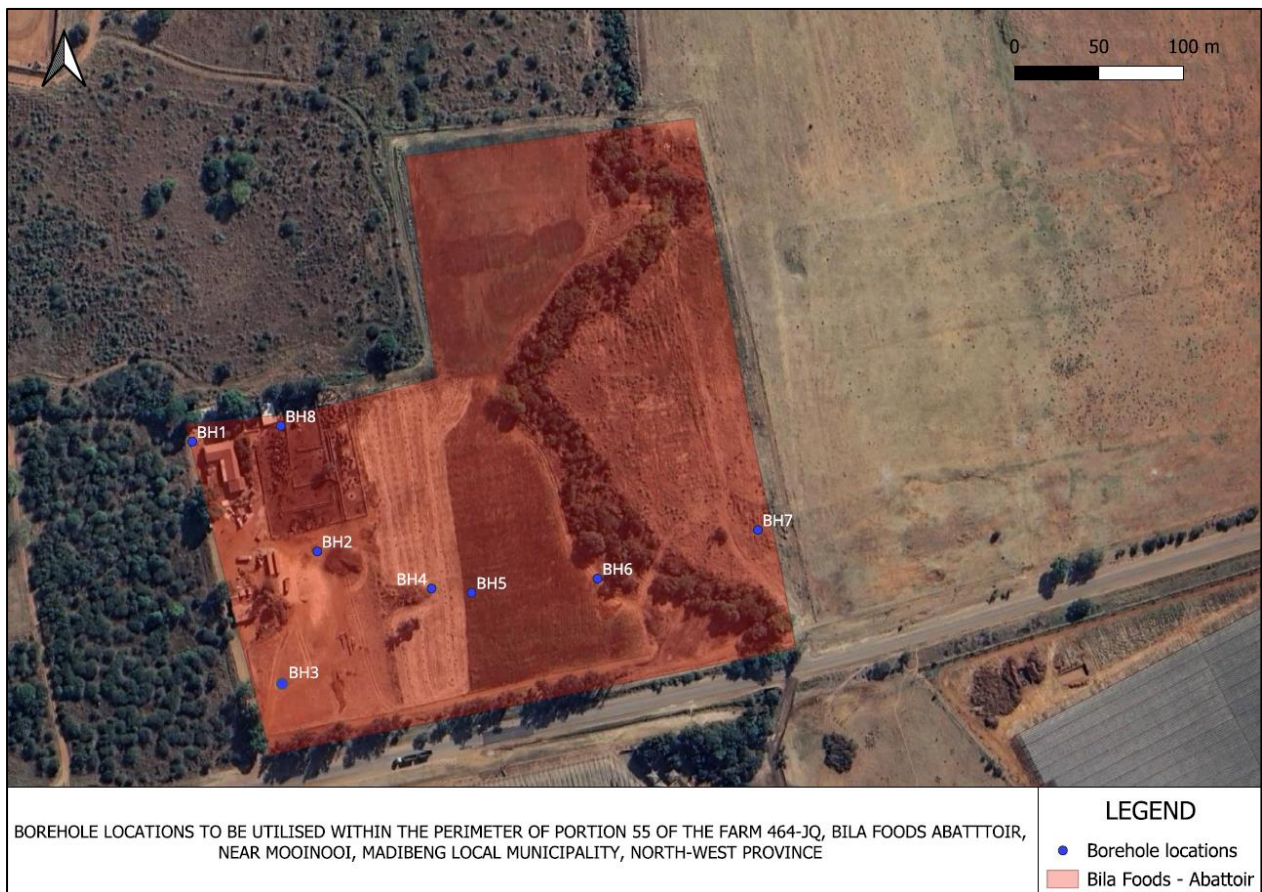


FIGURE 3: BOREHOLE LOCATIONS ON PORTION 55 OF THE FARM GROENKLOOF 464-JQ, BILA FOODS ABATTOIR

1.7 Need and Desirability

According to the recently released Organisation for Economic Development (OECD) Agricultural Outlook 2019-2028, meat production is expected to continue to grow as it is expected that by 2050, more than 25% of the world population will live on the African continent. The food market in East and Southern Africa will more than triple by 2040.

Given the natural resource base of South Africa, livestock production is one of the most important farming practices in the country. Of the approximately 80 % of the land surface being utilised for agriculture, almost 70 % is mainly suitable for raising livestock. The analysis on the value chain in general shows that the South African cattle and sheep industries have been growing in nominal terms when considering their contribution towards the total gross value of agricultural production. With approximately 40-50% of the national herd in the hands of communal and smallholder farmers, the sector can become a dynamic driver of inclusive growth, rural development, employment, and wealth creation for more than 1 million house-holds involved in livestock production, largely in the poorest and most neglected regions of the country. South Africa is estimated to be exporting approximately 4000 tons of red meat a month to 40 countries which includes China, India and the United Arab Emirates. South Africa currently exports 4% of its beef production and 1 % of its mutton and lamb production. ([Challenges and opportunities for SA's red meat producers | Farmer's Weekly \(farmersweekly.co.za\)](#)). The South African red meat industry has the potential to grow by more than 20% above a "business as usual" scenario, adding more than R 12 billion in real terms to South Africa's agricultural GDP per annum by 2030. ([Red Meat Industry Strategy 2030 – RMIS](#))

For the abattoir to accommodate the current and expected growth and ensure that the abattoir remains financially viable, it is imperative for the abattoir to be established, aims to accommodate the increasing demand.

Furthermore, the construction and operation of the abattoir are expected to have a significant positive impact on the local economy. It will create direct and indirect employment opportunities, from construction workers during the construction of the facility, to permanent employment for abattoir staff (logistics, retail, and management). Furthermore, the facility will support local farmers by providing a reliable and accessible market for their livestock, thereby enhancing agricultural sustainability in the region.

This scale of operation is intended to enhance the local and international meat supply chain, support regional agriculture, and create numerous job opportunities within the surrounding local community.

2 PUBLIC PARTICIPATION PROCESS

The purpose of this chapter is to provide an outline of the public participation process (PPP) to date and the way forward with respect to the Basic Assessment process.

Consultation with the public forms an integral component of the EA process. This process enables Interested and Affected Parties (I&APs) (e.g. directly affected landowners, national-, provincial- and local authorities, and local communities etc.) to raise their issues and concerns regarding the proposed activities, which they feel should be addressed in the BA process. The PPP has thus been structured such as to provide I&APs with an opportunity to gain more knowledge about the proposed project, to provide input through the review of documents/reports, and to voice any issues or concerns at various stages throughout the BA process.

I&APs were identified during the public participation phase of the project. All the parties identified as an I&AP (surrounding landowners, relevant departments, stakeholders, local and district authorities) have automatically been registered in the I&APs database for the project. The registered I&AP list is attached as **Annexure C.1**.

In effort to engage potential stakeholders, different communication methods were used to inform them about the project and how to get involved in the BA process. These methods include:

- Distributing English Background Information Documents (BIDs) on 11 July 2024 to all registered I&APs, proof of which is attached in **Annexure C.2**;
- Placement of media advert in a local newspaper (The Kormorant) on 4 July 2024 (see **Annexure C.3**).
- Placing of a notice at the proposed site took place on 27 June 2024 (see **Annexure C.4**);

The draft Basic Assessment Report will be made available for public review during November and December 2024.

To date, the following comments have been received from stakeholders and/or Interested and Affected Parties.

TABLE 4: COMMENTS AND RESPONSE REPORT

COMMENT RECEIVED	RESPONSE PROVIDED
<p><u>Marius Bornman (adjacent landowner to the Feedlot) – 24 July 2024 via email:</u> <i>As per public participation process advertised in newspaper for the feedlot on portion 95 of the farm Groenkloof 464-JQ, I would like to register as an Affected Party. The section in question has already been cleared, prior to this advert. Is this not against regulation?</i></p>	<p><u>Response by EAP- 24 July 2024:</u> <i>Thank you for your email. Your comment will be recorded within the EIA process to be undertaken. In order to provide some clarification, please note the following:</i> <i>Bila Foods are currently undertaking two Environmental Authorisation processes.</i></p>

The issue will be that Bila foods will be utilising this land for livestock and a slaughter house. I am staying right behind the area. We will share the underground water of which is not very strong, one cow drinks a minimum of 50L of water per day.

Part 95 is not 150ha as stated in the add. Bila is buying farm land all around the area which all may total 150ha.

Water to be used in the slaughterhouse and what regulation will be in place for the removal of the blood and faeces. These will ensure bad smells and bacteria in the area. This area is too small to cater for the amount of cattle they are putting there. It is clear that the go ahead was already given as works on the property is underway and the butchery is already open further down the R104.

These are my and my neighbours concern. Please advise on any further developments.

1. Proposed abattoir:

The one EIA process is for the proposed abattoir and this activity has not yet commenced. This abattoir is proposed to be located on portion 55 of the farm Groenkloof 464-JQ. This abattoir is proposed adjacent and north of Road R104 on an area of 8Ha which was previously used for cultivation purposes. (On the area where the small butchery is currently operating). As part of this process, a Water Use License Application will also be undertaken and a Geo-Hydrological Assessment will form part of the assessment to determine the availability of groundwater.

An engineering team is currently working on designs for the treatment of effluent water from the abattoir and following the treatment of the effluent water, water will be used for irrigation. In order to mitigate all other negative impacts associated with a proposed abattoir, the Environmental Impact Assessment is undertaken, and an Environmental Management Plan will be compiled to effectively ensure that negative impacts are minimised. (Please see attached BID and Locality Map for the abattoir)

2. Feedlot:

The clearance activities and some of the structures for the feedlot have already commenced and therefore this process is not undertaken as a normal EIA process, but rather a Section 24G Environmental Rectification process. The feedlot is proposed on a different location than what is proposed for the abattoir. (Portion 95 of Groenkloof 464-JQ). Approximately 8Ha of this area has already

been cleared. The applicant is however proposing to utilise more than 8Ha for the feedlot, however, the total area to be utilised will be determined following the outcome of specialist assessments (Terrestrial Biodiversity and Heritage Assessment as a minimum requirement). The feedlot is proposed on portion 95 of Groenkloof 464-JQ and although this property is large, the area which would be feasible for the feedlot will be restricted by topography and sensitive environments. The extent of the area will therefore be clarified following the specialist assessments.

It must be noted that a Water Use License Application is currently being undertaken for this project as well, and this application will include a Geo-Hydrological Assessment, which will consider the availability of groundwater as well as surrounding groundwater being utilised. (Please see attached BID and locality map for the feedlot)

I hope and trust that the above will provide some clarification.

For both of the above EIA and Water Use Licensing processes, we have only now commenced with the initial public participation phase while specialists are in the process of being appointed to undertake their assessments. More detail of the respective projects will be provided in two separate reports which will be distributed and available for public review, once all assessments have been completed.

Should you require any additional information, please feel free to contact me. Please also note that I have included you on the stakeholder and interested and affected party database and you will be receiving all future correspondence pertaining to the above projects.

3 CONSIDERATION OF ALTERNATIVES

The EIA process requires the developer to identify and investigate/assess feasible and reasonable alternatives. The project alternatives range from the location where the activity is proposed, type of activity to be undertaken, design of activity, technology to be used in the activity to the option of not implementing the activity (No-Go Alternative).

The assessment of the alternatives is a complicated and multi-faceted issue, which is essential to the success of this application and ultimately to the proper, responsible and sustainable operation of the proposed project.

3.1 Alternative Selection

3.1.1 Locality alternatives

The applicant owns two properties within the area, along the R104 Provincial Road. The two properties include portion 55 and 95 of the farm Groenkloof 464 JQ. Portion 95 of the farm Groenkloof 464-JQ is however not located adjacent to the R104 Provincial Road and as the applicant is proposing on constructing a butchery on the property as well, easy access and visibility was an important factor to be considered when determining the best location for the abattoir and butchery within the project area.

For this reason, portion 55 of the farm Groenkloof 464-JQ was found to be the best location for the abattoir and butchery, when comparing it with portion 95 of the farm Groenkloof 464-JQ, as portion 95 of the farm Groenkloof 464-JQ is not visible from the R104, Provincial Road. Portion 55 of the farm Groenkloof 464-JQ is also easily accessible from the R104 Provincial Road which therefore eases delivery and transportation of cattle and sheep.

3.1.2 Layout alternatives

Various factors had to be considered for the proposed layout of the abattoir. These factors included access to the site, visibility for the butchery and shop, parking for customers, operational flow of the butchery from where cattle and sheep is delivered to where the units are slaughtered and transported to the butchery or off-site to other butcheries within the surrounding area.

Another factor which had to be considered for the layout of the proposed abattoir and butchery was the aquatic sensitivity and 1:100-year flood line of the Kareespruit River located to the east of the project site. The layout was therefore revised to ensure that the structures and infrastructure are located outside the 1:100-year floodline. Please refer to Figure 4 and 5 below noting the initial layout versus the new proposed layout, taking into consideration the sensitivities of the site.

All of the above factors had to be considered and informed the layout of the proposed butchery and abattoir on the proposed property.

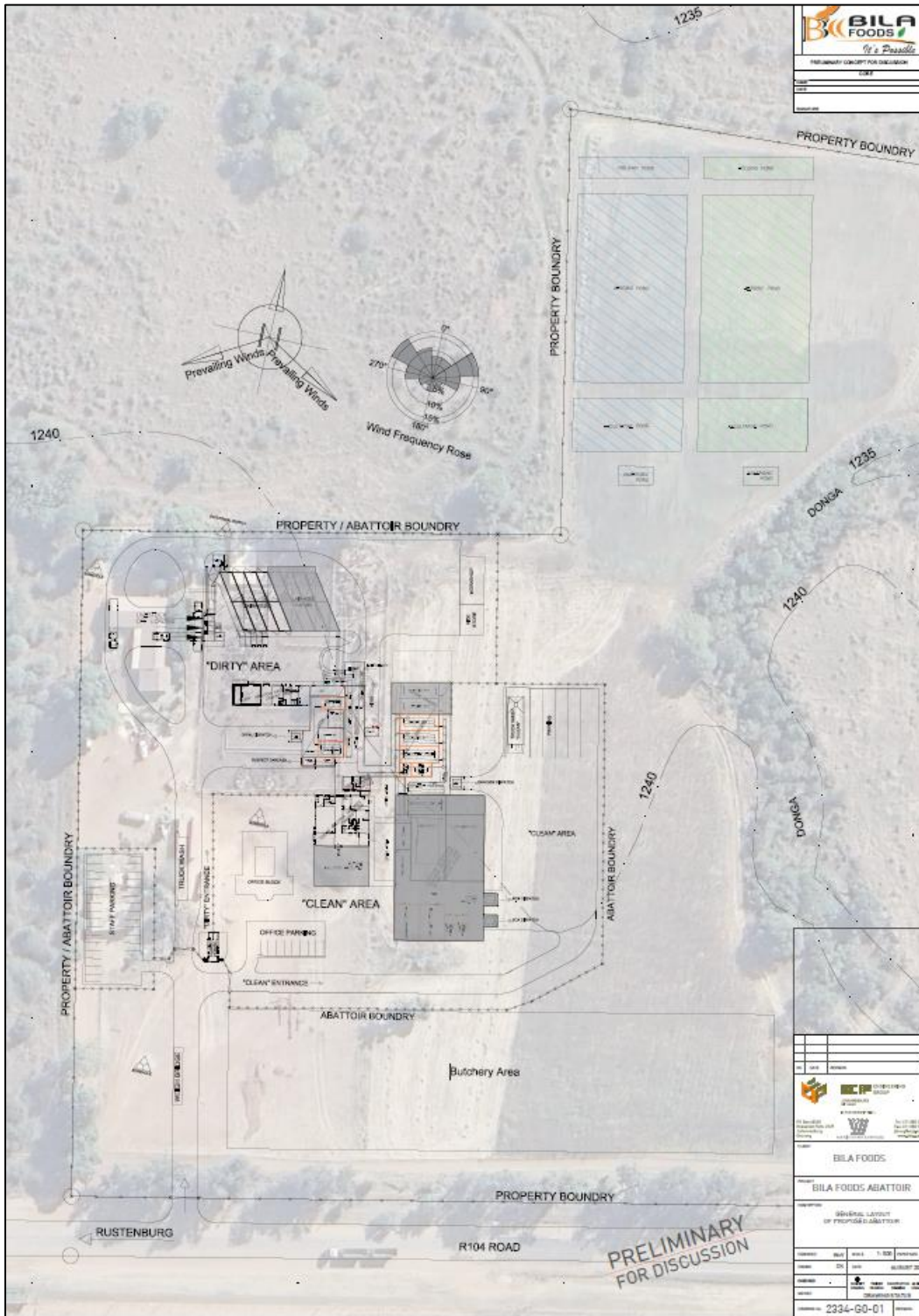


FIGURE 4: INITIAL PROPOSED LAYOUT OF THE BILA ABATTOIR

3.1.3 No-Go alternative

The no-go alternative would be to not authorise the application for the butchery or abattoir on the proposed subject property. Should this alternative be favoured, the butchery and abattoir will not be constructed and all prospective job opportunities will be lost. The opportunity to meet the increasing demand for meat products will also be lost. Considering the impacts associated with the construction and operation of the abattoir, no impact was identified to be so severe for the no-go alternative to be further investigated.

4 DESCRIPTION OF THE AFFECTED ENVIRONMENT

The description of the affected environment below draws on existing knowledge from published data, previous studies, specialist investigations, site visits to the area and is used to understand the possible effects of the proposed project on the environment.

4.1 Topography

The topography of the larger area between Mooinooi and Majakaneng is approximately 1,200 meters. The Magaliesberg is located towards the south of the larger project area and is approximately 1600m above mean sea level. The Magaliesberg is located approximately 3.5km south of the project site. Please refer to Figure 6 below.

The site on which the abattoir is proposed is however relatively flat at an altitude of 1245 mamsl. The project site is sloping slightly from the south-west to the north-east of the property, however, the very gentle slope towards the north-east of the property would not result to any construction or operational challenges.

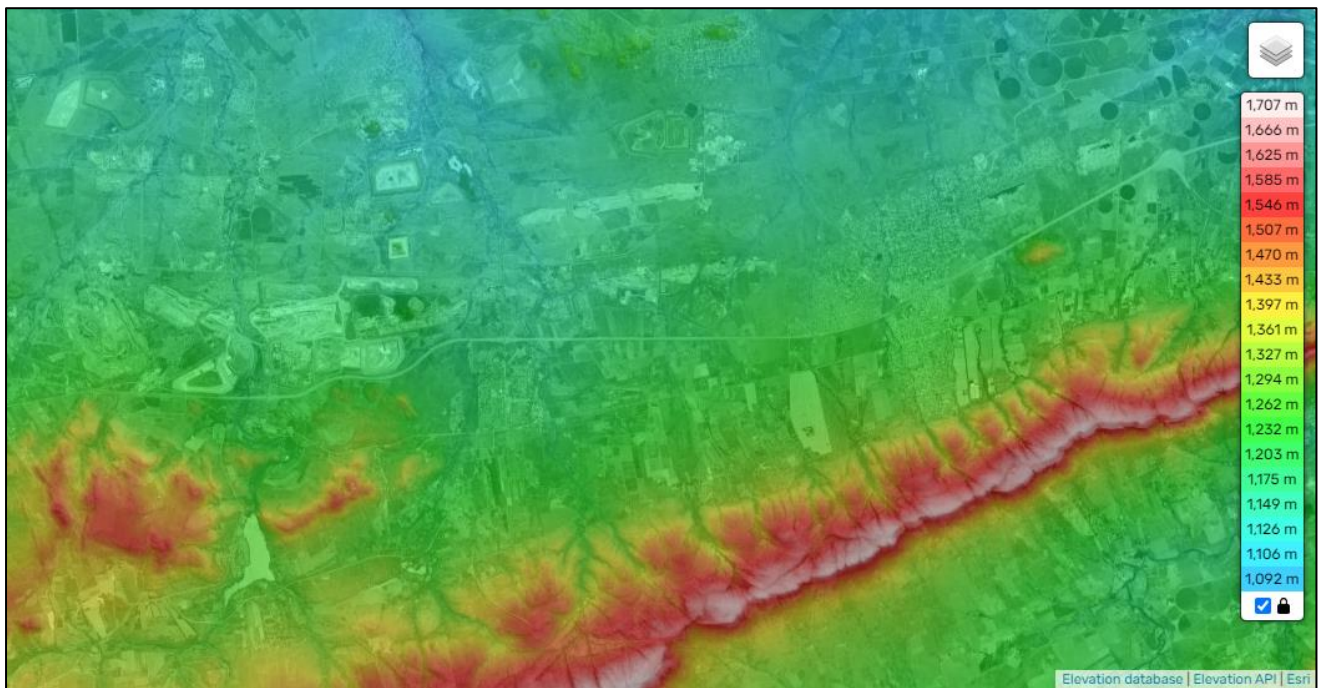


FIGURE 6: TOPOGRAPHY OF THE LARGER AREA WITHIN WHICH THE ABATTOIR IS PROPOSED

Source: <https://en-za.topographic-map.com/map-zl6x3q/Mooinooi/?center=-25.71591%2C27.5218&base=5&lock=12%2C1092%2C1707>

4.2 Climate

The North-West Province has a climate that varies based on altitude and geographical location. The local area is characterized by warm to hot climatic conditions, with a mean maximum temperature of 28°C in January and 20°C in June.

The site is situated in a semi-arid region with a summer rainfall pattern. The area receives an annual average rainfall of approximately 650mm, with most of the precipitation occurring between October and March. Winter rainfall is minimal to nearly non-existent, with the lowest average rainfall of about 3mm during the month of July.

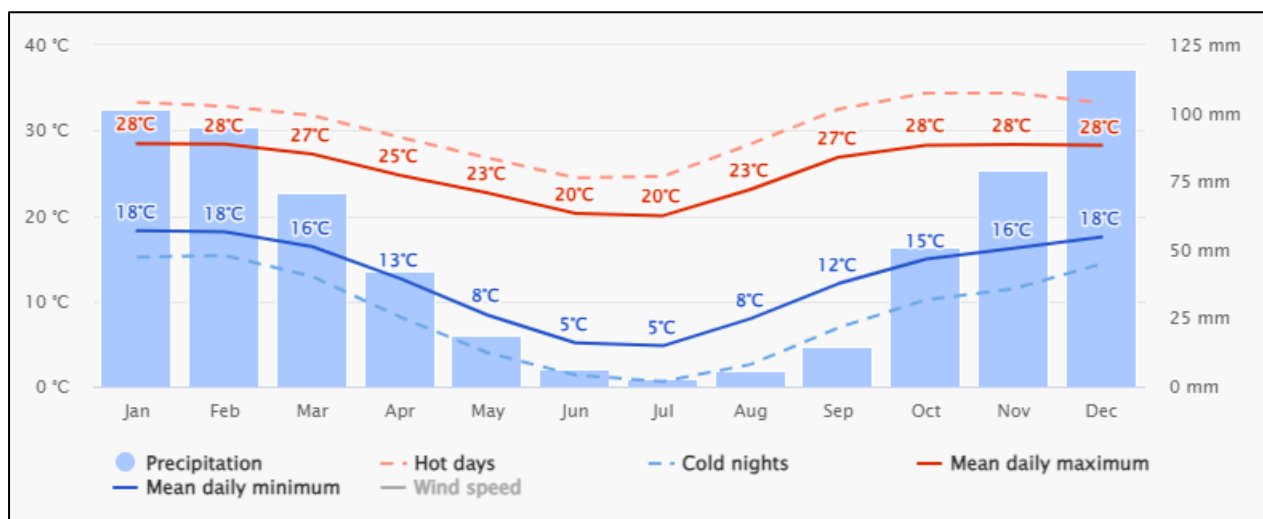


FIGURE 7: CLIMATE GRAPH FOR MOOINOOI, LOCATED NEAR BILA ABATTOIR

Graph source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/mooinooi_south-africa_974331

4.3 Ecology

The study area is located within the Savanna Biome of the North-West Province, characterized by a mix of grassland and scattered trees. The landscape features generally comprise of open to closed often thorny savanna dominated by various species Acacia, with grasses dominating the herbaceous layer.

The regional veld type is classified by Acocks (1953) as Moot Plains Busveld (SVcb5) and as Central Bushveld (SVcb1) by Low & Rebelo (1998). This ecosystem is rated as vulnerable as approximately 28% of the vegetation type have been transformed by cultivation and urban built-up areas (Mucina & Rutherford, 2006). This vegetation type is found predominantly in the North-West Province and parts of Gauteng, extending from the rocky outcrops near Rustenburg to the surrounding bushveld regions.

Important taxa associated with this vegetation type is listed in Table 5:

TABLE 5: IMPORTANT TAXA ASSOCIATED WITH THE MOOT PLAINS BUSHVELD

Trees and Shrubs	
Scientific Name	
	<i>Acacia nilotica</i>
	<i>Acacia tortilis subsp heteracantha</i>
	<i>Searsia lancea</i>
	<i>Buddleja saligna</i>
	<i>Eucleu undulata</i>
	<i>Olea eruopaea subsp Africana</i>
	<i>Grewia occidentalis</i>
	<i>Gymnosporia polyacantha</i>
	<i>Mystroxyton aethiopicum subsp burkeanum</i>
	<i>Aptosimum elongatum</i>
	<i>Felicia fascicularis</i>
	<i>Lantana rugosa</i>
	<i>Teucrium trifidum</i>
	<i>Kalanchoe paniculata</i>
Woody and Herbaceous Climber	
Scientific Name	
	<i>Jasminum breviflorum</i>
	<i>Lotononis bainesii</i>
Graminoids	
Scientific Name	
	<i>Heteropogon contortus</i>
	<i>Setaria sphacelate</i>
	<i>Themeda triandra</i>
	<i>Aristida congesta</i>
	<i>Chloris virgata</i>
	<i>Cynodon dactylon</i>
	<i>Sporobolus nitens</i>
	<i>Tragus racemosus</i>
Herbs	
	<i>Achyroopsis avicukaris</i>
	<i>Corchorus asplenifolius</i>
	<i>Evolvulus alsinoides,</i>
	<i>Helichrysum nudifolium</i>
	<i>Helichrysum undulatum</i>
	<i>Hermannia depressa</i>
	<i>Osteospermum muricatum</i>
	<i>Phyllanthus maderaspatensis</i>

In terms of the North-West Biodiversity Sector Plan of 2015 the project site is located within an area Critical Biodiversity Acrea (CBA2), as well as an Ecological Support Area 2 (ESA2). Please refer to Figure 9 below.

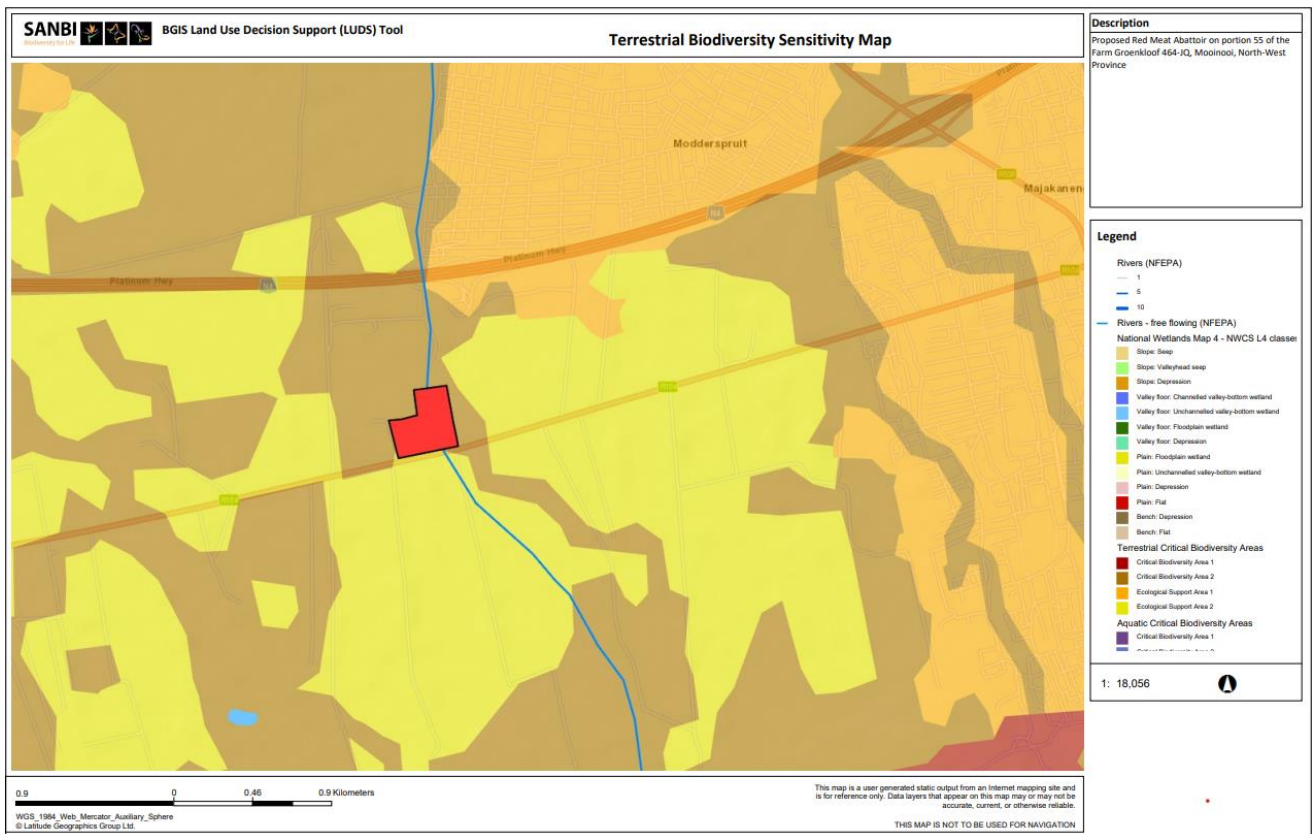


FIGURE 8: TERRESTRIAL BIODIVERSITY SENSITIVITY MAP FOR THE BILA FOODS ABATTOIR, NEAR MOINOUI, NORTH-WEST

Following the site assessment, it was however noted that the entire site on which the abattoir is proposed, has been completely cleared of natural vegetation, as it has been used for agricultural purposes for a number of years. For this reason, it is not expected that any important taxa would be affected by the proposed abattoir.

The only habitat remaining on site, includes the aquatic habitat of the Kareespruit forming the eastern boundary of the development footprint. Ten (10) fish species are expected to occur within the Kareespruit Sub Quaternary Catchment A21J-0996. Please refer to Table 6 below:

TABLE 6: EXPECTED FISH SPECIES FOR THE ASSOCIATED

Scientific Name	Common Name	FROC (out of 5)	IUCN Status (2023)
<i>Aplocheilichthys johnstoni</i>	Johnston's Topminnow	1.0	Least Concern
<i>Labeobarbus marequensis</i>	Lowveld Largescale Yellowfish	Not Assessed	Least Concern
<i>Enteromius paludinosus</i>	Straightfin Barb	1.0	Least Concern
<i>Enteromius trimaculatus</i>	Threespot Barb	1.0	Least Concern
<i>Enteromius unitaeniatus</i>	Longbeard Barb	1.0	Least Concern
<i>Chetia flaviventris</i>	Canary Kurper	1.0	Least Concern
<i>Clarias gariepinus</i>	Sharptooth Catfish	1.0	Least Concern
<i>Oreochromis mossambicus</i>	Mozambique Tilapia	1.0	Vulnerable
<i>Pseudocrenilabrus philander</i>	Southern Mouthbrooder	1.0	Least Concern

<i>Tilapia sparmanii</i>	Banded Tilapia	1.0	Least Concern
Total Number of Species			10

Oreochromis mossambicus (Mozambique Tilapia) is rated Vulnerable by the IUCN (2023) and is expected to occur within the SQR. Major threats to this species are not directly due to anthropogenic activities but rather to the hybridization with *Oreochromis niloticus* (Nile Tilapia) which eventually out competes the indigenous species.

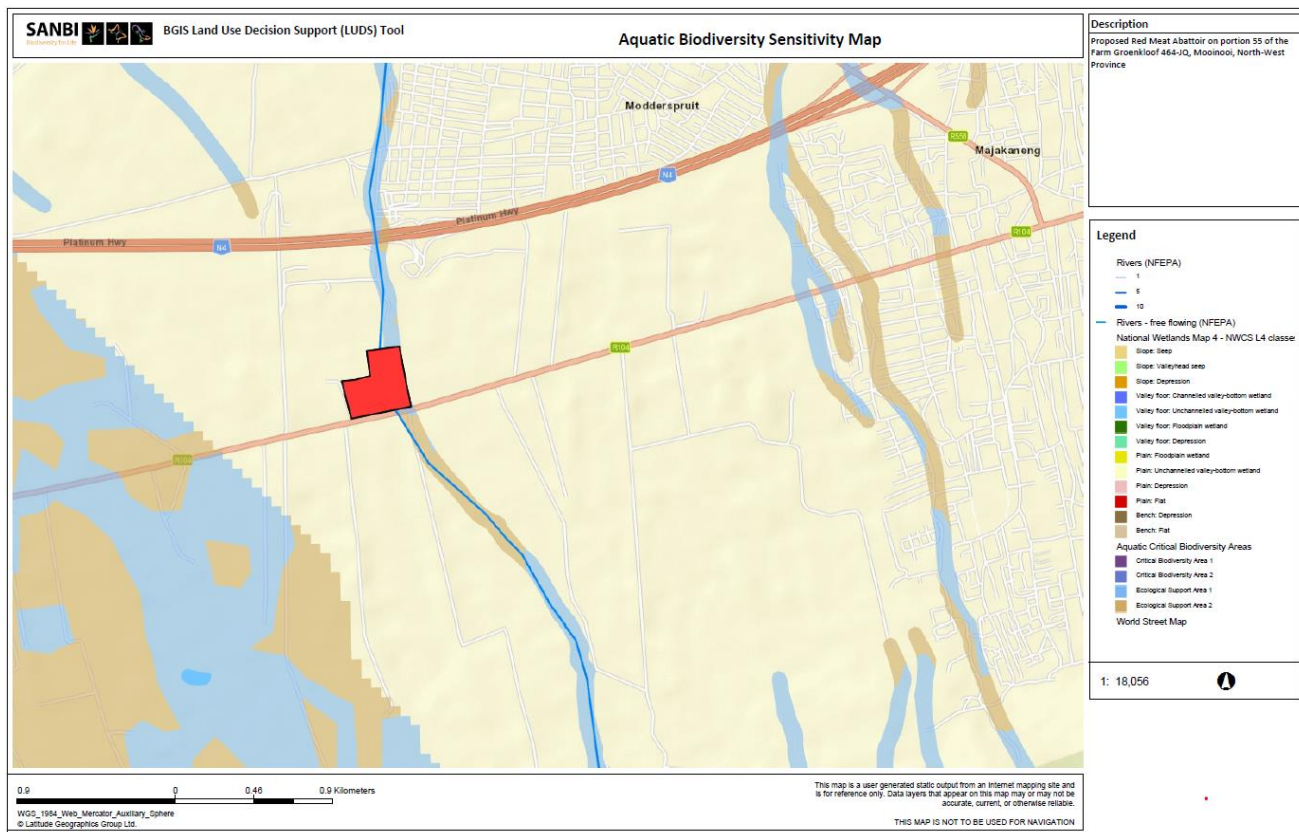


FIGURE 9: AQUATIC BIODIVERSITY SENSITIVITY MAP FOR THE BILA FOODS ABATTOIR, NEAR MOOINOOI, NORTH-WEST

In accordance with the North-West Biodiversity Sector Plan of 2015, the aquatic sensitivity of the project area is noted as an Ecological Support Area 1 and 2. Ecological Support Areas (ESA's) are areas which ensures the long-term ecological functioning of the landscape as a whole and the objective of ESA's are to maintain ecological processes, which often requires at least semi-natural ecological conditions.

4.4 Surface and Groundwater

The project area falls within the Limpopo Water Management Area. The Kareespruit is located within the perimeter of the project site and forms the eastern boundary of the development area for the proposed abattoir and butchery. Based on the National Screening Tool, the aquatic sensitivity associated with the proposed abattoir is associated with the Kareespruit River with a high sensitivity. The Kareespruit Sub Quaternary Catchment is rated as largely modified (Category D) with a high ecological importance and sensitivity.

The Kareespruit originates within the Magaliesberg, located approximately 4.5km south of the proposed project area and is noted as a National Freshwater Ecosystem Priority Area (NFEPA). Historic impacts recorded within the Sub-Quaternary Reach include: largescale agricultural activities, abstraction for irrigation, algal growth (nutrient input), low water crossings, alien invasive vegetation, mining and runoff from urban areas.

Approximately 22km north of the project area, the Kareespruit flows into the Crocodile River which flows into the Roodekoppies Dam located near Brits, North-West Province.

No wetlands were identified within the perimeter of the site.

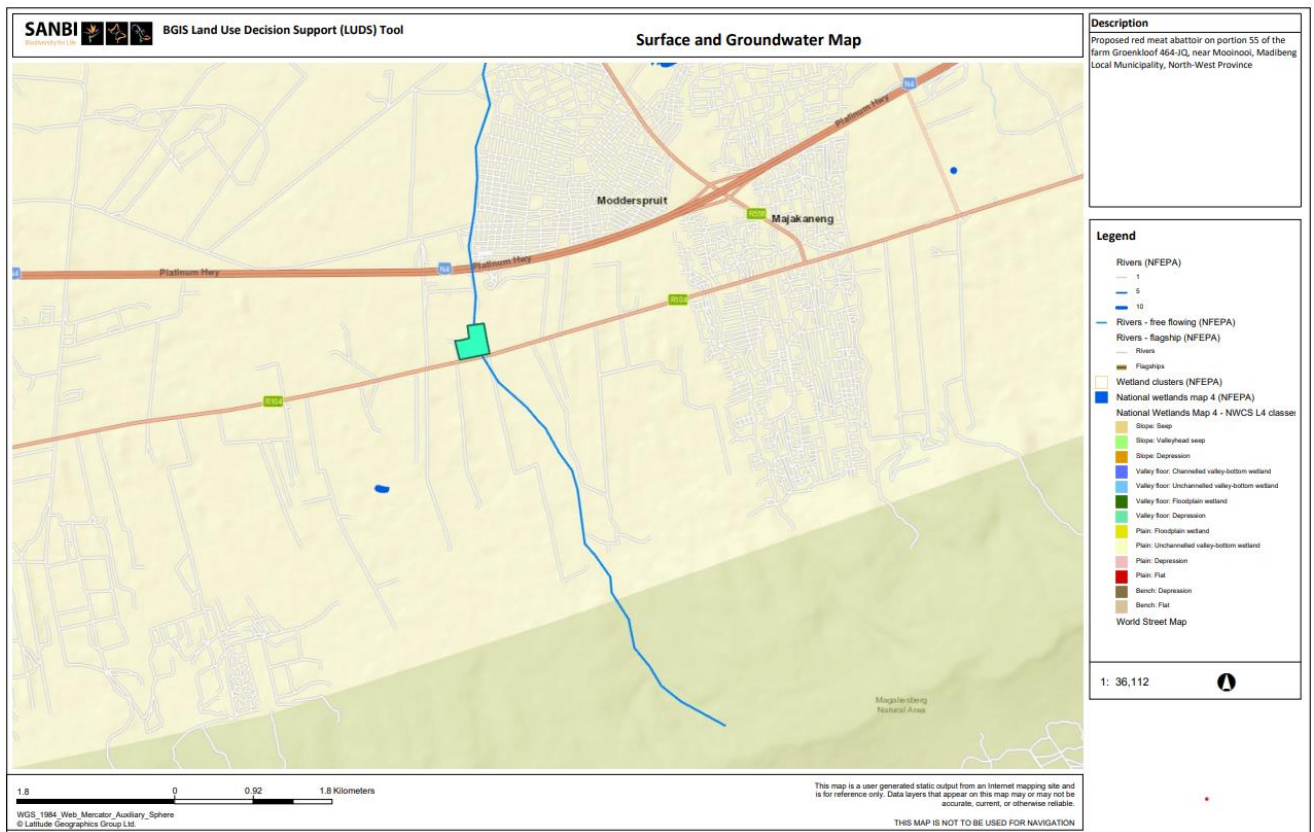


FIGURE 10: SURFACE AND GROUNDWATER WITHIN THE PERIMETER OF THE PROJECT SITE PROPOSED FOR THE ABATTOIR AND BUTCHERY

4.5 Land use

The project site has been used for cultivation purposes prior to 2004, focussing mainly on cultivation. The surrounding land uses are also characterised by agricultural activities, with Nyami Berries cultivating berries directly adjacent and south of the proposed abattoir site. The R104 Provincial Road forms a barrier between the proposed site for the abattoir and Nyami Berries.

Mooiooi town is located approximately 8 km to the west of the site, while various rural smallholdings and farmsteads surround the area. Majakeng Township is located approximately 2.7km east of the project site while Modderspruit Township is located approximately 1km north of the proposed abattoir

site. The N4 Highway between Pretoria and Rustenburg is located approximately 600m north of the proposed site.

4.6 Geology and Soils

In terms of the published geological map sheet of South Africa, Council for Geoscience (2014), the area is underlain by mafic and ultramafic rocks of the Bushveld Igneous Complex, primarily composed of norite, pyroxenite, and anorthosite. These rock formations are part of the Critical Zone of the Bushveld Complex, known for its rich deposits of platinum group metals, chromite, and vanadium. The Bushveld Igneous Complex is one of the largest layered igneous intrusions in the world, and the Critical Zone is particularly significant for its mineral wealth.

The soils in the study area are typically shallow to moderately deep and are derived from the underlying mafic rocks. A topsoil horizon of approximately 0.2 to 0.4 meters thick is present throughout the site, consisting mainly of brown, sandy loam with scattered gravels. This topsoil is rich in organic material, supporting the grassland vegetation typical of the area. Below the topsoil, the subsoil consists of weathered norite and pyroxenite, which contribute to the soil's moderate fertility and good drainage characteristics.

The underlying bedrock is highly weathered near the surface, transitioning to more solid and less weathered norite and pyroxenite at greater depths. These rocks are known to have moderate to high clay content in their weathered state, which can affect the soil's physical properties, including its plasticity and permeability. The presence of these weathered rocks also influences the soil's structure and stability, which are important considerations for any potential development on the site.

4.7 Socio-Economic Environment

The Northwest Province has a population of about 4.1 million people, representing approximately 7% of South Africa's total population. Madibeng Local Municipality has an estimated population of 536,000 people as of 2020 and is expected to grow steadily over the next decade. The municipality contributes significantly to the Bojanala Platinum District Municipality, which is one of the economic hubs of the province due to its proximity to the mining sector.

Out of the total population, approximately 38% are youth (aged 15-34). The employment rate in Madibeng stands at 48%, with 37% unemployment and 15% economically inactive. The unemployment rate has been influenced by fluctuations in the mining industry, with youth unemployment particularly high, estimated at around 40% for those aged 15-24. A significant portion of the population, approximately 32%, lives below the lower-bound poverty line, with poverty levels having increased due to economic challenges and the impact of the COVID-19 pandemic.

Madibeng Local Municipality has a functional literacy rate of approximately 82%, reflecting the region's educational challenges. The matric pass rate has shown variability, typically around 75%, but saw a slight decline in 2020, likely due to disruptions caused by the pandemic. The municipality has a lower rate of university admissions compared to provincial averages, with around 30% of matriculants qualifying for degree studies.

Economically, Madibeng contributes around 10% to the provincial GDP, largely driven by the mining and agriculture sectors. The total size of the Madibeng economy in 2020 prices was estimated to be R20 billion. The municipality's economic growth has been modest, with an average growth rate of 1.5% between 1996 and 2019, but like many areas, it experienced a downturn in recent years, with growth slowing to 0.5% from 2014 to 2019.

5 SPECIALIST ASSESSMENT REQUIREMENTS AS IDENTIFIED IN THE SCREENING REPORT

The following specialist assessments were identified within the Department of Environmental Affairs Screening Report to be conducted as part of the Basic Environmental Impact Assessment. However, as the project site have already been completely transformed and the site were verified in terms of undertaking a site investigation, the following is noted for each assessment identified:

- **Agricultural Impact Assessment**

The site proposed to be affected by the abattoir has been utilized for agricultural purposes, specifically crop cultivation, for several years (prior to 2004). The proposed development of the red meat abattoir and associated structures is therefore proposed on portions of the site that have already been completely disturbed by previous farming activities.

The abattoir proposed to be constructed on the proposed project area, is still regarded as a form of agriculture and therefore no agricultural impact assessment was undertaken as part of the Environmental Authorisation application.

- **Heritage and Paleontological Impact Assessment**

During the site survey, it was noted that the entire project area have already been transformed and therefore no Heritage or Paleontological Impact Assessment was undertaken. The Screening Report also noted that the Archaeological, Cultural and Paleontological theme is of low and medium sensitivity.

- **Terrestrial Biodiversity Assessment / Animal and Plant Species Assessment**

The Screening Report indicated that the Terrestrial Biodiversity Theme is of high significance and this can be attributed to the fact that the project area is located within a CBA2 and ESA2 area as noted within the North-West Biodiversity Sector Plan of 2015. The site investigation revealed that the entire project area has however been transformed by the agricultural activities and that no natural or indigenous vegetation remains on site. This extensive land use has led to significant transformation of the natural habitat, resulting in an environment which is largely altered and modified from its original state.

Given the existing level of transformation, and the fact that there is no indigenous vegetation within the proposed project area, the proposed development is not expected to have any impact on terrestrial biodiversity. For this reason, a Biodiversity Assessment was deemed unnecessary and was not conducted.

- **Aquatic Biodiversity Assessment**

The nearest watercourse, the Kareespruit is located within the perimeter of the proposed project site and forms the eastern boundary of the development footprint of the site. Given the distance

of the project activities from the Kareespruit, an Aquatic Impact Assessment was conducted as part of the Environmental Impact Assessment (EIA) process.

The Screening Report identified, the Aquatic Biodiversity Theme to be of very high significance and for this reason the Aquatic Impact Assessment was undertaken and the following conclusions were made:

The ecological resources associated with the extent of the project area was assessed at the time of sampling, in line with the best practice guidelines. The development is considered to pose a potential impact on the receiving aquatic environment, due to the proximity of the Kareespruit River, however, no NFEPA wetlands are directly associated with the proposed development.

During the Aquatic Assessments, four sites were assessed as noted in Figure 11 below:

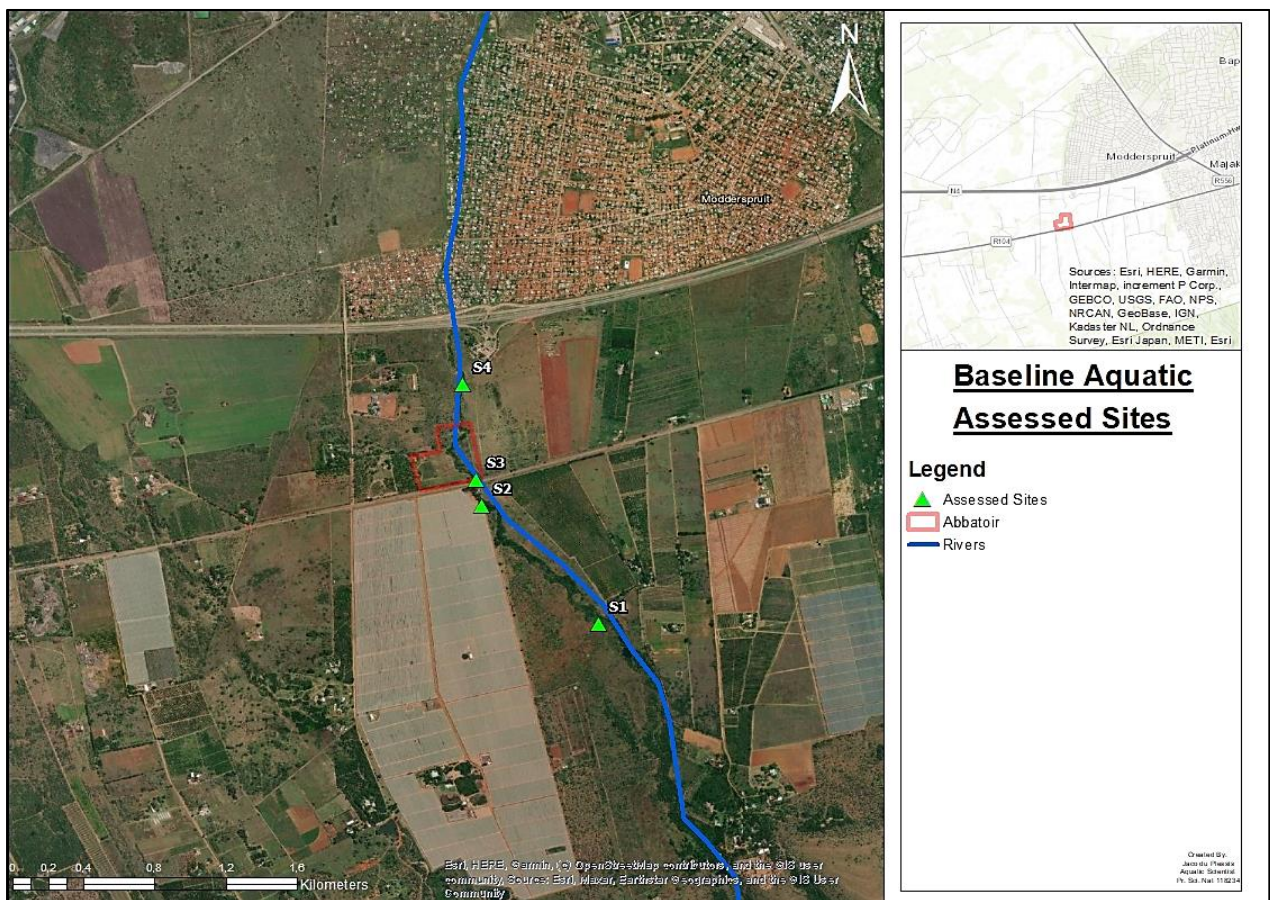


FIGURE 11: LOCATION OF THE SITES ASSESSED DURING THE AQUATIC IMPACT ASSESSMENT

The instream and riparian integrity of the Kareespruit at assessed site 1 was classed Natural (Category A). No impacts apart from limited solid waste and recent signs of burning was observed at the time of sampling.

The instream and riparian integrity of assessed sites 2 and 3, were classed moderately modified. Which is mainly due to the established gravel road and electric fence perimeter situated at assessed site 2 and the established river crossings of the R104 at assessed site 3, which have

concentrated the natural flow paths of the Kareespruit and resulted in a degree of clearing of the established riparian area.

The instream and riparian integrity of assessed site 4 was classed Natural (Category A). Impacts were limited to solid waste disposal instream and overburden soil dumped which impedes the riparian area.

Based on the assessment, the Kareespruit River is deemed to be highly ephemeral (event driven) only flowing at times of rain. However based on the information as set out for the Sub Quaternary reach, a diverse fish assemblage has been recorded further downstream within the Kareespruit River.

Major potential impacts to be expected from the proposed abattoir activities include the following:

- potential encroachment
- Possible clearing of the associated riparian areas for the proposed aerobic and anaerobic dams during the construction phases;
- Potential water quality deterioration and pollution during operation if untreated effluent discharged into the adjacent Kareespruit.

With the implementation of recommended measures, impacts can however be localised to the immediate area.

- **Health Impact Assessment**

It is noted that various health risks are associated with the operation of an abattoir. Foodborne outbreaks can be easily transmitted at meat processing facilities and such outbreaks could have an impact on individual consumers, food businesses as well as the society in general.

The Meat Safety Act of 2000 (Act No 40 of 2000) stipulates the minimum requirements for the registration of red meat abattoirs and provides measures for the hygiene management and evaluation systems, hygiene requirements for persons entering abattoirs, as well as the treatment of condemned material.

It must be noted that the proposed abattoir will be required to adhere to all regulations stipulated within the Meat Safety Act, 2000 and in addition to this, regular inspections will be undertaken by registered inspectors to ensure full compliance with the regulations stipulated within the Meat Safety Act of 2000.

With the implementation and adherence to the regulations stipulated within the Meat Safety Act, 2000, the impact on the health of consumers and abattoir workers are found to be minimised and therefore no Health Impact Assessment was undertaken.

- **Socio-Economic Assessment**

The construction and operation of the proposed abattoir will have a significant positive impact on the surrounding local community as the project will be providing much needed job opportunities for the local community, which would result to an improvement in their current livelihood.

In addition to the job opportunities to be provided and on a regional scale, the abattoir will be assisting in meeting the demand for food which is increasing exponentially with the increase in the population being experienced annually.

For this reason, no socio-economic impact assessment was undertaken for the proposed abattoir.

- **Ambient Air Quality Impact Assessment**

Air pollution resulting from the operation of abattoirs are mostly associated with the burning or incineration of carcasses. It must be noted that no carcasses or animal waste is proposed to be burned or incinerated on site and therefore no air emissions are expected with the operation of the abattoir.

Heaps of waste materials could also result in foul smells within the vicinity of the abattoir. However, no waste is proposed to be stored on site for extended periods and for this reason, no air quality impact assessment was undertaken for the operation of the abattoir.

It is believed that all impacts associated with the quality of air can effectively be mitigated if measures included within the Environmental Management Plan is adhered to.

- **Marine Impact Assessment**

The abattoir is not proposed near any marine environment and therefore no marine impact assessment was undertaken as part of the impact assessment process.

- **Noise Impact Assessment**

The most common noise to be generated in abattoirs are the continuous noise generated by the electric motors that runs throughout the process of slaughtering. Most of these noises generated will however be taking place within the closed abattoir building which would restrict the impact of noise generation on adjacent landowners. The nearest sensitive receptor to the proposed abattoir site is located approximately 200m west of the proposed site.

As most of the noise generating equipment will be enclosed, the impact on surrounding landowners or land users are minimised and therefore no Noise Impact Assessment was undertaken for the proposed abattoir.

It is however imperative that the owner of the abattoir adheres to the Occupational Health and Safety Act 85, 1998. Such measures are included within the Environmental Management Plan to be implemented and must be implemented during operation.

- **Traffic Impact Assessment**

The R104 Provincial Road is the main access to the proposed abattoir site. The R104 Provincial Road is accessible via the N4 Highway which connects Pretoria with Rustenburg. The R104 provincial road is currently in a derelict state and it is noted that adding additional vehicular traffic to this infrastructure, might further impact the condition of the provincial road. Various mining activities within the surrounding environment resulted to an increase in heavy moving vehicles making use of the R104 provincial road for the transportation of goods, in order to avoid the toll fees associated with the N4 Highway. The R014 provincial road was not designed to accommodate all of the heavy moving vehicles associated with the surrounding mining activities and this resulted to the derelict state of the existing access to the proposed abattoir site. It is however noted that the R104 provincial road is under the jurisdiction of the North-West Department of Public Works, Roads and Transport and this Department is responsible for the upgrade of the road to ensure the safety of all motorists travelling on the R104.

The proposed abattoir is proposing a slaughtering capacity of 200 cattle and 200 sheep per day. This entails that 200 cattle and 200 sheep will be delivered to the abattoir daily. Bila Foods have however commenced with the operation of a feedlot with a carrying capacity of 2400 cattle, approximately 1km south of the proposed abattoir site. A number of the cattle will therefore be transported from the feedlot to the abattoir and will not be making use of the R104 provincial road, but rather of the unpaved access roads. The R104 provincial road will only be crossed in order to access the abattoir site.

A number of trucks will however still be travelling to and from the abattoir on a daily basis for the delivery of cattle and sheep and the collection of carcasses and/or packaged meat. It is estimated that the abattoir will increase the flow of traffic by adding approximately 6 heavy moving vehicles on the R104 on a daily basis and a number of smaller delivery trucks for the collection of carcasses. It is however not expected that the flow of traffic would increase to such an extent that it would negatively impact the other motorists travelling on the R104 provincial road. The condition of the road is however something which must be addressed by the North-West Department of Public Works, Roads and Transport.

6 METHODOLOGY OF ASSESSING THE SIGNIFICANCE OF IMPACTS

This section outlines the method used for assessing the significance of the potential environmental impacts during the construction/establishment, operational and decommissioning phases.

For each impact, the **EXTENT** (spatial scale), **MAGNITUDE** and **DURATION** (time scale) would be described, as shown in **Table 7**. These criteria are then used to determine the **SIGNIFICANCE** of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the Report represents the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.

The following tables show the scale used to assess these variables and defines each of the rating categories.

TABLE 7: ASSESSMENT CRITERIA FOR THE EVALUATION OF IMPACTS

Criteria	Category	Description
Extent or spatial influence of impact	Regional	Beyond a 30km radius of the candidate site.
	Local	Within a 30km radius of the candidate site.
	Site-specific	On site or within 100 m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	High	Natural and/ or social functions and/ or processes are <i>severely</i> altered
	Medium	Natural and/ or social functions and/ or processes are <i>notably</i> altered
	Low	Natural and/ or social functions and/ or processes are <i>slightly</i> altered
	Very low	Natural and/ or social functions and/ or processes are <i>negligibly</i> altered
	Zero	Natural and/ or social functions and/ or processes remain <i>unaltered</i>
Duration of impact	Long-term	More than 10 years after construction
	Medium-term	Up to 5 years after construction
	Construction-term	Up to 3 years

The **SIGNIFICANCE** of an impact is derived by considering magnitude, duration and extent of each impact. The criteria employed in arriving at the different significance ratings are shown in Table 8.

TABLE 8: DEFINITION OF SIGNIFICANCE RATINGS

Significance ratings	Level of criteria required
High	<ul style="list-style-type: none"> • High magnitude with a regional extent and long-term duration • High magnitude with either a regional extent and medium-term duration or a local extent and long-term duration • Medium magnitude with a regional extent and long-term duration
Medium	<ul style="list-style-type: none"> • High magnitude with a local extent and medium-term duration • High magnitude with a regional extent and construction period or a site-specific extent and long-term duration • High magnitude with either a local extent and construction period duration or a site-specific extent and medium-term duration • Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Low magnitude with a regional extent and long-term duration
Low	<ul style="list-style-type: none"> • High magnitude with a site-specific extent and construction period duration • Medium magnitude with a site-specific extent and construction period duration • Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Very low magnitude with a regional extent and long-term duration
Very low	<ul style="list-style-type: none"> • Low magnitude with a site-specific extent and construction period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	<ul style="list-style-type: none"> • Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the **PROBABILITY** and **CONFIDENCE** of this impact are determined using the rating systems outlined in

Table **9** and **Table 10**. The significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the **REVERSIBILITY** of the impact is estimated using the rating system outlined in **Table 11**.

TABLE 9: DEFINITION OF PROBABILITY RATINGS

Probability ratings	Criteria
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

TABLE 10: DEFINITION OF CONFIDENCE RATINGS

Confidence ratings	Criteria
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

TABLE 11: DEFINITION OF REVERSIBILITY RATINGS

Reversibility ratings	Criteria
Irreversible	The activity will lead to an impact that is in all practical terms permanent.
Reversible	The impact is reversible within 2 years after the cause of the impact is removed.

7 ENVIRONMENTAL IMPACT ASSESSMENT

Various aspects and bio-physical and social impacts are to be considered for the construction and operation of the red meat abattoir. The biophysical and social-economic impacts identified, are assessed in the sections below.

7.1 Impacts associated with the construction of the abattoir

The following aspects must be addressed during the construction phase of the abattoir and butchery:

- *Soil Pollution*
- *Impact on water resources*
- *Generation of dust*
- *Generation of noise*
- *Generation of waste*
- *Impact on traffic*
- *Socio-economic impact*

7.1.1 Impact on soil

Description of the potential impact

The construction of the proposed abattoir and butchery could negatively impact soil through vegetation removal, increasing the risk of soil erosion as well as the loss of topsoil. Additionally, heavy machinery may compact the soil, reducing its water absorption and affecting plant growth. Accidental spills of hazardous substances like oil and fuel during refuelling or maintenance could lead to soil contamination, harming microbial processes and soil organisms which is essential for maintaining the health of soil.

Significance of the impact

During construction, soil could be impacted by the following:

- Erosion
- Contamination with the use and possible spillage of hazardous substances.

The slope of the proposed project area is relatively flat and for this reason the possibility of erosion occurring is low. The impact is subsequently classified to be of low significance prior to the implementation of mitigation measures.

Another factor impacting soil would be the possible spillage of hazardous substances. This impact is of medium magnitude, as natural functions and/or processes could be notably altered. The impact is however of site-specific extent and short duration and for this reason the impact is rated to be of low significance prior to the implementation of mitigation measures.

TABLE 12: IMPACT ON SOIL

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Erosion [NEGATIVE]	Medium	Site specific	Short term	Probable	Low	Very Low
Soil Contamination [NEGATIVE]	Medium	Site specific	Short term	Probable	Low	Very Low

Mitigation measures

- To minimise the possibility of erosion, it is recommended that no disturbed areas be left unattended. Disturbance and clearance of vegetative cover must be restricted to the proposed footprint.
- Measures to reduce the velocity of water, must be taken on areas prone to erosion.
- Should there be any spillage of hazardous substances during the establishment phase, soil must be removed up to a depth of 300mm and be disposed of at a registered hazardous waste disposal facility. Proof of such disposal must be kept on file.

7.1.2 Impact on water resources

Description of the potential impact

The nearest surface water resource is located adjacent and east of the footprint of the abattoir development area. If construction activities are not managed or mitigated, the Kareespruit River could be impacted negatively and the aquatic biodiversity as well as downstream water users could be affected.

During construction, the following activities could have a negative impact on the Kareespruit, if activities are undertaken within the 1:00-year floodline:

- Spillage of hazardous substances and materials; and
- Excavation of soil or removal of riparian vegetation.

Significance of the impact

As noted within the Aquatic Assessment undertaken, the aquatic sensitivity associated with the Kareespruit is high. Should any of the above activities affect the Kareespruit, natural process of the aquatic environment could be notably altered and for this reason the impact is regarded to be of

medium magnitude. The impact is however of short-term duration and site-specific extent and as no activities are proposed to be undertaken within the 1:00-year floodline, the probability of the impact occurring is unlikely. For this reason the impact on water resources during the construction phase, is rated to be of low significance prior to the implementation of mitigation measures.

TABLE 13: IMPACT ON WATER RESOURCES

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Impact on water resources [NEGATIVE]	Medium	Site specific	Short term	Unlikely	Low	Very Low

Mitigation Measures

- Ensure that no activities are undertaken within the 1:100-year flood line;
- Storage of all materials and stockpiles must be located as far as possible from the water resource;
- Any riparian vegetation must be protected and are not allowed to be removed;
- No washing of tool and/or machinery within the water resource;
- Recommendations included within the Environmental Management Plan must be adhered to.

7.1.3 Generation of dust

Description of the potential impact

Vegetation will be removed, and soil will be disturbed during the construction phase of the project. Heavy moving vehicles will also be travelling on site, which could result to an increase in the generation of dust. During construction, dust could be generated, affecting adjacent landowners.

Significance of the impact

Nearby adjacent landowners could be affected by the generation of dust. The impacts associated with the generation of dust is however of short duration and therefore the significance of the impact is low. Mitigation measures must however be implemented to minimise the possibility of the impact occurring.

TABLE 14: DUST GENERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Dust generation [NEGATIVE]	Low	Site specific	Short term	Probable	Low	Very Low

Mitigation measures

- Areas may not be disturbed and left unattended for long periods of time.
- Heavy moving vehicles and other vehicles must adhere to a speed limit of 40km/h; and
- Recommendations included within the Environmental Management Plan must be adhered to.

7.1.4 Generation of noise

Description of the potential impact

During construction, construction activities and machinery could generate noise, affecting adjacent landowners/farm steads negatively.

Significance of the impact

Adjacent landowners/farm steads within a close proximity to the abattoir could be affected by the generation of noise during the construction phase, however, construction activities will be temporary and only occur during working hours. For this reason, the impact has been rated to be of low significance. Mitigation measures must however be implemented to further minimise the possibility of the impact occurring.

TABLE 15: NOISE GENERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Noise generation [NEGATIVE]	Low	Site specific	Short term	Probable	Low	Very Low

Mitigation measures

- Ensure that all construction equipment is well serviced as per the manufacture’s manual throughout the construction phase.;

- The requirements of the Noise Control Regulations (2013) must be adhered to.
- No loud music is allowed on site

7.1.5 Waste generation

Description of the potential impact

During construction, construction waste is generated by construction activities and personnel. Improper disposal of such waste could negatively impact the surrounding environment.

Significance of the impact

Waste generated during the construction phase include the following:

- Construction waste such as concrete, building rubble, hazardous substances.
- Domestic waste generated by construction workers on site.
- Effluent from temporary toilet / sanitation facilities

The improper disposal of such waste could result in surrounding environment to become polluted, and soil could be affected by hazardous substances. The magnitude of the impact is medium with a site-specific extent and short duration and therefore the impact is rated to be of low significance.

TABLE 16: WASTE GENERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Waste generation [NEGATIVE]	Medium	Site specific	Short term	Probable	Low	Very Low

Mitigation measures

- Ensure that sufficient sealable bins are provided on site during the construction phase and undertake daily litter patrols.
- Concrete mixing must take place on a lined surface.
- All hazardous substances must be stored within a bunded area.
- Recommendations included within the Environmental Management Programme must be adhered to.

7.1.6 Traffic Impact

Description of the potential impact

During the construction of the proposed project, increased traffic volume from transporting materials and machinery may cause congestion and disruptions on local roads. This could lead to temporary road closures, lane restrictions, and heightened safety risks for both workers and the public. Additionally, the construction traffic may contribute to increased noise, air pollution, and accelerated wear and tear on road infrastructure. Effective traffic management and regular maintenance can help mitigate these impacts and ensure smoother construction operations.

Significance of the impacts

The increase in traffic volumes due to the transportation of materials and machinery during the construction phase, can lead to severe disruptions on local roads when considering the current condition of the R104 Provincial Road. These disruptions include congestion and could extend over a period of approximately 12 months. The increase in vehicular movement along the R104 during construction, could result to the further deterioration of the R104 Provincial Road and should the Provincial Department of Public Works, Roads and Transport not address the current situation of the road, the impact could be of medium term.

For this reason, the impact has been assessed to be of medium magnitude prior to the implementation of mitigation measures.

TABLE 17: TRAFFIC IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Traffic [NEGATIVE]	Medium	Site specific	Medium term	Probable	Medium	Low

Mitigation measures

- Traffic management plan
- Road maintenance and repair to be undertaken by the DPWRT
- Construction scheduling
- Alternative roads
- Safety measures

7.1.7 Socio-economic Impact

Description of the potential impact

During construction, various temporary job opportunities will be created which will have a positive impact on the livelihoods of those employed.

In terms of safety and security, there is always risk associated when working with machinery and therefore it is essential that all workers comply with the Health and Safety Act 85 of 1993.

Significance of the impacts

Based on the methodology detailed in **Section 6**, the following ratings have been assigned to the 'employment opportunities and impact associated with health and safety of employees respectively.

The job opportunities during the construction phase are short-lived and therefore the impact is only of medium (+) significance. In terms of the health and safety aspects of workforce, the significance of the impact has been rated to be of low significance due to the short construction timeframe. Mitigation measures must however be adhered to.

TABLE 18: SOCIO-ECONOMIC IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Job Opportunities [POSITIVE]	Medium	Local	Short term	Definite	Neutral	Medium (+)
Health and Safety [NEGATIVE]	Medium	Site specific	Short term	Probable	Low	Very Low

Mitigation measures

The applicant and/or contractor must ensure that local residents receive preference for job opportunities where local labour might be required.

It is imperative that all personnel adhere to the Occupational Health and Safety Act 85 of 1998 and that no personnel enter any other surrounding properties.

7.2 Impacts associated with the operation of the abattoir

The following aspects must be addressed when the increase in slaughtering capacity is assessed:

- *Water resource;*
- *Stormwater Management;*
- *Odour;*
- *Waste classification, storage and disposal;*
- *Health and Safety;*
- *Pests; and*
- *Socio-economic impact.*

7.2.1. Impact on water resources

Description of the potential impact

As outlined in the project description, the nearest surface water resource is located adjacent and east of the footprint of the abattoir development area. If operational activities are not managed or mitigated, the Kareespruit River could be impacted negatively and the aquatic biodiversity as well as downstream water users could be affected.

It is also proposed that water be abstracted from eight boreholes located on site and used daily for various operational processes. The availability of water is critical for the proposed abattoir, as it is needed for cleaning, processing, and other essential activities. Possible over abstraction could result in the depletion of groundwater resources.

In terms of domestic effluent treatment, the abattoir facility is proposing to construct a septic tank to accommodate the sewage generated by the workers at the facility. If the septic tank is not maintained, there is a possibility that groundwater could become polluted.

The wastewater generated from the abattoir will consist of a mixture of dissolved solids, blood, fat, animal waste. This wastewater will be collected and treated by means of using aerobic and anaerobic treatment ponds. All wastewater generated as a result of cleaning activities within the abattoir, will flow through the sump where solids are trapped before remaining liquids are diverted to the anaerobic, facultative and aerobic pond for treatment. Following the treatment of the wastewater, water is used for irrigation purposes. The proposed wastewater treatment system will ensure that the wastewater is adequately treated before reuse.

According to the layout proposed for the abattoir facility, it is noted that the wastewater treatment ponds are located approximately 25m-30m from the edge of the watercourse, but outside the 1:100-year floodline. The Kareespruit River could subsequently be impacted if the ponds were to overflow and untreated effluent would discharge into the watercourse. The surface water body could also be impacted if wastewater is not treated effectively prior to the use for irrigation purposes. Groundwater could also become polluted if the aerobic and anaerobic ponds were not constructed according to the approved engineering designs.

Significance of the impacts

A Geo-Hydrological Assessment was undertaken for the abstraction of water from the eight respective boreholes located on site. In total, the eight boreholes located on site will produce a total water volume of 436m³/day and it is noted that the total water demand for the operation of the abattoir equates to 300m³/day. For this reason, it was established that the volume of groundwater would be sufficient to cater for the total demand of 300m³/day. The impact on the depleting of water resources is regarded to be of medium magnitude, local extent and long-term duration. For this reason the impact is regarded to be of medium significance prior to the implementation of mitigation measures.

As for assessing the possible pollution of ground- and surface water resources, it is acknowledged that no structures or infrastructure associated with the abattoir, is located within the 1:100-year floodline. In addition to this, the wastewater treatment ponds have been designed to ensure that the possibility of groundwater contamination is unlikely.

Should wastewater within the wastewater treatment ponds not be treated to an acceptable standard, groundwater resources could be affected negatively and surface water resources could be affected if untreated wastewater is used for irrigation purposes. In addition to this, the use of a septic tank on site for the purpose of domestic sewage disposal, also increases the possibility of groundwater pollution if the septic tank is not regularly maintained. These impacts are therefore probable and could be of long-term duration if the impacts are not addressed. Due to the high magnitude of the impact and the local extent, the impact is regarded to be of high significance prior to the implementation of mitigation measures.

Cumulative Impact:

It is acknowledged that Bila Foods also commenced with the operation of a feedlot approximately 1km south of the proposed abattoir project site. The feedlot will also be utilising groundwater resources for operational purposes. It is also noted that other agricultural activities surrounding the site is making use of groundwater resources for their farming operations. Cumulatively, the additional abstraction of water from the groundwater resource could have a significant impact on the groundwater aquifer if not managed and metered. The impact is therefore of high magnitude, local extent and long-term duration and therefore the impact is therefore of high significance prior to the implementation of mitigation measures. However, by implementing mitigation measures, the impact would be reduced to be of low significance.

TABLE 19: IMPACT ON WATER RESOURCES

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Impact on water availability [NEGATIVE]	Medium	Local	Long term	Probable	Medium	Low
Ground- and surface water pollution	High	Local	Long-term	Probable	High	Low

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
[NEGATIVE]						
Cumulative Impact						
Impact on water availability [NEGATIVE]	High	Local	Long term	Probable	High	Low

Mitigation measures

- The applicant must take cognisance of the fact that water is a scarce resource and abstraction of the water from the groundwater resource must be managed in accordance with the Water Use License.
- Septic tank to be established on site must be regularly maintained;
- No activity or development may be undertaken within the riparian area of the Kareespruit River. All activities and developments must be directed away from the watercourse and be located outside the 1:100-year floodline;
- Groundwater quality and yield must be tested regularly to ensure that groundwater resources are not polluted and that the groundwater resources are not being depleted. Abstraction of groundwater resources must be in accordance with the WUL conditions (WUL in process);
- The quality of the surface water resources must be tested bi-annually to ensure that the abattoir activities are not impacting the adjacent surface water resource;
- The applicant must ensure that wastewater is treated to an acceptable standard before being irrigated on the surrounding property. Treated effluent water quality must be tested on a monthly basis to ensure compliance;
- Stipulations of the Environmental Management Program (EMPr) should be adhered to during the operational phase of the project.

7.2.2. Odour

Description of the potential impact

Unwanted odours emanating from the red meat Abattoir could include odours from urine and manure in holding pens, blood residues, or disposal of animal waste. Animal waste which cannot be used or sold as a by-product, will be stored within a cold room until it can be removed from site. Improper management of such disposal could cause bad odours resulting in bad air quality.

Significance of the impact

The holding pens and abattoir surfaces are washed continuously and therefore the odours emanating from the holding pens or the abattoir is minimal.

Other animal waste is stored within a cold room until it can be removed from site and be disposed of by means of a third-party contractor. Storing such waste products within a cold room results in very little odour being generated. The impact is therefore of low significance after the implementation of mitigation measures.

Cumulative Impact:

It is acknowledged that Bila Foods also commenced with the operation of a feedlot approximately 1km south of the proposed abattoir project site. The feedlot is proposed with a carrying capacity of 2400 cattle. When the impact of the feedlot is considered with the operation of the abattoir, it is likely that the possibility of bad odour experienced within the area is increased. The two sites are however located 1km from each other and therefore the likelihood of this impact occurring is low. The cumulative impact is however still considered to be of medium significance prior to the implementation of mitigation measures and therefore all measures must be taken at the abattoir site to ensure the minimisation of bad odours.

TABLE 20: ODOUR

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Odour generated by operational activities [NEGATIVE]	Medium	Site specific	Long term	Probable	Medium	Low
Cumulative Impact						
Odour generated by considering other agricultural activities within the vicinity of the site [NEGATIVE]	Medium	Site specific	Long term	Probable	Medium	Low

Mitigation measures

- Holding pen/lairages and abattoir surfaces must be cleaned continuously to avoid any odours from emanating from the abattoir.
- It must be ensured that the cold room is fully operational for the storage of waste products until it can be removed for site.

7.2.3 Waste Generation, Storage and Disposal

Description of the potential impact

The different sources of waste in red meat abattoirs that can impact the environment includes waste from:

- **Domestic Waste**

During the operational phase, domestic waste is generated. It is noted that the abattoir is not proposed within a municipal serviced area and therefore all waste generated would have to be stored temporarily on site until it can be removed to a registered landfill site. Improper storage and disposal of general waste on site, could result to a nuisance and environmental degradation. For this reason, effective management of domestic waste is required to ensure that the impact on the environment is minimised.

- **Animal holding pens/Lairages**

Large amounts of manure are generated daily at slaughterhouses, which are not only of environmental concern due to methane emission but also present a significant health risk if it is not adequately managed. Manure and urine in holding pens are cleaned daily and it is proposed that manure is collected from a third-party contractor, to be used as a by-product (composting).

The holding pen is washed with water and the effluent is diverted to the anaerobic, facultative and aerobic wastewater treatment ponds.

- **Bleeding and stunning.**

All blood is collected into drums or tanks so it can be further rendered into blood meal and fertilizer. Depending on the amount of blood gathered, these drums are collected by a third party on either a daily basis or every second day.

- **Carcass processing, offal and by-product processing including condemned waste.**

All by-products which cannot be used or sold, is stored within a refrigerated container until it can be removed from site by a third-party contractor, who disposes of such waste in accordance with the NEMWA 59, of 2008.

- **Waste water contaminating the sub-surface water.**

All water used to clean the abattoir surfaces are diverted to the sump where solids and fats are caught before the liquid wastewater is diverted to the anaerobic, facultative and aerobic ponds. The solids and fat trapped are collected from the sump and disposed with the other animal by-products. Wastewater is treated by means of anaerobic, facultative and aerobic ponds before treated water is used for irrigation.

Improper disposal of condemned/infectious waste can result to the spread of diseases such as Anthrax and Brucellosis from animals to humans. Condemned waste is therefore treated as hazardous waste and must also be disposed of accordingly to avoid any associated risks.

Significance of the impact

Improper disposal and treatment of abattoir waste and wastewater will have a significant impact on the surrounding environment as it could have the following impacts:

- Increase the health risk.
- Contaminate ground water resources; and
- Cause landfill airspace shortages

All waste (offal) which cannot be used or sold, is stored within a cold room container until it can be collected and removed from site by a third-party contractor, which disposes of such material in accordance with the National Environmental Management: Waste Act, No 59 of 2008 (NEMWA).

All wastewater generated as a result of cleaning activities being undertaken at the abattoir, is diverted to the wastewater treatment ponds for treatment. Should wastewater not be treated to an acceptable standard before it is used for irrigation, the possibility of polluting the surrounding environment increases. In addition to this, the inappropriate management of waste on site could result to an impact which would be of high magnitude. As waste is to be transported off-site, the extent of the impact is regarded to be local and of long-term duration. For this reason the impact is rated to be of high significance prior to the implementation of mitigation measures.

Cumulative Impact:

It is acknowledged that Bila Foods also commenced with the operation of a feedlot approximately 1km south of the proposed abattoir project site. The feedlot is proposed with a carrying capacity of 2400 cattle. Waste to be generated at the feedlot mostly includes manure and urine. Taking into consideration the manure to be removed from site for the feedlot in addition to the manure to be removed for the abattoir, it is noted that the cumulative impact of the waste generation is of high magnitude. The impact is also considered to be of local extent and long-term duration and therefore regarded to of high significance prior to the implementation of mitigation measures.

TABLE 21: WASTE DISPOSAL

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Waste generated during operational activities [NEGATIVE]	High	Local	Long term	Probable	High	Medium
Cumulative Impact						
Waste generated during operational activities	High	Local	Long term	Probable	High	Medium

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
[NEGATIVE]						

Mitigation measures

- Solid traps must be installed in all drains to collect waste products before it enters the anaerobic ponds;
- The quality of the water used for irrigation (treated effluent), must be tested on a monthly basis and must comply with the standards to be included within the Water Use License;
- Waste management improvement must include minimisation of waste generated at the source, including maximising the recovery of useful materials;
- Manure can be sold to be used as fertiliser;
- General waste generated at the abattoir must be transported and disposed of at a licensed municipal waste disposal site.

7.2.4 Health and Safety

Description of the potential impact

A licensed abattoir facility must adhere to specific hygiene and sanitary conditions in accordance with the Meat Safety Act (Act 40 of 2000), Red Meat Regulations, No. 1072, 2004 as well as the Animal Diseases Act of 1984, to ensure the effective processing, preservation and safe storage of meat products for human consumption. Areas within abattoirs to be sanitized include, infrastructure and facilities contained therein, equipment, surrounding areas, abattoir workers and visitors.

Inadequate facilities and hygiene at slaughterhouses can result in contamination of meat and occupational hazards to workers. Condemned products not disposed of properly, are consumed by scavengers or people living off refuse sites and this could have a significant impact on the health and safety of humans and other life forms.

Significance of the impact

If the Bila Foods Abattoir does not comply with all the Health and Safety Regulations and Acts pertaining to red meat abattoirs, the impact on the health and safety of consumers, abattoir workers and/or visitors could be significant. It is therefore imperative for the abattoir to ensure compliance with all regulatory requirements associated with red meat abattoirs. Should these abattoir facilities not comply with applicable regulatory requirements, the impact would be of high magnitude and regional extent as products could be distributed and consumed nationally. The associated impact could also be of long-term duration if the impact is not addressed. For this reason, the impact is rated to be of high significance prior to the implementation of mitigation measures. Adherence to all regulatory requirements to ensure the safety of meat for consumers, would however reduce the impact to be of low significance.

TABLE 22: HEALTH AND SAFETY

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Unhygienic conditions at the abattoir [NEGATIVE]	High	Regional	Long term	Probable	High	Low

Mitigation measures

- All conditions included with the Meat Safety Act (Act 40 of 2000), Red Meat Regulations, No. 1072, 2004 as well as the Animal Diseases Act of 1984, must be adhered to ensure products are safe for human consumption.

7.2.5 Pests

Description of the potential impact

The operation of the proposed project may result in a rise in pest populations, especially if lairages, waste management and sanitation are inadequately handled. The housing of cattle and/or sheep will increase the population of flies within the immediate area.

The accumulation of animal waste, blood, and organic materials from the abattoir could also attract pests such as rodents and other insects. These pests could transmit diseases, contaminate food, and pose health and safety risks to employees and surrounding communities.

It is noted that some agricultural activities (crop production) are being undertaken adjacent to the proposed project site. An increase in fly populations could cause damage to crop both directly and indirectly. The type of damage depends on the species of flies. Direct damage could be caused by flies laying eggs in plant material, especially ripe and maturing fruit. This would result to larvae feeding on root hairs as well as tender roots, leaf tissue and fruits.

Significance of the impacts

The impacts associated with the rise in pest populations during abattoir operations, is of high magnitude due to the risk of disease spread and food contamination. Without mitigation, pest infestations are probable and pose health risks to workers and nearby communities and farming operations. However, with effective waste management and pest control measures, especially fly management, the impact can be reduced to be of low significance.

Cumulative Impact:

It is noted that Bila Foods also commenced with the operation of a feedlot approximately 1km south of the proposed abattoir project site. The accumulation of cattle, and especially the number of cattle proposed for the feedlot, could add to the possibility of fly infestation within the surrounding area. Cumulatively, the impact is therefore regarded to also be of high magnitude. However, as the

cumulative impact is being considered, the impact is of local extent and long-term duration. For this reason, the cumulative impact is regarded to be high without the implementation of mitigation measures.

TABLE 23: PESTS

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Pests [NEGATIVE]	High	Site specific	Medium term	Probable	Medium	Low
Cumulative Impact						
Pests [NEGATIVE]	High	Local	Long	Probable	High	Medium

Mitigation measures

- It is imperative for Waste Management Plan to be compiled and implemented on site;
- Sanitation practices at the abattoir facility must be adhered to and implemented in accordance with all national, provincial and local legislation and regulations.
- The fly management programme included within the EMP must be adhered to.

7.2.6 Socio-economic Impact

Description of the potential impact

The proposed project is expected to have a significant positive socio-economic impact on the surrounding community as well as regionally with the provision in the demand for meat products. Within the local community, permanent job opportunities will be created, thereby reducing unemployment and improving the livelihoods of employees and their dependents.

In addition to the above, the project will also contribute to the development of skills through employee training, improving long-term employability and expertise within the community.

Significance of the impacts

Based on the methodology detailed in **Section 6**, the following ratings have been assigned to the positive socio-economic impact associated with the abattoir.

It is also noted that the cumulative impact is regarded to be positive and of high significance when other surrounding projects are considered, such as the feedlot operation located near the proposed abattoir site.

TABLE 24: SOCIO-ECONOMIC IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Socio-Economic Impact [POSITIVE]	High	Local	Long term	Definite	Neutral	High (+)
Cumulative Impact						
Socio-Economic Impact [POSITIVE]	High	Local	Long term	Definite	Neutral	High (+)

Mitigation measures

The Red Meats Abattoir must ensure that local residents receive preference for job opportunities to be created by the abattoir.

7.3 Environmental Impact Statement

The table below summarises the impacts identified and assessed for the proposed construction and operation of the Bila Foods Abattoir as well as the cumulative impacts to be considered:

TABLE 25: ENVIRONMENTAL IMPACT STATEMENT

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction Phase Impacts		
Erosion	Low	Very Low
Soil contamination	Low	Very Low
Impact on water resources	Low	Very Low
Generation of dust	Low	Very Low
Generation of noise	Low	Very Low
Traffic	Medium	Low
Waste generation	Low	Very Low
Job Opportunities	Neutral	Medium (+)
Health and Safety Impact	Low	Very Low
Operational Phase Impacts		
Impact on water availability	Medium	Low
Ground- and surface water pollution	High	Low
Odour	Medium	Low
Waste Generation, Storage and Disposal	High	Medium
Health and Safety	High	Low
Pests	Medium	Low
Socio-Economic	Neutral	High (+)
Cumulative Impacts during operation		
Impact on water availability	High	Low
Odour generated by considering other agricultural activities within the vicinity of the site	Medium	Low
Waste Generation, Storage and Disposal	High	Medium
Pests	High	Medium
Socio-Economic	Neutral	High (+)

8 CONCLUSION AND WAY FORWARD

8.1 Assumptions and Limitations

In undertaking this investigation and compiling the Draft Basic Assessment Report, the following has been assumed:

- The information provided by the proponent is accurate and unbiased, and no information that could change the outcome of the Environmental Authorisation process has been withheld.
- The scope of this investigation is limited to assessing the environmental impacts associated with the construction and operation of Bila Foods Abattoir.
- The conclusion and recommendations proposed are based solely on the information, scope of works as agreed with the proponent.

8.2 Conclusion

The essence of all environmental assessment processes is aimed at ensuring informed decision-making and environmental accountability. Furthermore, it assists in achieving environmentally sound and sustainable development. The impact assessment for this project has been undertaken in line with the requirements prescribed in the NEMA regulations.

The assessment of the possible impacts associated with construction and operation of the proposed abattoir, concluded that the impact on the surrounding environment is of **medium to low significance if mitigation measures are implemented**. During operation, it is imperative that the following aspects be effectively managed to ensure that the impact on the surrounding environment is minimised:

- Waste management;
- Water pollution of the nearby Kareespruit;
- Water abstraction;
- Pest and fly management; and
- Health and Safety (sanitation)

Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment. Recommendations for the mitigation of impacts are included within Section 7 and the Draft Environmental Management Plan attached.

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation measures be included as the conditions of the authorisation.

8.3 Way Forward

The next steps for the Basic Assessment process will be to distribute the Draft Basic Assessment Report and make it available to the public (including the registered I&APs) and Organs of State for a period of 30 days, during which the Competent Authority, Northwest Department of Economic Development, Environment, Conservation and Tourism (DEDECT) will also be given the opportunity

to provide comments on the report. After the 30-day comment period, all comments will be addressed by the EAP and incorporated within the Final Basic Assessment Report to be submitted to the DEDECT for decision making. All registered I&APs will be notified of the decision and will be given an opportunity to appeal as per the NEMA requirements.

9 REFERENCES

National Environmental Management Act 107 of 1998 (NEMA 107, 1998)

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Aquatic Assessment undertaken for Bila Abattoir, The River Guy, 2024

<https://www.britannica.com/technology/meat-processing/By-products>

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