



**Proposed increase in slaughtering capacity at Medina
Meats Abattoir, Middelburg, Steve Tshwete Local
Municipality, Mpumalanga Province**

Draft Basic Assessment Report

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CORE Environmental Services

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EXECUTIVE SUMMARY

Medina Meats CC (Trading and referred to as Medina Meats) has been operating the existing abattoir for approximately 18 years and has recently decided to upgrade their facilities to increase its current slaughtering capacity to 280 red meat units per day and to accommodate the increase in slaughtering capacity, the following additions to the existing structures are proposed:

- Additional deboning section;
- Additional change rooms to accommodate increase in staff;
- Additional chillers and kraals;
- One additional anaerobic waste water treatment pond;
- One additional facultative waste water treatment pond; and
- One aerobic waste water treatment pond.

In order to increase the slaughtering capacity to 280 units per day, Environmental Authorisation (EA) is required in accordance with the National Environmental Management Act 107 of 1998. Medina Meats is currently abstracting water from a groundwater resource and making use of aerobic and anerobic ponds to treat waste water from the abattoir. Some of these water uses will also require a Water Use License in accordance with the National Water Act 36 of 1998 and therefore a Water Use License Application will also be submitted to the Department of Water and Sanitation (DWS).

Medina Meats subsequently appointed Core Environmental Services as an independent Environmental Consultant, to apply for the Environmental Authorisation 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 License in accordance with the National Water Act 36 of 1998.

The construction and operational phase for the increase in slaughtering capacity are likely to result in environmental and socio-economic impacts. The table below summarises the impacts identified and assessed for 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
Generation of dust	Low	Very Low
Generation of noise	Low	Very Low
Waste generation	Low	Very Low
Job Opportunities	Neutral	High (+)
Health and Safety Impact	Low	Very Low
Operational Phase Impacts		
Impact on water availability	Medium	Low
Groundwater pollution	Medium	Low
Odour	Medium	Low

Waste Classification, Storage and Disposal	Medium	Low
Health and Safety	Medium	Low
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.

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The assessment of the possible impacts associated with increasing the slaughtering capacity at the abattoir, concluded that the impact on the surrounding environment is of **low significance if mitigation measures are implemented**. 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 6 and also 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 included as the conditions of the authorisation.

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ABBREVIATIONS

BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
CR	Critically Endangered
DARDLEA	Department of Agriculture, Rural Development, Land and Environmental Affairs
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
VU	Vulnerable
WP	Well Protected
WUL	Water Use License

1. OVERVIEW OF THE PROJECT

1.1 Introduction

Medina Meats CC (Trading and referred to as Medina Meats) has been operating the existing abattoir for approximately 18 years and has recently decided to upgrade their facilities to increase their current slaughtering capacity to 280 units per day. In order to increase the slaughtering capacity to 280 units per day, Environmental Authorisation (EA) is required in accordance with the National Environmental Management Act 107 of 1998. Medina Meats is currently abstracting water from a groundwater resource and making use of aerobic and anerobic ponds to treat waste water from the abattoir. Some of these water uses will also require a Water Use License in accordance with the National Water Act 36 of 1998 and therefore a Water Use License Application will also be submitted to the Department of Water and Sanitation (DWS).

Medina Meats subsequently appointed Core Environmental Services as an independent Environmental Consultant, to apply for the Environmental Authorisation 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 License in accordance with the National Water Act 36 of 1998.

1.2 Location

Medina Meats CC is located on portion 33 of the farm Rondebosch 403-JS, Middelburg, Steve Tshwete Local Municipality, Mpumalanga Province.

Coordinates of the site:

25°45' 0.75"S

29° 30' 6.75"E

Please refer to the locality map below, Figure 1 below.

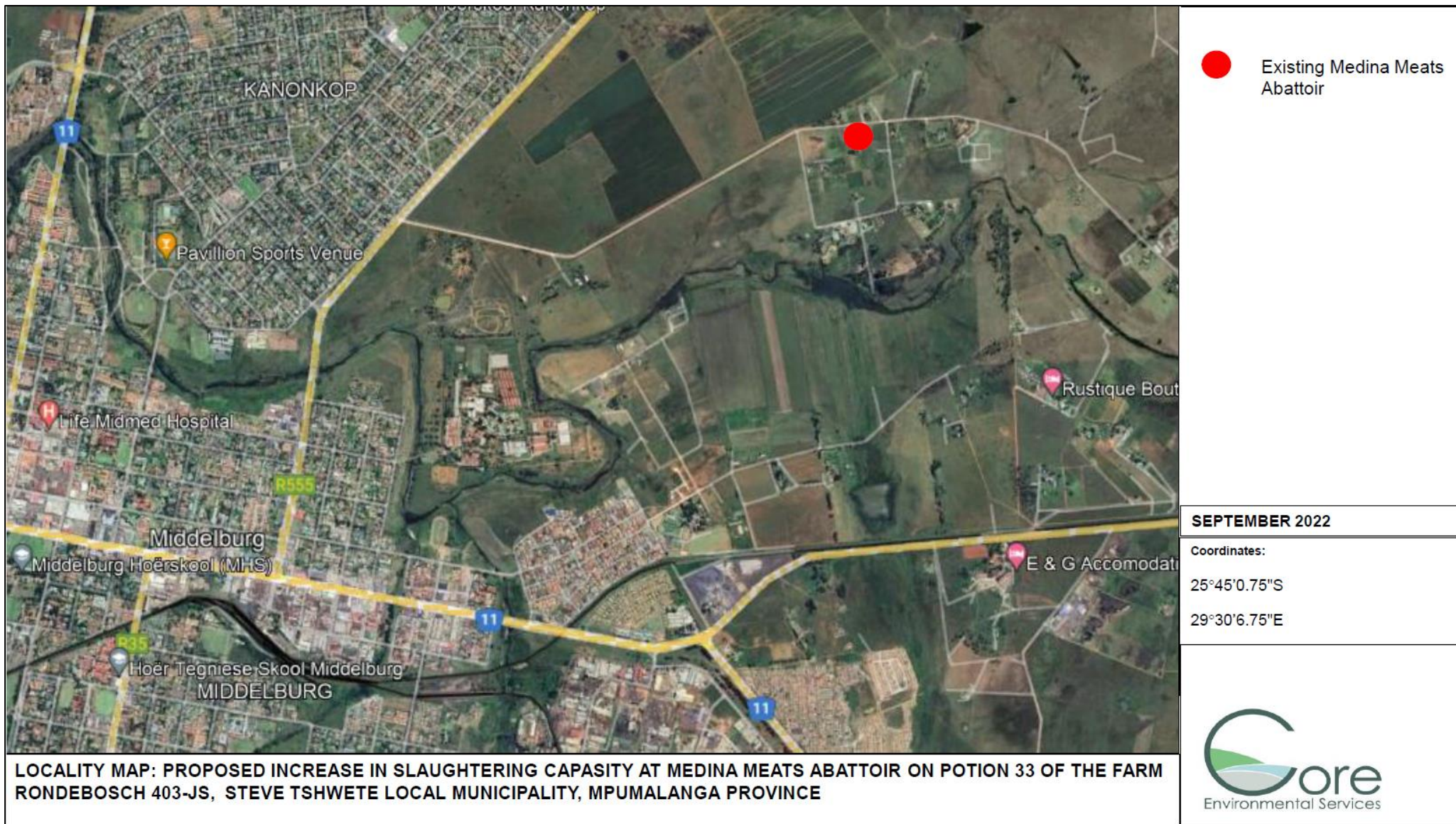


FIGURE 1: LOCALITY MAP – MEDINA MEATS ABATTOIR, MIDDELBURG, MPUMALANGA

1.3 Details of the EAP

Ms. Anne-Mari White, 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. White 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	Medina Meats 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 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 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)	The Act provides for the health and safety of people at work and for the health and safety of people using plant and machinery.

	<p>During establishment and operation, work must be conducted with strict adherence to the Occupational Health and Safety Act 85 of 1998.</p>
<p>National Environmental Management: Waste Act, No. 59 of 2008</p>	<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>Waste storage and disposal must be conducted in accordance with the NEM:WA 59, 2008</p>
<p>National Norms and Standards for the Disposal of Waste to Landfill (August 2013, GG No. 36784 GN No. 636)</p>	<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 (DWAF) 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>
<p>Red Meat Regulations, No 1072, September 2004</p>	<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> <ul 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 – <ul 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 c) Processing at a registered sterilizing plant.

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.
Steve Tswete Local Municipality Integrated Development Plan (IDP) (2021/2022)	The primary objectives of the IDP is to foster economic growth that creates jobs and improve infrastructure within the Province. More job opportunities will be created by increasing the slaughtering capacity of the existing Medina Meats Abattoir facility.

1.5 National Environmental Management Act 107 of 1998

In accordance with the National Environmental Management Act 107, of 1998, the following listed activity will be triggered by the proposed activity and will require approval prior to commencement:

GNR 983, Activity 37, 2014 (as amended in 2017):

The expansion and related operation of facilities for the slaughter of animals where the daily throughput will be increased by more than –

- (i) 50 Poultry;
- (ii) 6 Units of reptiles, red meat and game;
- (iii) 20 000kg wet weight per annum of fish, crustaceans or amphibians.

1.6 Description of the project

Medina Meats Abattoir has been operating for over 18 years, slaughtering cows and sheep which is sold to butcheries.

The operational process can be explained as follows:

Animals are transported to the holding pen of the abattoir via trucks and contained within a demarcated area.

The abattoir is divided into two different areas namely the dirty and clean area. Within the dirty area, the slaughtering takes place and all blood within this area is collected and transported off site. The blood is sold to a third-party contractor for the manufacturing of fertilizer. Within the clean area, the animal hides, heads, stomach etc., are removed and water used to clean this area is also diverted to the waste water treatment ponds (Anaerobic and facultative ponds). Carcasses are stored in refrigerators until being transported and sold to butcheries.

At present, water is being abstracted from a borehole located on the property and being used for the daily operation. The daily operation of the abattoir is dependent on water for cleaning purposes and therefore sufficient water is required to ensure a clean working environment.

Medina Meats Abattoir is proposing to increase its current slaughtering capacity to 280 red meat units per day and to accommodate the increase in slaughtering capacity, the following additions to the existing structures are proposed:

- Additional deboning section;
- Additional change rooms to accommodate increase in staff;
- Additional chillers and kraals;
- One additional anaerobic waste water treatment pond;
- One additional facultative waste water treatment pond; and
- One aerobic waste water treatment pond.

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.

In order for the abattoir to accommodate the current and expected growth and also ensure that the abattoir remains financially viable, it is imperative for the abattoir to increase their capacity to accommodate the growing demand.

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) to all registered I&APs, proof of which is attached in **Annexure C.2**;
- Placement of media advert in a local newspaper (The Lowvelder) on 9 September 2022 (see **Annexure C.3**).
- Placing of a notice at the proposed site took place on 31 August 2022 (see **Annexure C.4**);

The draft Basic Assessment Report will be made available for public review during October and November 2022.

To date, no comment has yet been received from any Stakeholder or Interested and Affected Party.

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 the 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 Layout alternatives

By changing the internal layout of the abattoir/slaughtering area, and expanding some of the structures of the abattoir, the applicant is able to increase its slaughtering capacity to 280 units per day. The applicant will therefore make adjustments within the footprint of the facility that would best improve the work flow to accommodate the increased slaughtering capacity.

3.1.3 No-Go alternative

The no-go alternative would be to not authorise the application for increasing the slaughtering capacity of the abattoir, however, no impact was identified to be so severe in order 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 study area is located within the Mesic Highveld Grassland Bioregion. The topography of the proposed project area is approximately 1400 meters above mean sea level. The vegetation is dominated by typical Highveld grasses. The project area is mostly flat and fit for development.

4.2 Climate

Mpumalanga is a province where the climate varies due to its topography. The local area is characterized by moderate climatic conditions with a mean maximum temperature of 20°C during January and 10°C during June.

The site is situated in a medium-high summer rainfall area, with an annual rainfall average of 714mm. Winter rainfall is almost non-existent. Its lowest rainfall (6mm) is in June and highest (158mm) in January.

4.3 Ecology

The regional veld type is classified by Acocks (1953) as Bankenveld (A61) and as Moist Sandy Highveld Grassland (LR38) by Low & Rebelo (1998). Classified on a regional scale and according to a more detailed system, Mucina & Rutherford (2006), the site falls within the Rand Highveld Grassland (Gm11). This ecosystem is rated as *Endangered* due to the low percentage of conservation areas (1%) and the high percentage of transformation due to agriculture, mining, urban sprawl and roads infrastructure (Mucina & Rutherford, 2006).

The vegetation type is classified as the Rand Highveld Grassland. Rand Highveld Grassland occurs in Gauteng, North-West, Free State and Mpumalanga Provinces in areas between rocky ridges from Pretoria to Witbank, extending onto ridges in the Stoffberg and Roossenekal regions, as well as west of Krugersdorp centred in the vicinity of Derby and Potchefstroom, extending southwards and northwards from there. The altitude of this vegetation type varies between 1 300-1 635 m, but reaches 1 760 m in places (Mucina & Rutherford, 2006). The vegetation is species-rich, wiry, sour grassland alternating with low, sour shrub land on rocky outcrops and steeper slopes. There is a high diversity of herbs, many of which belong to the *Asteraceae*, which is also a typical feature. Rocky hills and ridges carry sparse (savannoid) woodlands with *Protea caffra subsp. caffra*, *Protea welwitschii*, *Acacia caffra* and *Celtis africana*, accompanied by a rich suite of shrubs among which the genus *Sersia* (*S. magalismonata*) is most prominent.

As mentioned, the project area has however been completely transformed as the abattoir has been operating for over 18 years.

4.4 Surface and Groundwater

There are no natural water courses within the perimeter of the site, however, the Klein Olifants River is located approximately 700m to the south of the existing abattoir, with a tributary of the Klein Olifants River located approximately 800m to the east of the site.

4.5 Land use

The abattoir has been operating at the same location for approximately 18 years. Middelburg Town is located approximately 2km west of the abattoir while various small holdings surround the existing abattoir. These small holdings are located between 50m and 250m from the existing abattoir.

4.6 Geology and Soils

In terms of the published geological map sheet of South Africa, Council of Geoscience 2014, the area is underlain by massive generally red, porphyritic felsite/rhyolite, pyroclastic rocks sandstone / quartzite of the Kwaggasnek Formation, Rooiberg Group, Transvaal Supergroup. The ground mass of the Kwaggasnek Formation is predominantly composed of quartz and feldspar (K-feldspar) with varying proportions of opaque minerals, mainly a mixture of ilmenite and magnetite. The Kwaggasnek Formation is >1000m thick, and a laterally extensive shale/tuff unit underlain by a layer of volcanic breccia, called the Union Tin Member, forms the top of the formation and a quartzite, pyroclastic flow layer the base of the formation. (Please refer to Figure 6)

A topsoil horizon some 0,1 to 0,3m thick is prevalent throughout the proposed township, where it mostly comprises of abundant gravels in a brown, silty sand matrix with numerous grass roots. Finer surficial topsoil was noted locally. For the most part, the topsoil directly overlies a pebble marker gravel horizon, that in turn overlies reworked residua, residua and/or bedrock rhyolite.

The abovementioned soils profiled as completely weathered, either overlie residual rhyolite, that tends to have slightly lower Atterberg Limits and a slightly improved PRA Classification, but with a mostly similar grading modulus and Unified Soil Classifications. The bedrock rhyolite was also subjected to indicator tests since the material included a weathered component.

4.7 Socio-Economic Environment

Mpumalanga has a population of about 4.68 million people, just under 8% of South Africa's total population. Steve Tshwete Local Municipality (STML) has an estimated population in 2020 of 331 143 people and is expected to grow to 509 355 in 2030. This would see the municipality's share of the Nkangala District Municipality grow from about 21% to about 25%.

Out of a population of 317 187, 40% are youth (15-34). 53% of the population is employed. 34% is unemployed and 13% is economically inactive. Unemployment rate 18.8% in 2019 (17.3% in 2020, up from 15.4% in 2015). The youth unemployment rate is 27.1% but is higher for female youth (41.9% in the age range 15-24 in 2019). It is estimated that in STLM just under 28% of the population lived below

the lower-bound poverty line in 2019 the lowest portion in the province. However, this had increased from 23.2% in 2015 and is likely to have deteriorated in 2020 due to COVID-19.

STLM has a high functional literacy rate at 89%. This is the second highest rate in the province. STLM also has a high matric pass rate consistently around the 85% mark or higher. It has generally improved in recent years, but dropped in 2020 to 84.7%, probably due to COVID-19. STLM has the highest admission rate to university or degree studies in the province, with 42% of matriculants qualifying for degree studies in 2020.

STLM makes the third largest contribution to the Mpumalanga economy of local municipalities in the province. It contributes 14.3% to the provincial GDP. The total size of the Steve Tshwete Local Municipality economy in 2020 prices was estimated to be R53 billion. The municipality has generally outperformed the province economically, constantly growing at higher rates. The average economic growth rate for Steve Tshwete Local Municipality between 1996 and 2019 was 2.4% but dropped to 0.8% for the period of 2014 to 2019.

The socio-economic impact of increasing the slaughtering capacity at Medina Meats Abattoir will be largely positive as an additional 40 to 50 job opportunities will be created.

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:

- Agricultural Impact Assessment

The site has been operating as an abattoir for approximately 18 years on an area of 8Ha in size. The areas proposed for the additional structures are located directly adjacent to the existing structures and areas which have already been disturbed. It is highly unlikely that the additional areas to be developed directly adjacent to the existing structures would have been used for other agricultural purposes as the entire area has been operating as an abattoir for a number of years. This application will therefore have no impact on agricultural resources and for this reason, no agricultural impact assessment was conducted.

- Heritage and Paleontological Impact Assessment

The project area has already been transformed and therefore no Heritage or Paleontological Assessment would be required.

- Terrestrial Biodiversity Assessment / Plant and Animal Species Assessment

The Screening Report indicated that the Terrestrial Biodiversity Theme is of high significance, however, the entire project area has been operating as an abattoir for approximately 18 years and therefore the entire 8-hectare property has already been transformed. The increase in slaughtering capacity will not have an impact on the terrestrial biodiversity and for this reason, no Biodiversity Assessment was conducted.

- Aquatic Biodiversity Assessment

As noted within the project description, water for use during operation is abstracted from a borehole located on the property. A Water Use License Application is currently being processed.

The nearest watercourse is located approximately 700m south-east of the abattoir. No activity is taking place within any watercourse and for this reason, no aquatic biodiversity assessment was conducted.

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 2**. 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 2: 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 taking into account magnitude, duration and extent of each impact. The criteria employed in arriving at the different significance ratings is shown in Table 3.

TABLE 3: 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 4** and **Table 5**. 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 6**.

TABLE 4: 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 5: 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 6: 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

As the Medina Meats Abattoir has been operational for approximately years, the impact associated with the increase in slaughtering capacity during the operational phase, is investigated and described as seen below:

7.1 Impacts associated with the construction of additional structures for the increase in slaughtering capacity

The following aspects must be addressed during the construction phase of the additional structures to accommodate the increased slaughtering capacity:

- *Soil Pollution*
- *Generation of dust*
- *Generation of noise*
- *Generation of waste*
- *Socio-economic impact*

7.1.1 Impact on soil

Description of the potential impact

Removal of vegetation will disturb the soil surface and increase the possibility of soil erosion. Other activities which could also have an impact on soil, include the uncontrolled use of hazardous substances and/or heavy machinery. Hazardous substances such as oil, diesel etc., could be spilled while refuelling or using machinery, leading to the pollution of soil which can alter microbial processes and be toxic to soil organisms.

Significance of the impact

During construction, soil could be impacted by the following:

- Erosion; and
- 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, site specific and short duration and for this reason the impact is of also of low significance prior to the implementation of mitigation measures.

TABLE 8: SOIL POLLUTION

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 Generation of dust

Description of the potential impact

Vegetation will be removed, and soil will be disturbed during the construction phase of the project. 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 9: 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.

7.1.3 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 10: 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

7.1.4 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.

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 10: 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.

7.1.5 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 11: 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 increase in slaughtering capacity during operation

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

- *Water resources;*
- *Odour;*
- *Waste classification, storage and disposal;*
- *Health and Safety;*
- *Socio-economic impact.*

7.2.1. Impact on water resources

Description of the potential impact

As indicated in Section 4.4 above, the nearest surface water resource is located approximately 700m south-east of the existing abattoir. Ground water is abstracted from a borehole located on the property and the water abstracted is used daily during operation. The use of water is essential for the Medina Meats Abattoir, as its operational components depend on it.

The liquid waste is usually composed of dissolved solids, blood, fat, gut contents, urine and water. All waste water is diverted to a sump where the solids are trapped before the liquid waste is diverted to the anaerobic pond and then then facultative pond before treated waste water is irrigated.

The increase in slaughtering capacity will entail the construction of an aerobic pond and an additional anaerobic and facultative pond as more waste water will have to be treated. Should this waste not be treated according to acceptable standard before it is irrigated, ground water resources could be impacted.

Significance of the impacts

The increase in slaughtering capacity will entail that more water is abstracted from the borehole for operational purposes. This could impact the sustainability of groundwater and for this reason, a Geo-Hydrological Assessment is being undertaken as part of the Water Use Licensing Process. The assessment will ensure that water is abstracted sustainably if the recommendations of the specialist is followed. The impact on the availability of water is therefore of low significance if mitigation measures are implemented.

In terms of waste water, all waste water flows through the sump where any solids are trapped before remaining liquids are diverted to the anaerobic, facultative and aerobic pond for treatment, before it is irrigated. Should waste water not be treated to an acceptable standard, groundwater resources could be affected negatively.

The impact on water resources is therefore rated to be of low significance.

TABLE 12: 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
Groundwater pollution [NEGATIVE]	Medium	Site Specific	Medium term	Probable	Medium	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.
- The applicant must ensure that no waste water is treated to an acceptable standard before being irrigated on the surrounding property.
- 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 Medina Meats 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, is currently 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.

TABLE 13: 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

Mitigation measures

- Holding pen 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 classification, 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:

- Animal holding pens;
Manure and urine in holding pens are cleaned on a daily basis. At Medina Abattoir, the holding pen is washed with water and the effluent is diverted to the anaerobic, facultative and aerobic waste water 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 waste water 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. Waste water is treated by means of anaerobic, facultative and aerobic ponds before treated water is used for irrigation.

The risk associated with the disposal of condemned/infectious waste is accounted 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.

Significance of the impact

Improper disposal and treatment of abattoir waste and waste water 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 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).

Should waste water not be treated to an acceptable standard before it is used for irrigation, the possibility of polluting the surrounding environment is increased. The impact is therefore of medium significance prior to the implementation of mitigation measures.

TABLE 14: WASTE DISPOSAL

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

Mitigation measures

- Solid traps must be installed in all drains to collect waste products before in enters the anaerobic ponds.
- Waste management improvement must include minimisation of waste generated at the source, including maximising the recovery of useful materials;
- General waste generated at the abattoir must be transported and disposed of at a licensed municipal waste disposal site;

7.1.4 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, in order 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

Medina Meats Abattoir has been operating within the same facilities for approximately years and since operation, they have implemented all measures to ensure that conditions relating to the above-mentioned Acts and Regulations, are adhered to.

The increase in slaughtering capacity will have no impact on the health and safety aspects of the abattoir and for this reason the impact is of low significance.

TABLE 10: HEALTH AND SAFETY

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Unhygienic conditions at the abattoir [NEGATIVE]	Medium	Site specific	Long term	Probable	Medium	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 in order to ensure products are safe for human consumption.

7.1.5 Socio-economic Impact

Description of the potential impact

Increasing the daily slaughtering capacity at the Medina Meats Abattoir, will imply that an additional 40 to 50 resources will be employed on a permanent basis.

Significance of the impacts

Based on the methodology detailed in **Section 5**, the following ratings have been assigned to the employment opportunities associated with the increase in slaughtering capacity.

TABLE 11: SOCIO-ECONOMIC IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Job Opportunities [POSITIVE]	Medium	Local	Long term	Definite	Neutral	High (+)

Mitigation measures

The Medina Meats Abattoir must ensure that local residents receive preference for job opportunities where local labour might be required.

7.2 Environmental Impact Statement

The table below summarises the impacts identified and assessed for increasing the slaughtering capacity at Medina Meats Abattoir:

TABLE 12: ENVIRONMENTAL IMPACT STATEMENT

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction Phase Impacts		
Erosion	Low	Very Low
Soil contamination	Low	Very Low
Generation of dust	Low	Very Low
Generation of noise	Low	Very Low
Waste generation	Low	Very Low
Job Opportunities	Neutral	High (+)
Health and Safety Impact	Low	Very Low
Operational Phase Impacts		
Impact on water availability	Medium	Low
Groundwater pollution	Medium	Low
Odour	Medium	Low
Waste Classification, Storage and Disposal	Medium	Low
Health and Safety	Medium	Low
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 increasing the slaughtering capacity of Medina Meats 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 increasing the slaughtering capacity at the abattoir, concluded that the impact on the surrounding environment is of **low significance if mitigation measures are implemented**. 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 6 and also the Draft Environmental Management Plan attached.

The significance of the potential environmental (biophysical and social) impacts associated with the proposed project are discussed in detail under **Section 7**.

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

8.2 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 (DARDLEA) 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 DARDLEA 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)

General Notice Regulation 982, 983, 984 and 985 of 2014 (as amended in 2017)

Mpumalanga Biodiversity Conservation Plan, 2014

Meat Safety Act (Act 40 of 2000)

Red Meat Regulations, No. 1072, 2004

Animal Diseases Act of 1984

The mini guide to the Management of Abattoir Waste, Western Cape Government, Environmental Affairs and Development Planning