

Project Title

SM BRILLIANT POULTRY FARM – chicken farm operation for the production of broiler chickens for the meat industry - Brits District / North West Province

Project Name and Location

Ptn 1181 of Farm Hartebeestpoort C 419 JQ – Brits District

Co-ordinates: 25 32'16.02"S 27 49'33.63"E [Centre Point]

LPI Code: T0JQ 000 000 000 419 01181

Municipality: Madibeng / Brits Local Municipality

District: Bojanala District Municipality

Project Description

The development on Ptn 1181 of farm Hartebeestpoort C 419 JQ in the Brits District / Bojanala District Municipality-

Environmentally Controlled Chicken Houses

- 7 houses [125m x 15m x 4.2m] with a holding capacity of 42 500 chickens each [297 500 total]
- Water; feeding system and heating units for each house
- Bulk feed silos for each house on site
- Bulk water system for water from borehole supply
- Bulk water system for water from borehole supply
- Total production of around 297 500 chickens for 32 day cycle [7 cycles per year 2 082 500 total]
- The houses to be fenced in 2 bio-security areas [4 houses in one and 3 houses in the other] with full access control and bio-security measures

Date of Submission

August 2025

Name of Applicant

Project applicant:	SM Brilliant Solutions Group		
Trading name (if any):	SM Brilliant Poultry		
Contact person:	Ms. Sophie Mpete [ID 8619290401080]		
Physical address:	54 7 th Ave, Alexander, Gauteng, 2090		
Postal address:	54 7 th Ave, Alexander, Gauteng, 2090		
Postal code:	2090	Cell:	082 819 6849
Telephone:	==	Fax:	
E-mail:	johannamatsemela@gmail.com		

EAP Conducting the EIA

Company of Environmental Assessment Practitioner:	Green Environmental Consulting Services			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	N/A
EAP name:	RP Colyn [Pieter]			
EAP Qualifications:	EAPSA- EAP 2019-1358 EAP since 1992			

Professional affiliation/registration:	EAPSA – EAP; IAP2; NYIPP		
Physical address:	1126 Waterpoort Street, Faerie Glen, Pretoria 0081		
Postal address:	1126 Waterpoort Street, Faerie Glen, Pretoria 0081		
Postal code:	0081	Cell:	082 553 8844
Telephone:	012 991 2575	Fax:	0866 22 55 52
E-mail:	rpolyn@telkomsa.net or greenservices@telkomsa.net		

Leading Authority

Provincial Environmental Authority:	NW-DEDECT		
Name of contact person:	Ms O Skosana		
Postal address:	Private Bag X 2039 Mmamatho		
Postal code:	2735	Cell:	N/A
Telephone:	018 389 5156	Fax:	N/A
E-mail:	oskosana@nwpg.gov.za		

NW-DEDECT Project Reference

NWP/EIA – [Awaiting registration number]

Ms. O Skosana [Admin]

[Refer: Annex A – EAPASA Certificate of EAP]

Comments by the NW DEDECT

**** Awaiting Comments ****

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Acronyms and Abbreviations:

EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
EIA	Environmental Impact Assessment
FBAR	Final Basic Assessment Report
NW DEDECT	North West Department of Economic Development, Environment, Conservation and Tourism
PPP	Public Participation Process

ANNEXURES

Executive Summary

Ms Sophie Mpete is the new owner of the of the current farm operation on Ptn 1181 of Farm Hartebeestpoort 419 JQ. Ms Mpete wishes to diversify and enter the world of large scale chicken farming, thus expanding the yield potential of the farm by adding a formal chicken farm operation to the land.

The development will consist of the following infrastructure components:

- 7 houses [125m x 15m x 4.2m] with a holding capacity of 42 500 chickens each [297 500 total]
- Water; feeding system and heating units for each house
- Bulk feed silos for each house on site
- Bulk water system for water from borehole supply
- Bulk water system for water from borehole supply
- Total production of around 297 500 chickens for 32 day cycle [7 cycles per year 2 082 500 total]
- The houses to be fenced in 2 bio-security areas [4 houses in one and 3 houses in the other] with full access control and bio-security measures
- Staff ablution and toilet facilities for showering in and out every day;
- Control room for the remote monitoring of the different chicken houses;
- Bio-security office; examination room and cooler facility for the holding of mortalities;
- Back-up generator for the supply of power during power outages;
- Coal bunkers for the holding of bulk coal for the heating system.

Each chicken house will accommodate 42 500 chickens with a total holding capacity of 297 500 chickens per cycle. The facility will produce 7 cycles per year with a total of 2 082 500 chickens being produced for the fresh meat market [broiler chickens].

The portion of land to be used is an area of the land which is relatively flat, and will require minimal levelling and cleaning out of existing vegetation.

The application is made in terms of NEMA **GNR327 Listing 1 Activity 5 [ii] [iv]**

The process being followed is that of an EIA / Basic Assessment with a full PPP Process and assessment of both POSITIVE and NEGATIVE Impacts as identified.

NOTE:

There is no chicken farm operation on the farm currently.

1. Introduction

The farm, known as **Ptn 1181 of Hartebeestpoort 419**, is in the **Brits District**, and the area to be developed is around 7.35 Ha in size.

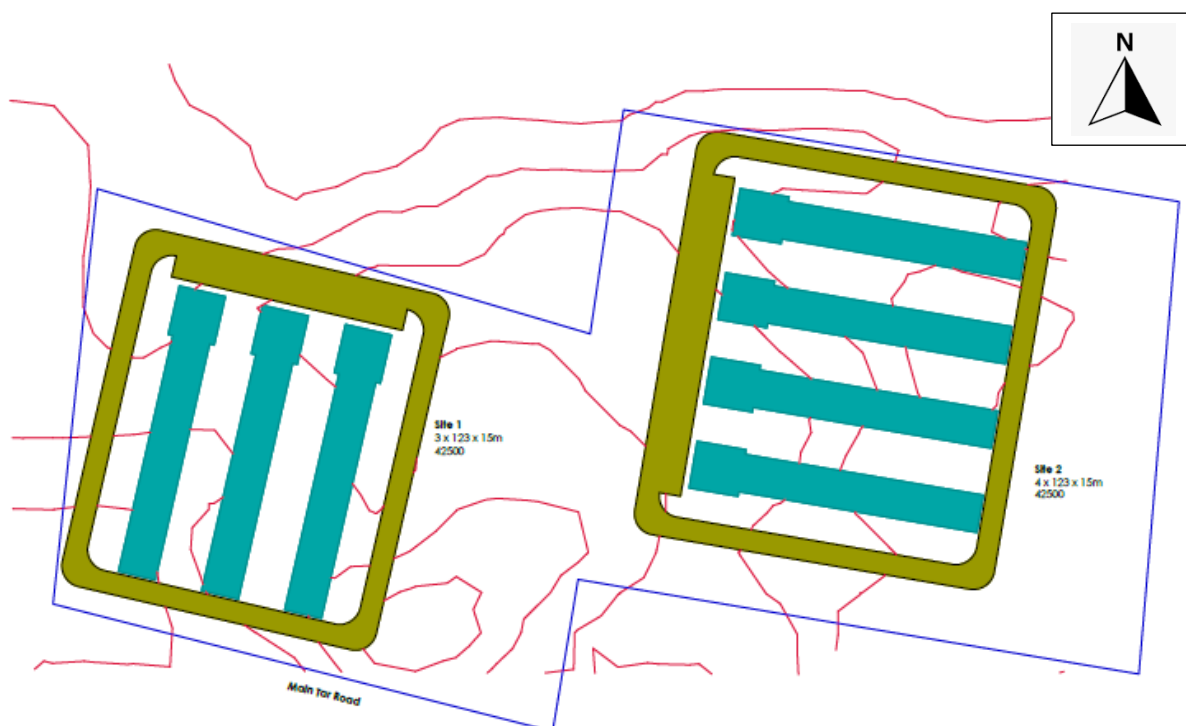


Photo 1: The farm Ptn 1181 Hartebeestpoort [RED] and the area to be used for the chicken houses indicated in [BLUE / GREEN]

In view of the ever increasing demand for fresh meat, especially chicken, the owner of the farm, has decided to construct seven [7] chicken houses on the farm, thus increasing the yield potential of the farm overall. With the [7] chicken houses the production yield will be increased by 297 500 broiler chickens every 32 – 35 day cycles / 2 082 500 total per year.

Land to be used: ± 7.25Ha [Indicated in BLUE]

NOTE:

The development will increase the yield potential of the farm

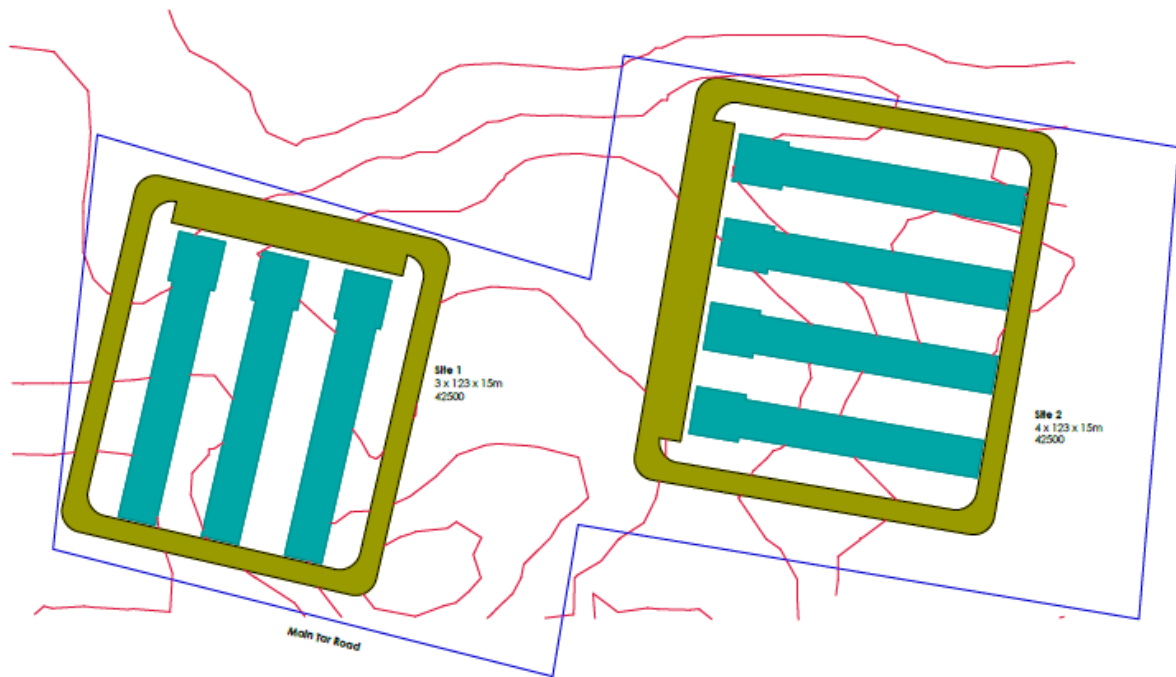


Photo 2: The portion of land to be developed [3 houses west and 4 houses east] each set in its own bio-security fenced area



Photo 3: Artist impression of the 7 chicken houses on the land

1.1 Purpose of the project

The main purpose of the chicken houses is to provide an additional source of broiler chickens to the fresh meat market.

1.2 Objectives

The objective of the development is to provide larger numbers of adult chickens to the fresh meat broiler market as the demand for chicken is ever-increasing. At present South Africa

imports in excess of 360 000 tons of chicken from other countries. With the ever decreasing value of the SA Rand the imported product is becoming very expensive. International markets are also “dumping” produce on our shores which damages our local industry. As such the local economy must counter the impacts by becoming self-sufficient.

1.3 Project location and context

The farm portion is located around 11.2km north-eastt [NE] of the town of Brits off the Brits Airport road.

The surrounding area sees small scale farming as well as large scale farming in the form of centre pivot irrigation for cultivating crops. The area is very much a rural farming community.



Photo 4 : Farm [YELLOW] in relation to surrounding farming activities: 1km YELLOW and 1.5km in GREEN

1.4 The need for the EIA process

In terms of the National Environmental Management Act, Act 107 of 1998, [NEMA as amended], the activity of development and operation of facilities or infrastructure for the concentration of poultry in excess of 5000 units is a listed activity i.e. **GNR 327/7 April 2017**

Listing 1

Activity 5:-

- (ii) More than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days;
- (iv) More than 25 000 chicks younger than 20 day per facility outside an urban area.

The farm will also install bulk water storage reservoirs but according to **GNR 327/7 April 2017** the total storage will not exceed the minimum levels.

1.5 Sharing in existing infrastructure

Certain of the current infrastructure will not require duplication, and as such will be shared by the new chicken house operation i.e. access road; borehole and Eskom power supply point.

- a. **Water supply** – borehole supply will be used for the water requirements of the chicken farm operation.
- b. **Electricity supply** – the current electrical supply to the farm will be the source of electrical power for the new chicken houses.
- c. **Access Gate & Road** – the current access gate and road will also be used by the new houses for their supplies and removal trucks and as such minimal new internal road and gates will be required.
- d. **Footprint area** – the area being identified for the development is:
±7.25 Ha on Ptn 1181 Farm Hartebeestpoort 419 JQ, and will accommodate the 7 new chicken houses; feed silos; slow combustion heating systems; coal bunker storage; parking areas for trucks and equipment; a diesel generator for power backup and a general manager's office.

NOTE: The houses will be built 3 in the west section and 4 in the east section, each within its own bio-security fenced areas, each with its own access control.

1.6 Identification of the appropriate site

In order to consider the site for the chicken houses the following needed to be considered:

- The position of the current infrastructure on site [Eskom and boreholes];
- Current other uses [i.e. crops] of land on the farm and already impacted land;
- Access to the current infrastructure and the available adjacent land;
- Ease of access for large trucks and trailers to the property;
- Use of existing roads so as not to disturb the environment any further;
- Contours and levels

It would not make financial sense to locate the houses in an area where the entire support infrastructure i.e. water; electricity and access must be duplicated or where existing use must be removed in order to accommodate the chicken houses.

In view of the above the decision to locate the new houses on this specific portion of land is the correct call. In fact it is **the only option in terms of site selection** for this farm.

1.7 Need and desirability

Food security is of prime importance to South Africa. Any development for a stronger supply of food, especially if it is sustainable and will save the country on expensive imports [make food more readily available to the population] should be supported. South Africa has a very strong need to reduce the import of chicken meat from other countries and this additional source of supply will assist in reducing our dependence on imports.

1.8 What about alternatives

Alternatives or considering alternatives, especially in the sphere of technology are always advisable. However, the developer on Ptn 1181 Hartebeestpoort 419 JQ intends to use the most modern of environmentally enclosed and controlled chicken house technology for the rearing of day-old chickens.

Add to that:

- the area to be used is not close to any wetlands;
 - there is only one area available for the proposed development;
- then the need to consider any other alternative site on the farm where the receiving environment may be impacted or the current use disturbed, is uncalled for.

2. Legal and Regulatory Framework

In South Africa, the legal requirements for conducting an Environmental Impact Assessment (EIA) are primarily governed by the National Environmental Management Act, Act 107 of 1998 [NEMA as amended] and its associated Regulations. NEMA sets out the framework for EIA in the country and establishes the key legal requirements for the process. The fundamental legal requirements for conducting an EIA in terms of NEMA are:

a. Mandatory EIA for a Listed Activity

NEMA categorises activities into two main groups: *listed* and *specified* activities. For listed activities, an EIA is mandatory, and they are defined in a list of activities set out in the NEMA EIA Regulations. Should a project fall under any of the listed activities, then an EIA is required.

b. Submission of a Basic Assessment Report

For projects classified as “*basic assessments*” in the NEMA regulations, the project proponent must submit a Basic Assessment Report to the competent authority. Such a report must outline the environmental impacts of the proposed project and also any mitigation measures employed.

c. Public Participation

Public Participation is a fundamental aspect of the EIA process in South Africa. The NEMA EIA regulations require that the public, including affected and interested parties, have the opportunity to comment on the EIA report and that their comments are considered in the decision-making process.

d. Compliance and Monitoring

Projects that receive an Environmental Authorisation (EA) must adhere to the conditions set out in their authorisation as well as the dictates of the Environmental Management Programme (EMPr) for the activity[ies] applied for.

e. Review and Appeals

The NEMA Act provides for a review process, also referred to as the Appeals Process whereby any party may request a review of an environmental authorisation [EA] or decision [RoD]. Appeals on Basic Assessment Authorisations [as in this application] would normally be forwarded to relevant authority and the MEC for Environment in the province.

f. Penalties and Enforcement

Non-compliance with NEMA and the conditions of an environmental authorisation may result in penalties, fines, and/or legal action.

g. Sustainability and Sustainable Development

NEMA emphasises the principles of sustainable development. It requires that the environmental; social and economic aspects of a project be considered in the decision-making process in order to achieve sustainability.

h. Integration with Other Legislation

NEMA requires that the EIA process consider other relevant laws and regulations as well, thus ensuring that it is integrated with other environmental and developmental initiatives.

These legal requirements ensure that the EIA process is robust and comprehensive, with a focus on transparency, public participation, and sustainability. It is essential for a project proponent to understand and comply with the NEMA requirements when planning and conducting EIAs for a project. In addition, these requirements may evolve as environmental regulations and standards are updated, so it is crucial to stay informed about any changes in the legal framework.

Other legislations to be considered are:

- National Heritage Resources Act, 1999 – Act 25 of 1999
- Animal Health Act, 2002 – Act 7 of 2002
- Agricultural Product Standard Act, 1990 – Act 119 of 1990
- Conservation of Agricultural Resources Act, 1983 – Act 43 of 1983
- Occupational Health and Safety Act, 1993 – Act 85 of 1993
- All Provisions of the National Water Act, 1998 – Act 36 of 1998
- National Environmental Management Biodiversity Act, 2008 – Act 10 of 2004
- National Environmental Management Act, 2008 – Act 59 of 2008
- Local Council by-laws pertaining to farming activities
 - Local Council Land Use Scheme
 - Local Council Development Plan
- North West Provincial Government: Veterinary Services
- South African Veterinary Strategy [2016 – 2026]

3. Description of the Proposed Project

Detailed project information is essential to thoroughly understand the project, its components, and its intended purpose. This includes project size, location, scope, design, and intended operations. Without a comprehensive understanding of the project, it is not possible to assess its potential environmental impacts accurately.

3.1 Information about the project

The development on Ptn 1181 of farm Hartebeestpoort C 419 JQ in the Brits District / Bojanala District Municipality-

Environmentally Controlled Chicken Houses

- 7 houses [125m x 15m x 4.2m] with a holding capacity of 42 500 chickens each [297 500 total]
- Water; feeding system and heating units for each house
- Bulk feed silos for each house on site
- Bulk water system for water from borehole supply
- Bulk water system for water from borehole supply
- Total production of around 297 500 chickens for 32 day cycle [7 cycles per year 2 082 500 total]
- The houses to be fenced in 2 bio-security areas [4 houses in one and 3 houses in the other] with full access control and bio-security measures

In addition also:

- Ventilation doors and vent fans;
- Day/night lighting systems;
- On-site computer system for the automation of the entire management system;
- Staff ablutions and shower facilities;
- Management control and monitoring room;
- Bio-security laboratory and fridge system for mortalities;
- Bio-security fence line and access control gate system.

3.2 Size of the chicken houses

Length: $\pm 125\text{m}$

Width: $\pm 15\text{m}$

Height: $\pm 2.4\text{m}$

3.3 Location

The development will be done on around 7.25Ha portion of land known as Ptn 1181 farm Hartebeestpoort 419 JQ, Brits District. The land identified for development was cultivated / transformed through agriculture in the past.

The farm access gates and internal roads service this portion of land and as such there is only the need to develop a new internal access road / gate to the one portion of the farm.

3.4 Scope

The scope of the project entails the design and construction of seven [7] environmentally controlled chicken houses of 42 500 holding capacity each, together with its associated infrastructure required to operate a chicken farm operation for the rearing of broiler chickens for the fresh meat industry.

3.5 Design

The design of the new chicken houses will be for environmentally controlled chicken houses that are totally enclosed with a computer-controlled environment. Ventilation; feeding; water; light and temperature will all be computer-controlled.



Photo 5: Environmentally controlled chicken house designs [example]

3.6 Intended Operation

The intention of the proposed development is the provision of adult chickens for processing at an abattoir as fresh meat for the local market. The operation will be for the rearing of day-old chicks to the adult bird stage before being processed at an abattoir.

The final number of chickens on site, once all [7] the houses are operational will be 297 500 chickens per cycle @ 7 cycles per year / 2 082 500 total per year.

3.7 Project components

The new chicken houses [7] will consist of:

- Foundation and concrete slab as the basis for the chicken house;
- Steel frame which will support the roof structure of the chicken house;
- 1.5m height brick wall from foundation up;
- Insulated wall panels with air vents;
- Steel superstructure for the insulated panels and specially insulated roof panels;
- Drag-and draw fan system to introduce airflow through the facility.

In addition, each house will also have:

- Two bulk feed silos [15 – 20 000 kg capacity] for each of the houses for the storage of the animal feed;
- A coal-fired slow combustion heating facility for each of the chicken houses for heating air during cold spells;
- Water and electrical connections for the operation;
- A specialist computer system for each of the houses that will monitor light; air; water; temperature; O² levels and feeding cycles.
- The operation will also have ablution facilities for staff to shower-in and shower-out as well as an office complex for management.

3.8 Construction

During the construction phase the following will occur:

- Levelling of the land where the chicken houses are to be built;
- Construction of the foundations and floor slab;
- Installation of the upright support structure for the roof structure;
- Building of the 1.5m high brick wall from foundation upwards;
- Installation of the roof structure and roof panels;;
- Installation of electricity and lights together with the feeder and watering system;

- Installing the facility computer system and automation components.

3.9 The Operational Phase

The operational phase will follow a basic pattern for each batch of day old chicks coming on site i.e.

- Disinfection of the entire chicken house;
- Placement of the bedding (saw dust shavings) on the floor;
- Placement of the watering points and feeding points within the entire chicken house;
- Arrival and off-loading of day-old chicks into the chicken house;
- Twice daily monitoring and checking of the chicks for any sign of illness or disease;
- Immediate removal of any mortalities from the chicken house;
- Continuous monitoring of temperatures and the opening or closing of vents to regulate airflow and temperature;
- Checking of watering points and the availability of water;
- Specific feeding cycles and sleeping cycles to maximise growth potential;
- Regular weighing of chickens at specific time schedules to ensure optimal growth is obtained;
- The removal of adult chickens to the abattoir for processing;
- Cleaning team coming on site to clean out the old bedding and bird droppings from the house;
- Disinfection of the entire chicken house with a dry foam spray; ***
- Placement of new bedding;
- Bringing in a new batch of day-old chickens for rearing.

*** **NOTE:** The chicken houses are no longer washed out with large volumes of water. The modern way is the use of a dry foam which is sprayed onto the floor; walls and ceiling and the resultant powder is merely swept up with the final chicken waste for onward disposal. No large volumes of sludge and water is being swept from the chicken houses.

From the start of day-old chicks introduction to adulthood takes around 35 – 38 days.

Cleaning, disinfection and making ready the new bedding takes around 3 days.

The entire cycle may be repeated at least 7 times in a single year.

3.9.1 Supply of animal feed

Supply of bulk animal feed is brought on site by bulk transport trucks that can carry up to a maximum of 20 000 kg. These trucks top-up the bulk silo holders on site from where the chickens are fed on a regular basis.

3.9.2 Supply of day old chicks

There are a number of suppliers of day old chicks in South Africa and rearing facilities make use of a number of these supplies at any given time so as to spread risk and ensure that they have chickens from a number of suppliers on site at any given time.

3.9.3 Removal of mortalities

The company will enter into an agreement with a specific company who removes mortalities on a regular basis for processing into animal feed.

Chicken houses are checked twice a day for sick or dead birds. Mortalities are immediately removed and kept refrigerated while waiting for removal by the end user. No dead animals are allowed to lie outside in the sun where they may attract flies and create smells.

3.9.4 Removal of old bedding and chicken manure

At the end of each rearing cycle the entire chicken house is cleared of all bedding and chicken manure. This “waste” is taken by trucks from the site to farms that utilise the manure mix as fertilizer or even as additional feed to goats. No chicken waste is allowed to be stockpiled or rot in the sun as this may cause a severe outbreak of flies.

3.9.5 Cleaning and Sanitising of chicken houses

At the end of each rearing cycle the entire chicken house is cleared of all bedding and chicken manure. While the waste is removed by truck to an end user the entire inside of the chicken houses is disinfected with a dry foam spray [ceiling; walls and floors] and all water lines and feeding points are disinfected and washed out. The dry foam and dust form part of the chicken waste that is removed from the site. **Large volumes of water spray down is no longer the practice** and as such whatever little water is used inside the house is allowed to dry naturally by evaporation and no large volumes of water is swept out of the houses any longer.

3.9.6 Flies and Fly Infestation Control

Flies develop in areas of wet chicken manure. For this reason, the houses are constantly ventilated to keep animal droppings dry.

Ensuring that watering points and pipes are not leaking goes a long way in keeping the houses dry on the inside.

A contact spray is sprayed on the outside of the chicken houses that kill flies on contact while a special additive to the chicken feed prevents larvae from developing in the chicken droppings. This type of fly control is ongoing and standard practice in the poultry industry.

3.9.7 Waste: Volumes; Handling; Threats & Smells

There are a number of waste streams being generated on a chicken farm at various times during the cycle of rearing.

The waste streams; volume; handling and threats are more broadly discussed in the document *Waste Stream Protocols*

3.9.8 Bio-Security Risks

Chicken farming is a “delicate” operation where small matters can easily become major catastrophes. For this reason, chicken farm operations are subject to extremely strict bio-security rules and regulations.

- **Human influences** – Humans are one of the primary concerns for a chicken farm operation as they are the carriers of pathogens from outside into the “sterile” internal operation of the farm. So in order to minimise any impacts from humans the following are standard operating procedures in terms of human influences:
 - The chicken houses are fenced in within a bio-security area where all access of humans is controlled. Only staff are allowed in.
 - All staff entering must follow a shower-in and clothing change regime and once leaving the secure area must shower-out and change into their “outside” clothing.
 - No food, drinks, clothing or articles from outside are allowed into the bio-security area.
 - All staff will operate with two sets of clothing and boots for safe entry into the actual broiler houses.
 - Any vehicle coming on-site is sprayed down and disinfected.

- **Outside factors** – factors such as stray animals; birds and other chickens are not allowed to enter; mingle with or come in contact with the flock within the bio-security area. In order to ensure this the following is put in place:
 - Total fencing of the area that will stop stray animals from coming into contact with the flock.
 - Wire mesh at all opening vents and air-flow areas to prevent any bird or outside chicken from coming into the broiler houses.
 - Plastic ribbon curtain at the entrance door to prevent unwanted birds from flying in.
 - Only inoculated day-old chicks from reputable providers are taken on for the rearing cycle.

As South Africa does not inoculate for Avian Influenza, and therefore any occurrence of the disease spells a major disaster. In cases where the Avian Influenza strikes the State Vet Services steps in and a strict protocol is followed whereby the entire flock is culled and the entire operation placed under quarantine for a set period of time. Everything is washed down and sanitised and final swab tests are done by the State Vet to determine if the facility is clear of the virus.

The unfortunate reality of Avian Influenza is that the pathogen/the bug is an airborne pathogen which travels with moving air, especially during the hot and dry months. Only one effective remedy for this pathogen is natural rain, as rain will clear the air of dust and the pathogen.

- **What are the risks of Avian Influenza occurring?**

The answer to the question is “how long is a piece of string”. If the pathogen is around and the conditions are perfect for it to spread then wind and dust will allow the pathogen to spread on natural airflow. For this reason, chicken farm operations check their flocks at least twice a day; inoculate on a regular basis; sanitise ongoing with each action taken; do not allow equipment from one house to be used in another house; enforce personal hygiene and shower regimes on all staff; remove mortalities from the bio-security area and examine mortalities to find reasons for deaths; ensure that all houses are secure and free of unwanted birds or other animals.

- **Call the State Vet when suspecting Avian Influenza**

Avian Influenza is not a sin to be hidden. At the first sign of possible Avian Influenza call the State Vet. Get every bit of assistance as you do not want to see it spreading to other chicken farms. **KILL THE BUG.** Follow the dictates of the State Vet and implement every aspect as directed by the State Vet. The sooner the operation is back online the sooner the business is back in line.

- **What are the risks to the surrounding area?**

The only risk from an infected operation is that the bug may spread to other chicken farm operations. **It does not hold any danger to humans unless the contaminated birds are consumed.** All contaminated birds must be destroyed. Normally the State Vet will advise that a large deep trench be prepared, lined with lime at the bottom and that each layer of dead birds be covered with lime as well. Such trenches must be monitored so that scavenger birds do not fly in and pick up any dead birds nor that they feed on these birds as they can spread the disease. Trenches must be filled in daily and compacted.

Economically the workforce from the surrounding community is at risk as some farming operations never recover from a serious incident and employment losses occur which impacts the social structure of the area.

Instilling a strict bio-security regime for the operation, maintaining the strict regime; updating and adjusting the regime as and when required is key to the success and ongoing performance of the chicken farm operation. Bio-security is certainly the main key to a safe and prosperous operation.

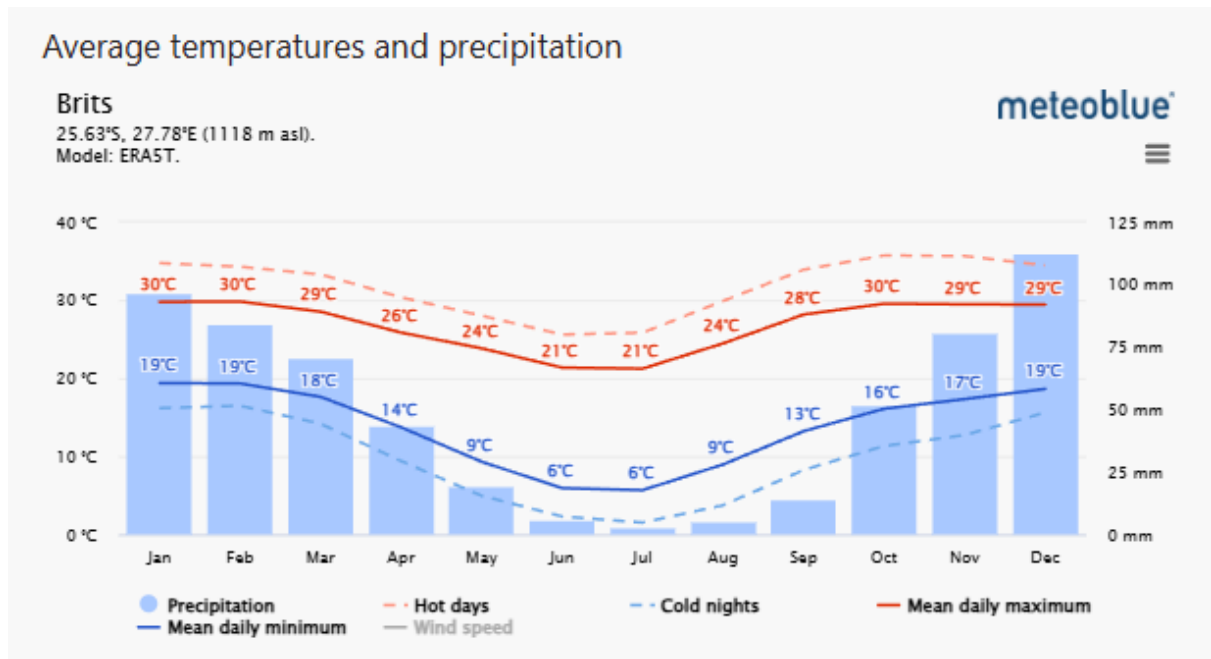
3.9.9 Use of access routes

The access roads to the farm are mostly tar roads servicing the area where the farm is situated. These roads are provincial roads and maintenance of these roads are the responsibility of the provincial government. There are no restrictions for the use of these roads and all vehicles may access and use these roads as long as they are road worthy and fully licensed.

4. Baseline Environmental Information

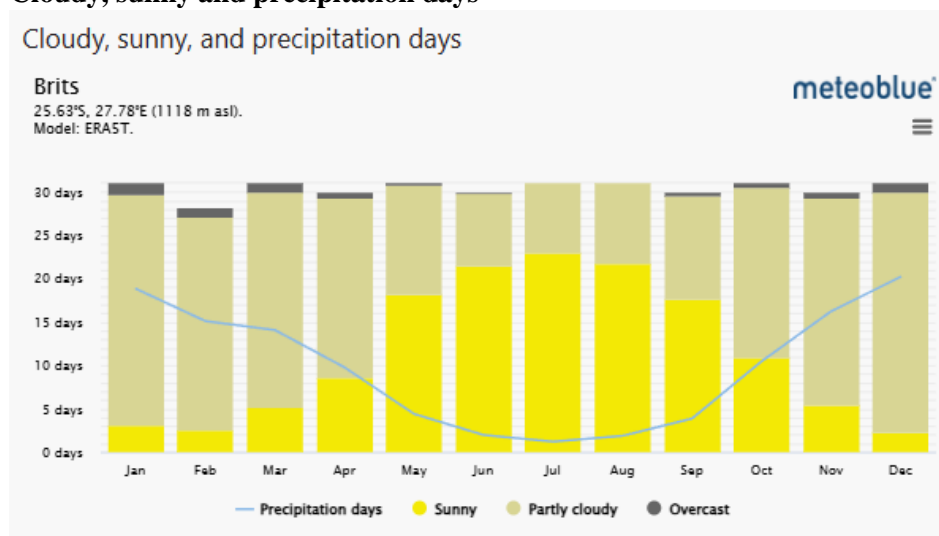
Baseline environmental information, often referred to as “baseline” is a foundational component of an Environmental Impact Assessment (EIA) and other possible studies. It refers to the comprehensive and systematic collection of data that characterises the existing state of the environment in and around a project area before the project’s activities or developments take place. This information is crucial because it serves as a reference point against which potential environmental changes impacts cause by the project can be evaluated and assessed.

4.1 Average temperatures and precipitation

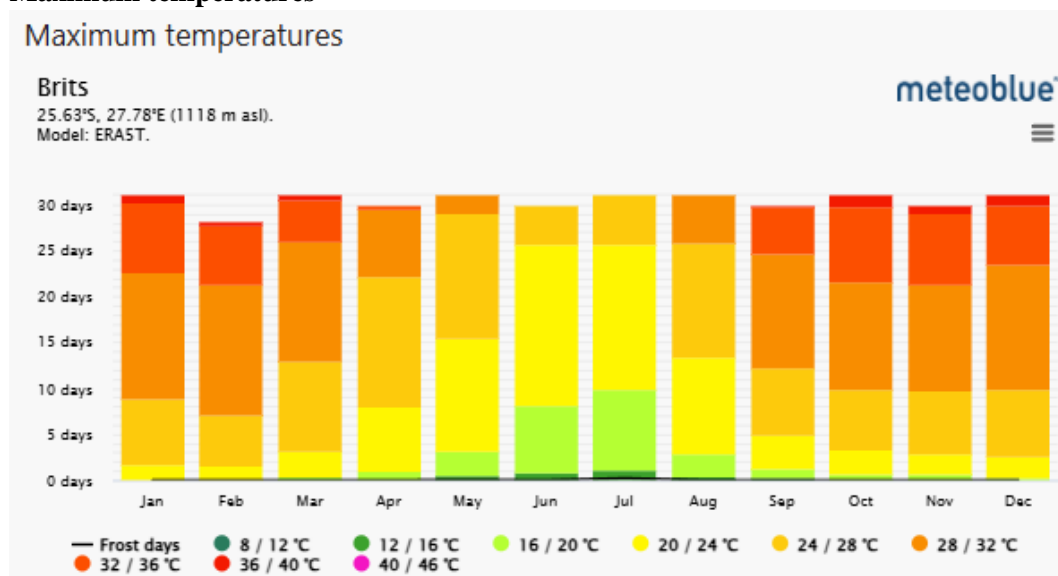


Source: meteoblue.com/historyclimate/climatemodelled/brits_south-africa

4.2 Cloudy, sunny and precipitation days

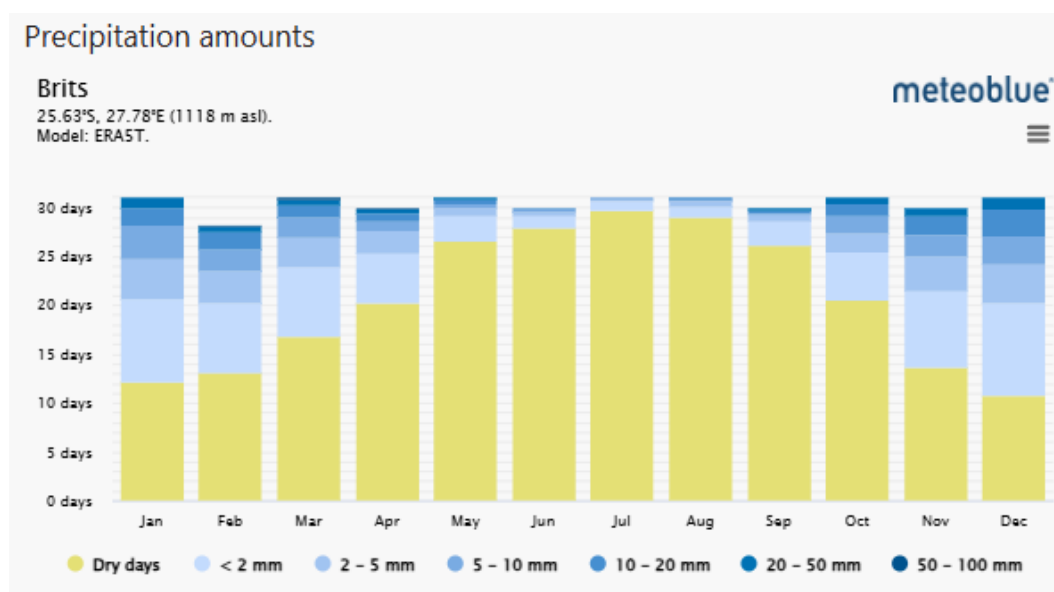


4.3 Maximum temperatures

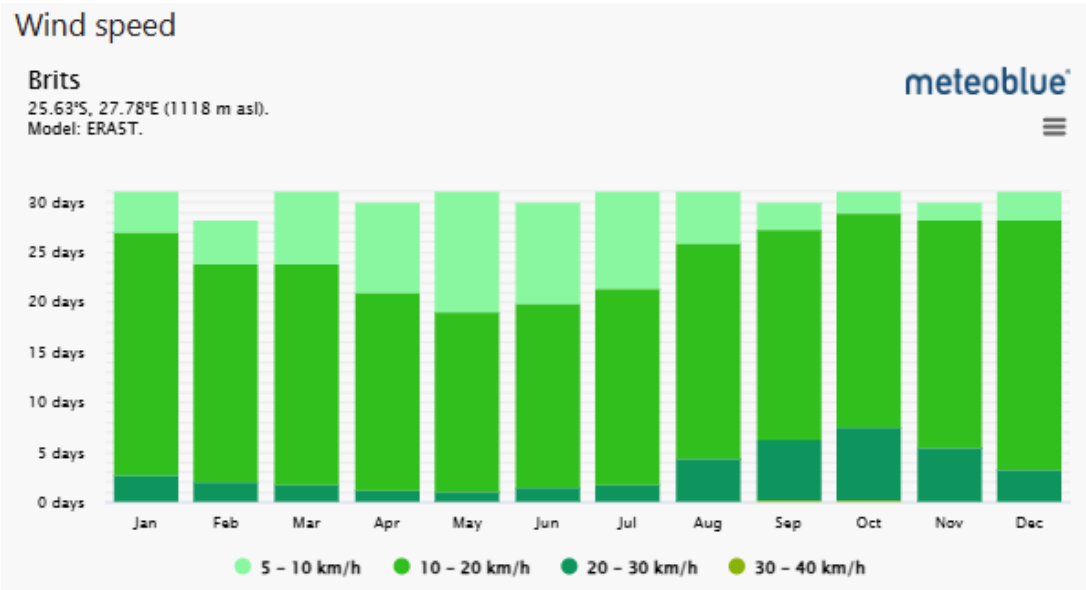


Coldest months will be March through September and will most likely be the months when the most additional heating from the slow combustion units will be required.

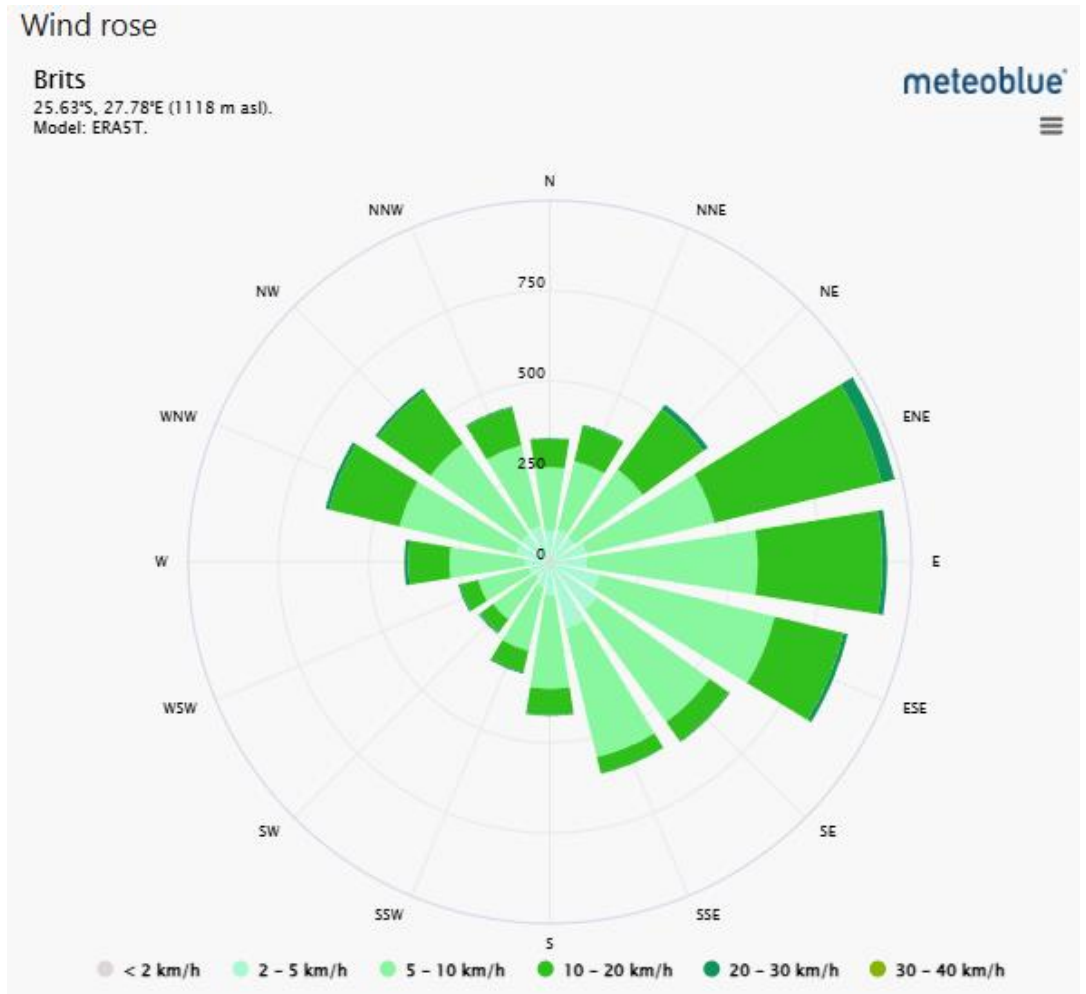
4.4 Precipitation amounts



4.5 Wind speed



4.6 Wind Rose



4.7 Animal feed calculations

The industry norm for calculation of animal feed for broiler production is 2.6 – 2.7Kg of feed per chicken per cycle.

At 297 500 chickens on site per cycle the animal feed use will be around 774 tons per cycle.

4.8 Water consumption calculations

The industry norm for calculation of water requirements for broiler chickens are:

Amount of feeding x 1.8 = litres of water per chicken

2.7 kg of feeding x 1.8 = 4.86 litres of water per chicken

297 500 chickens x 4.86 litres = 1 446 m³ of water per cycle

4.9 Animal Waste calculations

The industry norm for calculation of animal waste generated at a broiler house where wood shavings are used as bedding are:

1 Kg of waste per chicken per cycle

42 500 chickens per chicken house = 42 500 Kg of waste / 42.5 metric tons of waste per cycle

per chicken house = 297 tons per cycle / 7 houses

4.10 Ecosystems; habitats and sensitive resources

Within a three [3] kilometre radius of the farm and the intended development the following can be observed:

A- Natural area / undeveloped

B- R511 road

C- Varying sizes of agricultural activities

D- Other chicken farm operations

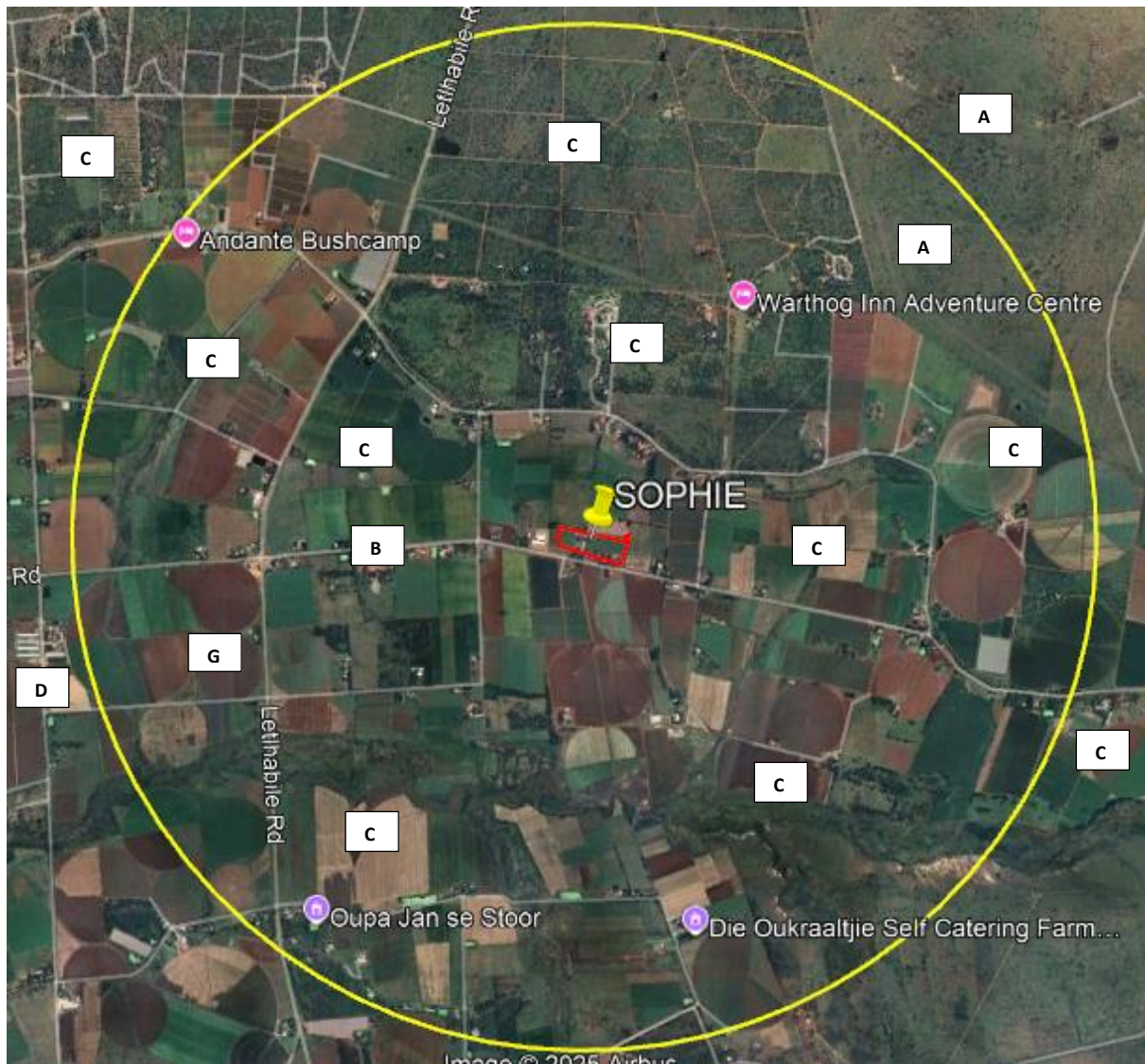


Photo 6: Other activities in a 3 km radius [YELLOW]

5. Environmental Impact Assessment Methodology

The environmental impact assessment forms the basis for the Environmental Impact Assessment Report [EIAR] as well as directs the structure of the Environmental Management Programme [EMPr] which will ensure that effective management measures are tabled. The process is aimed at either avoiding, successfully managing or mitigating identified impacts so that it does not lead to environmental degradation or contamination.

The significance of identified impacts is determined by using an accepted methodology from the Department of Environmental Affairs & Tourism Guideline document on EIA Regulations [April 1998]. As with all impact methodologies, the impact is defined in a semi-quantitative way and is assessed according to the methodology prescribed in the table below.

Table 1: Scale utilised for the evaluation of the Environmental Ratings

Evaluation Component	Rating	Scale	Description / criteria
MAGNITUDE of negative impact (at the indicated spatial scale)	10	Very high	Bio-physical and/or social functions and/or processes might be <i>severely</i> altered.
	8	High	Bio-physical and/or social functions and/or processes might be <i>considerably</i> altered.
	6	Medium	Bio-physical and/or social functions and/or processes might be <i>notably</i> altered.
	4	Low	Bio-physical and/or social functions and/or processes might be <i>slightly</i> altered.
	2	Very low	Bio-physical and/or social functions and/or processes might be <i>negligibly</i> altered.
	0	Zero	Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	10	Very high	Positive: Bio-physical and/or social functions and/or processes might be <i>substantially</i> enhanced.
	8	High	Positive: Bio-physical and/or social functions and/or processes might be <i>considerably</i> enhanced.
	6	Medium	Positive: Bio-physical and/or social functions and/or processes might be <i>notably</i> enhanced.
	4	Low	Positive: Bio-physical and/or social functions and/or processes might be <i>slightly</i> enhanced.
	2	Very low	Positive: Bio-physical and/or social functions and/or processes might be <i>negligibly</i> enhanced.
	0	Zero	Positive: Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
DURATION	5	Permanent	Impact in perpetuity. –
	4	Long term	Impact ceases after operational phase/life of the activity > 60 years.
	3	Medium term	Impact might occur during the operational phase/life of the activity – 60 years.
	2	Short term	Impact might occur during the construction phase - < 3 years.
	1	Immediate	Instant impact.
EXTENT (or spatial scale/influence of impact)	5	International	Beyond the National boundaries.
	4	National	Beyond provincial boundaries, but within National boundaries.
	3	Regional	Beyond 5 km of the proposed area and within the provincial boundaries.
	2	Local	Within a 5 km radius of the proposed area.
	1	Site-specific	On site or within 100 meters of the site boundaries.
	0	None	Zero extent.
IRREPLACEABLE loss of resources	5	Definite	Definite loss of irreplaceable resources.
	4	High potential	High potential for loss of irreplaceable resources.
	3	Moderate potential	Moderate potential for loss of irreplaceable resources.
	2	Low potential	Low potential for loss of irreplaceable resources.
	1	Very low potential	Very low potential for loss of irreplaceable resources.
REVERSIBILITY of impact	0	None	Zero potential.
	5	Irreversible	Impact cannot be reversed.
	4	Low irreversibility	Low potential that impact might be reversed.
	3	Moderate reversibility	Moderate potential that impact might be reversed.

	2	High reversibility	High potential that impact might be reversed.
	1	Reversible	Impact will be reversible.
	0	No impact	No impact.
PROBABILITY (of occurrence)	5	Definite	>95% chance of the potential impact occurring.
	4	High probability	75% - 95% chance of the potential impact occurring.
	3	Medium probability	25% - 75% chance of the potential impact occurring.
	2	Low probability	5% - 25% chance of the potential impact occurring.
	1	Improbable	<5% chance of the potential impact occurring.
	0	No probability	Zero probability.
Evaluation Component	Rating scale and description / criteria		
CUMULATIVE impacts	<p>High: The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Medium: The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Low: The activity is localised and might have a negligible cumulative impact.</p> <p>None: No cumulative impact on the environment.</p>		

Once the Environmental Risk Ratings have been evaluated for each potential environmental impact, the Significance Score of each potential environmental impact is calculated by using the following formula:

SS (Significance Score) = (magnitude + duration + extent + irreplaceable + reversibility) x probability.

The maximum Significance Score value is 150.

The Significance Score is then used to rate the Environmental Significance of each potential environmental impact as per Table 2 below. The Environmental Significance rating process is completed for all identified potential environmental impacts both before and after the implementation of the recommended mitigation measures.

Table 2: Significance Score utilised for the evaluation of the Environmental Risks Rating

Significance Score	Environmental Significance	Description / criteria
125 – 150	Very high (VH)	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	High (H)	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.
75 – 99	Medium-high (MH)	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be relooked at.
40 – 74	Medium (M)	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.
<40	Low (L)	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.

+	Positive impact (+)	A positive impact is likely to result in a positive consequence/effect and is likely to contribute to positive decisions about whether or not to proceed with the project.
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In order to ensure that assessments are correctly calculated [assessed] an interactive XL Spreadsheet is utilised and the final scores coded in colour.

Table 3: The interactive spreadsheet

PHASE	POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE							CUMULATIVE	STATUS	RECOMMENDED MITIGATION MEASURES / REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER								
			M	D	S	I	R	P	TOTAL				SS	M	D	S	I	R	P	TOTAL	SS
TOPOGRAPHY																					
									0											0	0
									0	0										0	0

M = Magnitude D = DURATION S = SEVERITY / EXTENT I = IRREPLACEABLE

R = REVERSIBILITY P = PROBABILITY

Table 4: Colour Codes for the final ratings

VH	H	MH	M	L
125-150	100-124	75-99	40-74	<40
L = LOW	M = MEDIUM	MH = MEDIUM HIGH	H = HIGH	VH = VERY HIGH

6. Identification of Potential Environmental Impacts and their Mitigation

It is essential to separate the two types of impacts that may occur i.e. **POSITIVES** and **NEGATIVE**. When assessing the current operation as well as the intended additional phase of the operation, then the following impacts are applicable:

NEGATIVES

6.1 Dust

The creation of dust can be an irritant not only to the farm but also to properties adjacent to the operation as well as those alongside the road, especially when the access road is a gravel road. Large vehicles travelling at speed can create a fair amount of dust which can settle on crops; animals or even on humans.

The rating for **DUST** is calculated at **90 / MEDIUM HIGH NEGATIVE** impact.

Mitigation: Restricting the speed of trucks and other vehicles can assist in reducing the dust being created. Additional signage indicating a reduced speed can assist. Insisting on the use of tarred roads rather than gravel roads, when available, will go a long way in reducing the dust being created. The majority of the access road i.e. Langstraat is tar and as such only a small distance on the farm itself is in fact dirt road. The rating for **DUST** after mitigation is calculated at **42 / MEDIUM NEGATIVE** impact.

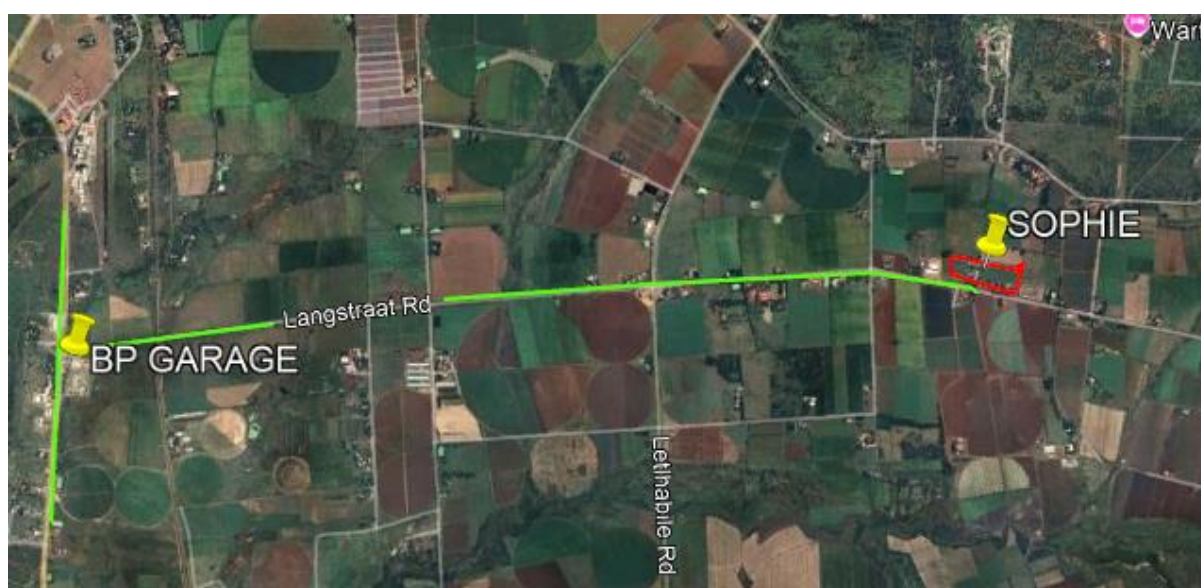


Photo 7: The main feeder route [Langstraat] for trucks to come to the farm [GREEN]

6.2 Noise

The expected noise coming from the operation will be during either delivery or removal of stock from the farm by trucks. Such noise permeates the area, especially those living close to the access roads in the area.

The rating for **NOISE** is calculated at **45 / MEDIUM NEGATIVE** impact.

Mitigation: Restricting speed and times of delivery / uplifting of stock will restrict the times of actual noise generation. Consolidating deliveries into single vehicles rather than a multitude of vehicles will go a far way reducing the occurrence of noise.

The rating for **NOISE** after mitigation is calculated at **36 / LOW NEGATIVE** impact.

6.3 Smells and odours

Smells and odours coming from a chicken farm operation can be very unpleasant and a major irritant to people. Smells and odours come from chicken manure and it is therefore essential to ensure that the chicken houses remain dry and well ventilated.

The rating for **SMELLS & ODOURS** is calculated at **64 / MEDIUM HIGH NEGATIVE** impact.

Mitigation: Ensure that there are no water leaks in the chicken houses; Ensure that the sides of the houses are opened to allow ventilation and drying of the droppings to occur. Ensure that all old manure and bedding removed from the chicken houses at the end of a rearing cycle, are taken off site as fertiliser immediately upon removal. That no chicken manure is left in a stock pile open to the elements where rain and breeding flies can get to it.

The rating for **SMELLS & ODOURS** after mitigation is calculated at **36 / LOW NEGATIVE** impact.

6.4 Flies

Flies and the breeding of vast numbers of flies can easily occur on a chicken farm when a number of aspects are allowed to deteriorate i.e. water leaking onto the bedding and causing the bedding to become a wet slurry; urine and droppings to form a favourable breeding ground for flies; stockpiles of manure being left outside open to rain and wind; mortalities allowed to decay in the sun.

The rating for **FLIES** is calculated at **54 / MEDIUM NEGATIVE** impact.

Mitigation: Ensure good ventilation through the chicken houses. Do not allow waste heaps / stock piling of manure to occur in the open where rain and flies can get to it. Ensure that the farming practice has a popper fly control programme in place and that regular spraying of the required pesticides takes place.

The rating for **FLIES** after mitigation is calculated at **24 / LOW NEGATIVE** impact.

6.5 Coal

Bulk coal will be delivered on site for the slow combustion heating system at each of the chicken houses. Such coal must be stored in a coal bunker which has a **cement floor**; is **sloped** to ensure that no water is retained in the bunker and also be provided with a **roof** to stop the ingress of rain water. No stockpiling is allowed on the bare open ground. Ash from the slow combustion units must be stored in an enclosed bunker awaiting removal to a registered landfill.



Example: *Coal deposits in a coal bunker*

The rating for **COAL** is calculated as **135 / HIGH NEGATIVE** impact.

Mitigation: The bulk coal for the farm must be stored in a bunker area which is either covered by a roof to prevent the ingress of water i.e. rain or else the bunker must be covered with a solid tarpaulin sheet to prevent water from entering. Where there is no coal bunker a bunker must be built and be provided with a cement floor with a slope to prevent water from accumulating in the bunker. Where coal has been dumped on the bare soil, such polluted soil must be removed and deposited at an accredited landfill site.

The rating for **COAL** after mitigation is calculated at **24 / LOW NEGATIVE** impact.

6.6 Bottom Ash

Bottom ash, as waste, cannot be dumped in the open where wind and water may disperse such waste. Bottom ash must be containerised and disposed of at an accredited landfill site or used as a road surface infill if so authorised. If bottom ash is taken by a third party then records must be kept of who takes the ash; volumes taken; address where the ash is going to and final use of the ash.

The rating for **BOTTOM ASH** is calculated as **72 / HIGH NEGATIVE** impact.

Mitigation: The bottom ash must be contained and either disposed of at an accredited landfill or used as a road infill once authorised to do so by the authorities. Bottom ash may not be discarded into the open for wind and water to disperse.

The rating for **BOTTOM ASH** after mitigation is calculated at **8 / LOW NEGATIVE** impact.

6.7 Road surface damage

Road surfaces, especially gravel roads in the rural areas, are heavily impacted by large heavy vehicles. The same can be said for tarred roads although the impact is less. However, where potholes exist heavy vehicles will cause more damage more easily. As regular maintenance of roads in South Africa is problematic the issue of continuous deterioration is problematic.

The rating for **ROAD DAMAGE** is calculated at **54 / MEDIUM NEGATIVE** impact.

Mitigation: By instructing delivery vehicles to follow a specific route i.e. tar roads, the impact on gravel roads in the area will be greatly reduced. The implementing speed restrictions with the appropriate signage the damage to both gravel and tar roads will be reduced. By consolidating deliveries into one larger vehicle the number of trips to and from the farm will be reduced while also saving on operational costs. By determining proper forward planning in ordering bulk feed supplies, the number of trips to the farm will be greatly reduced.

The rating for **ROAD DAMAGE** after mitigation is calculated at **28 / LOW NEGATIVE** impact.

6.8 Animal Health

The health of the birds are of prime importance. Utilising inoculated chicks eliminates the chances of diseases developing in the chicken house. The threat to the chickens come from outside chickens and other birds finding their way into the chicken houses. South Africa at present does not inoculate for Avian Bird Flu. This is however being addressed by State Veterinary Health and we may soon see the practice of inoculation against Avian Bird Flu also taking place in South Africa. The correct bio-security regime for the farm will also help in keeping the birds healthy and protect the business.

The rating for **ANIMAL HEALTH** is calculated at **48 / MEDIUM-NEGATIVE** impact.

Mitigation: Strict bio-security regimes to be implemented from foot baths to staff showering in and out of the operation. No cross using of equipment between the different houses at any time. Staff must work chicken house specific in order to avoid any cross contamination. Regular checks to ensure that the wire mesh protecting the chicken houses have not been breached and thus allow other birds from outside coming inside. Daily checking of the fence perimeter of the houses will ensure immediate detection of any possible problem areas.

The rating for **ANIMAL HEALTH** after mitigation is calculated at **10 / LOW-NEGATIVE** impact.

6.9 Water

The abstraction of water other than for a usage "1" i.e. household and animal watering is protected by Section 21 of NWA. Although the current usage is "USE 1" excessive usage caused by indiscriminate spillage; leaks and wasteful use can impact the underground reserve in a negative way.

Borehole supply will provide the required water for the chicken farm operation. Water requirements, once all eight the houses are operational, will be 1 445m³ per cycle or 41.29 m³ per 24 hour / 35 days cycle

The rating for **WATER** is calculated at **54 / MEDIUM NEGATIVE** impact.

Mitigation: The use of water must at all times be controlled to ensure a dry environment within the chicken houses. Daily checks for water leaks or faulty watering points will eliminate wet area from occurring and wastage of water. Controlling the flow of water will ensure that no pipes are over-pressurised and cause bursting and subsequent wastage. Indiscriminate use of water and wastage may not be allowed. Monitoring of borehole levels and checking recharge rates will ensure that over abstraction does not take place.

The rating for **WATER** after mitigation is calculated at **12 / LOW NEGATIVE**.

6.10 Employment

Employment opportunities in South Africa is in short supply, especially in the rural areas of the country. The operation will be staffed by taking from the local employment pool rather than “importing” staff from other areas.

The rating for **EMPLOYMENT** is calculated at **36 / LOW POSITIVE**.

Mitigation: The chicken houses will require staff. It is important to try and protect the employment opportunities for local residents of the area rather than bringing in people from outside of the area.

The rating for **EMPLOYMENT** after mitigation is calculated at **33 / LOW POSITIVE**

6.11 Food & Food Security

Food security for South Africa is a very important aspect and is high on the list of targets by Government. As it is the country imports vast amounts for chicken from South Africa and with the ever increasing value of the US Dollar against the SA Rand the prices are continuously escalating.

The rating for **FOOD** is calculated at **54 / LOW POSITIVE**.

Mitigation: Food security is of prime importance and the additional capacity on the farm will make proper inroads into food security. It will introduce large quantities of additional fresh chicken meat to the market and thus decrease the need for costly imports.

The rating for **FOOD** after mitigation is **34 / LOW POSITIVE**

6.12 Unwanted elements in the area

Any development will bring an influx of job seekers and the farm is bound to get walk-in job seekers coming onto the property to try and get employment. With that comes some concern for safety and security in the area.

The rating for **UNWANTED ELEMENTS** is calculated at **26 / LOW NEGATIVE**

It is the intention of the farm to employ only local labour and train only local labour all of whom will form part of the existing workforce of the farm. The development will require minimal additional employment opportunities.

The rating for **UNWANTED ELEMENTS** after mitigation is **10 / LOW NEGATIVE**

6.13 Chicken Waste

Chicken waste is the main reason for flies being present around the operation. Wet chicken manure is the perfect breeding ground for flies and as such the area should be kept clear of such waste.

The rating for **CHICKEN WASTE** is calculated at **72 / MEDIUM NEGATIVE**

Correct ventilation; regular ventilation; no leaking water pipes in the houses and control of humidity all assist in minimising the effect of breeding grounds for flies. Dried waste also does

not cause odours and smells to permeate the surrounding area. No waste dumps and prompt removal of waste from the site will ensure a clean environment.

The rating for CHICKEN WASTE after mitigation is **24 / LOW NEGATIVE**

6.14 Removal/transportation of chicken waste

All waste from the farm operation is taken off-site and used as fertiliser on agricultural lands by other farmers. Removal is done by truck and such trucks may disperse some of the waste into the receiving environment due to speed and wind flow over the truck.

The rating for CHICKEN WASTE REMOVAL is calculated at **48 / MEDIUM NEGATIVE**

All trucks must be enclosed or covered with a tarpaulin to ensure that wind does not disperse the waste. Totally enclosed trucks will ensure that the waste is kept secure inside.

The rating for REMOVAL OF CHICKEN WASTE after mitigation is **10 / LOW NEGATIVE**

6.15 Cumulative IMPACTS

Table 5: There were **12 POSSIBLE NEGATIVE** Impacts identified, rating it cumulatively as follows:

	Very High	High	Medium High	Medium	Low
Score	1375 – 1650	1100 – 1364	825 - 1089	440 - 814	<440
Before MIT				618	
After MIT					246

Conclusion: The possible NEGATIVE IMPACTS can be mitigated to an impact rating of LOW.

Table 6: There were **2 POSSIBLE POSITIVE** Impacts identified, rating it cumulatively as follows:

	Very High	High	Medium High	Medium	Low
Score	1375 – 1650	1100 – 1364	825 - 1089	440 - 814	<440
Before MIT					90
After MIT					87

Conclusion: The possible POSITIVE IMPACTS has a final rating of LOW.

6.16 Environmental Attributes

The environmental attributes associated with the alternatives focussing on the geographical; physical; biological; social; economic; heritage and cultural aspects are as follows:

Geographical: The development will be on an area where the development will not impact current planting regimes of the farm.

Physical: The entire operation is in close proximity of one another, with only one gate, via a single access road for all deliveries and removals.

Biological: Having the entire operation together in a single area will make use of specific bio-security regulations which are easy to enforce.

Social: As long as the business remains healthy and the operations have no infections / diseases, will the business thrive, employment opportunities will continue and salaries paid.

Economic: The South African Government is set on seeing the country being self-sufficient. As long as the business is kept healthy those goals can be achieved.

Heritage & Cultural: Not Applicable

Overall Viewpoint: The placement of the houses in an area where it will not impact current production of the farm will go a long way in producing a better and higher yield for the farm overall. Replacing a farming practice where seasonal crops, dependant on rain and the correct temperature, for another type of high yield farming practice can go a long way in getting a better return on investment.

7. The Public Participation Process

The PPP process, is a crucial aspect of an Environmental Impact Assessment (EIA). The EIA is a systematic process that evaluates the potential environmental impacts of a proposed project or development. Public Participation in this process is important for several reasons:

- **Transparency & Accountability:**
Involving the public in the EIA process ensures transparency and accountability. It allows the affected communities and stakeholders to understand the project's potential impacts and the steps taken to mitigate them.
- **Informed Decision-Making:**
Public participation provides an opportunity for people to voice their concerns, opinions and suggestions. This input can help decision-makers consider a wider range of perspectives and make more informed choices regarding the project.
- **Community Empowerment:**
Engaging the public empowers local communities and stakeholders. It gives them a sense of ownership and control over the development that might affect their environment and well-being.
- **Identification of Issues:**
The public often has intimate knowledge of the local environment and its specific issues. They can identify environmental and social aspects that may not be apparent to the project proponents. This can lead to a more comprehensive assessment.
- **Conflict Resolution:**
Public participation can help identify and address conflicts early in the process. By addressing concerns and grievances in the planning phase, it can prevent costly disputes and legal challenges later on.
- **Improved Project Design:**
Input from the public can lead to project modifications and design improvements that minimise negative environmental impacts. It can also lead to projects that better align with the needs and aspirations of the community.
- **Legal Requirements:**
In many jurisdictions, public participation in the EIA process is a legal requirement. Failure to engage the public adequately can result in legal challenges and project delays.
- **Enhanced Public Awareness:**
The PPP process can help educate the public about the project and its potential impacts. This increased awareness can foster responsible environmental stewardship and support for sustainable development.

In summary, the PPP Process during an EIA is crucial for ensuring that proposed projects are evaluated comprehensively, that concerns, insights and stakeholder inputs are considered, and that the decision-making process is fair and accountable. It ultimately contributes to more sustainable and responsible development.

7.1 What was undertaken in support of the PPP requirements?

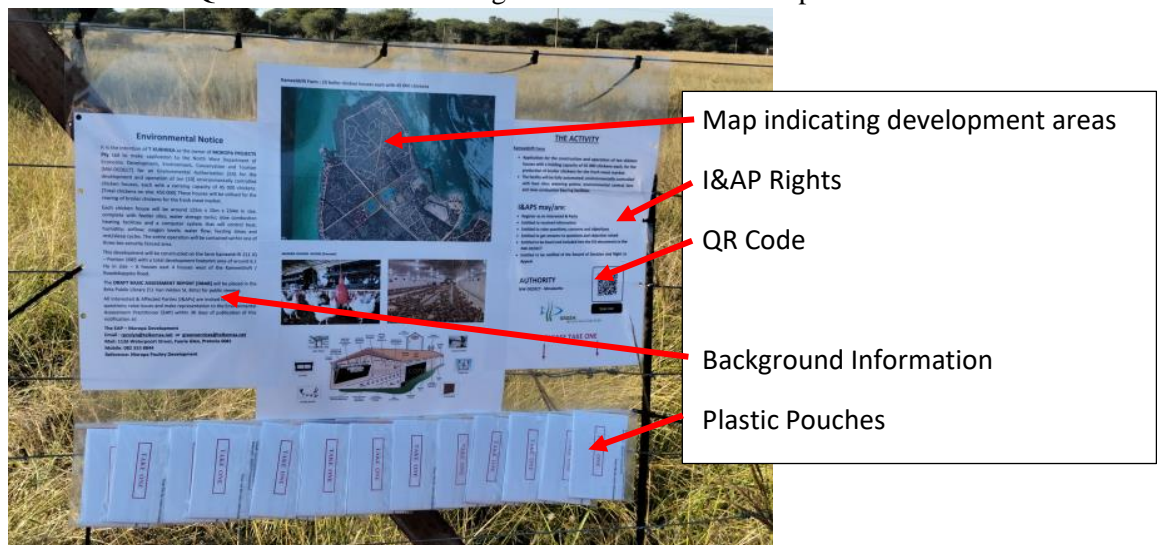
7.1.1 Advertisements in the newspaper

Advertisement in BRITS POS and CITIZEN

7.1.2 Site Notice

A Site Notice was placed on the fence line of the farm displaying:-

- the full description of the intended activity;
- a colour picture of the farm and the intended area of development;
- The rights of I&APs;
- Name of the consultant;
- QR Code for easy download of information;
- Individual plastic pouches attached, each containing:
 - Background information
 - I&AP Registration Form
 - Contact details of the EAP
 - QR Code for downloading information to a mobile phone



A Site Notice on a Farm Fence line

7.1.3 Background Information & I&AP Registration Forms

These forms were attached to adjacent properties in the area to try and entice potential I&APs to register and raise questions and make inputs.

7.1.4 Draft document - Availability

The Draft Basic Assessment Report is forwarded to the local library in Brits where potential I&APs can view the document and then pose questions to the EAP. It is also made available on the website www.greenenviroSA.com for ease of access and download.

7.1.5 Notifications to the Municipality and others

Written correspondence was forwarded to:

The Local Municipality;
The Speaker of the house;
SAHRA

7.1.6 I&AP Register

At the time of this DBAR Report a few I&AP registrations were received and will be handled as part of the overall FINAL BAR Report to the NW-DEDECT.

7.1.7 Issues & Response Report [I&R Report]

The required I&R Report will be prepared for the FINAL BAR Report.

7.1.8 Release of additional information

There is no additional information available at this stage of the application.

8. Environmental Screening Results

The DEA Screening Tool provided the following results:

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme	X			
Animal Species Theme			X	
Aquatic Biodiversity Theme				X
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defence Theme				X
Paleontology Theme			X	
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

Source: DEA Screening Tool Results

8.1 EAP Assessment and Motivation

8.1.1 Agricultural Theme [VERY HIGH]



The sensitivity score for the area to be utilised is **VERY HIGH**. The current activity on site is that of some agricultural activities and the additional development will increase the productivity of the land to a higher level.

Assessment: The activity supports the Screening Tool findings and is in support of the actual Screening Rating.

8.1.2 Animal Species [MEDIUM]

According to the Screening Tool Report, the intended areas for development has mostly a rating of **MEDIUM** being indicated. The land to be used has been transformed.

STATEMENT: No additional studies are required in terms of **ANIMAL SPECIES** as the overall rating is **MEDIUM** on totally transformed land.

The Screening Tool Report lists the following species as MEDIUM [Possible to be found on site]

Mammalia – Chrysospalax villosus [Rough-haired golden mole]



Mammalia – Crodicura maquaddirnsis [Makwassie musk shrew]



Mammalia – Dasymys robertsii [Roberts Shaggy Rat]



8.1.3 Aquatic Biodiversity Theme [LOW]



Aquatic Biodiversity rating for the development area is rated as LOW. There are no major water bodies or rivers in close proximity.

STATEMENT: In terms of Aquatic Biodiversity the intended development and its potential impacts must be addressed. The EMPr must specifically take into account waste; waste handling; effluent; effluent discharge and other possible pollution sources coming from the chicken farm operation.

8.1.4 Archaeological and Cultural Heritage Theme



Archaeological and Cultural Heritage Theme rating for the area of development is indicted as LOW.

The farm has no ruins or any indication of former habitation apart from the current structures. The area has been majorly transformed through agriculture.

There is no need for any further investigation or studies in terms of this theme.

8.1.5 Civil Aviation Theme



The rating for Civil Aviation is given as **HIGH**.

According to the Screening Tool Report the farm has an aerodrome within 8km from the farm. The development will not be excessively high – standard roof pitch and height – and as such will not interfere with any flight path or approach path of air traffic in the area.

STATEMENT: No further studies in terms of this theme is required.

8.1.6 Defence Theme



The Defence theme is given as **LOW**.

The farm does not form part of any border of SA nor any neighbouring country. It has no importance in terms of security or strategic defence position.

STATEMENT: No further study is required in terms of this theme.

8.1.7 Palaeontology Theme [MEDIUM]



The Paleontology Theme is given as **MEDIUM**.

No fossils have been uncovered during previous agricultural activities. Should fossils be uncovered then the authorities will be notified; construction will be suspended and construction will only commence once the authorities have given the go-ahead to proceed.

STATEMENT: No further studies are required in terms of this theme.

8.1.8 Plant Species Theme [LOW]



The sensitivity in terms of Plant Species is given as **LOW**. The area for development has been totally transformed.

STATEMENT: Due to the LOW sensitivity rating in terms of plant species no further studies are required.

8.1.9 Terrestrial Biodiversity Theme



The Terrestrial Biodiversity theme is given as **VERY HIGH** – *EN_Marikana Thornveld*. However, the two portions of land to be used for the development has been totally transformed through agricultural activities, and as such there is no need for conservation.

STATEMENT: The EMPr for the intended operation will consider; address and mitigate all identified impacts to an acceptable level even though the land has been transformed.

8.2 Storm Water and Management of Storm Water

The area is very flat and even.

When taking height readings across the farm and adjacent land, the indications are that water will flow mostly south from the property towards the storm water drainage situated at the southern edge of the property.



Photo 8: The slope / run-off of the area [Readings in mamsl]

All chicken houses will have, as a standard feature, slightly raised concrete floors and a concrete apron all around the actual building. This will assist in allowing water to flow away from the houses into the adjacent lands and drainage directions of the overall topography. Recent major flood events in the area [December 2024 and January 2025] showed that the area does not become water logged. The design of the buildings and the floor slab will take into account water and water issues which may arise.

9. Conclusions and Recommendations

9.1 Summary

The identified impacts, both Negative and Positive have an overall rating score of LOW. The ratings clearly indicate that there are impacts but when weighed up against issues such as employment opportunities; food security; serving the greater South African economy by providing local produce then the LOW impact rating becomes insignificant.

One aspect do however stand out and that is the issue of **bulk coal storage** and **bottom ash** handling. Without fail the chicken farms in South Africa seem to disregard the importance of bunker coal space and the need of getting the coal on a concrete floor and have no water ingress. The application lends itself to the correct license conditions being included, one of which must be the handling of coal; the handling of bottom ash and the correct storage facilities of coal.

Food and food security is a major goal for the South African Government. The prime objective of effective farming and producing the best possible yield per hectare of farmland is food to the nation.

The proposed development of seven [7] environmentally controlled chicken houses, each with a carrying capacity of 42 500 chickens is supported on this agricultural land as it would greatly increase the potential of the overall farming activity.

9.2 Conclusions & Recommendations

This portion of land is not being optimally utilised.

The EMPr [to be finalised] should be made applicable to the entire operation i.e. existing farm and new development. This will ensure uniformity and a better control on aspects requiring monitoring and compliance.

It is recommended that the Environmental Authorisation be provided for the maximum period allowed with the starting date being Date-of-EA.

10. Environmental Management Programme (EMPr)

The required EMPr for the existing operation inclusive of the proposed development is being developed and will be enclosed as a separate document within the annexures of the Final BAR Report to the NW-DEDECT.

11. References

The following are documents relevant to FBAR:

- Dep. Environmental Affairs and Tourism Guideline Document on EIA Regulations, April 1998 [Impact Methodology]
- KwaZulu –Natal Department of Health [<http://www.kznhealth.gov.za>] Avian influenza [bird flu] fact sheet
- Web: mdpi.com/2076-0817/12/4/610 – Avian Influenza: Strategies to Manage an Outbreak

Signed this _____ day of _____ 2025 at Pretoria, Gauteng Province

RP Colyn – EAP/EAPASA 2019/1358

ANNEXURES