DRAFT

BAR AND EMPr REPORT

in support of application of CHICKEN HOUSE FACILITY AND ASSOCIATED INFRASTRUCTURE for a ENVIRONMENTAL AUTHORISATION

ACTIVITY: CONSTRUCTION OF 12 NEW CHICKEN BROILER HOUSES FACILITY AND ASSOCIATED INFRASTRUCTURE

APPLICANT: Nyala Farm CC

APPLICABLE SECTION:

PORTION	FARM	HECTARES
Remaining extend of Portion 13	Wagenbeetjies Draai 875 FT	Site 8 ha
DISTRICT		
Pietermaritzburg: Mgungundlovo District uMshwathi Local Municipality		

FILE REFERENCE NUMBER: KZN/EIA/0001586 /2021

NOTE: BAR & EMPr in this document have been COMPILED ACCORDANCE WITH:

Government Notices:

R. 982 National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014,(Amendments 7 April 2017)

With specific reference to:

Appendix 1 of Regulation R 982

3) Scope of assessment and content of basic assessment reports (BAR)

Appendix 4,1 of Regulation R 982

Content of environmental management programme (EMPr)

PART A

Content of Basic Assessment Report

(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: (I) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; (vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives; (vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (viii) the possible mitigation measures that could be applied and level of residual risk; (ix) the outcome of the site selection matrix; (x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	20 22 23 27-35 35 38 40 60 68 68
(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including- (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	68
(j)an assessment of each identified potentially significant impact and risk, including— (i)cumulative impacts; (ii)the nature, significance and consequences of the impact and risk; (iii)the extent and duration of the impact and risk; (iv)the probability of the impact and risk occurring; (v)the degree to which the impact and risk can be reversed; (vi)the degree to which the impact and risk may cause irreplaceable loss of resources; and	72

(vii)the degree to which the impact and risk can be mitigated;	
(k)where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;	76
(l)an environmental impact statement which contains— (i)a summary of the key findings of the environmental impact assessment: (ii)a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred development footprint on the approved site as contemplated in the accepted scoping report indicating any areas that should be avoided, including buffers; and (iii)a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	77 77 80
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;(PART B)	82
(n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	82
((o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed; authorisation;	82
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	82
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	83
(r)an undertaking under oath or affirmation by the EAP in relation to— (i)the correctness of the information provided in the reports; (ii)the inclusion of comments and inputs from stakeholders and I&APs; (iii)the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv)any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	83
(s)where applicable, details of any financial provision for the rehabilitation, closure, and on-going post decommissioning management of negative environmental impacts;	84

(t)any specific information that may be required by the competent authority; and (u) any other matters required in terms of section 24,10(4,10)(a) and (b) of the Act.	84 84

APPENDIX:

Map 1A - GENERAL LOCATION OF THE PROPOSED CHICKEN BROILER FACILITY **MAP 1B - Infrastructure/Layout Map** **MAP 2A - Environmental features MAP. Provide a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers)**	**1**
See proof of consultation : **Summary of the issues raised by interested and affected parties, letters, correspondence, minutes, COMMENTS & RESPONSE REPORT etc.** **CORRESPONDANCE RECEIVED FORM STATE DEPARTMENTS , LOCAL AUTHORITIES , ETC.**	**2**
Site photo sheet	**3**
Confirmation of Crocodile farm	**4**
The GCS Report (Ref. 21-0096) 14 Apr 2021 compiled by Magnus van Rooyen	**5**
Confirmation of litter removal	**6**
Fly control plan	**7**

PART B

Content of environmental management programme (EMPr)

	PAGE
1.(1) An EMPr must comply with section 24,10N of the Act and include— (a)details of– (i)the EAP who prepared the EMPr; and (ii)the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	85
(b)a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	85
(c)a map/plan at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	87
(d)a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including— (i)planning and design; (ii)pre-construction activities; (iii)construction activities; (iv)rehabilitation of the environment after construction and where applicable post closure; and (v)where relevant, operation activities;	87
(f)a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to — (i)avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii)comply with any prescribed environmental management standards or practices;	110

(iii)comply with any applicable provisions of the Act regarding closure, where applicable; and **(iv)comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;**	
(g)the method of monitoring the implementation of the impact management actions contemplated in paragraph (f); **(h)the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);** **(i)an indication of the persons who will be responsible for the implementation of the impact management actions;** **(j)the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;** **(k)the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);**	**113**
(l)a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	**114**
(m)an environmental awareness plan describing the manner in which— **(i)the applicant intends to inform his or her employees of any environmental risk which may result from their work; and** **(ii)risks must be dealt with in order to avoid pollution or the degradation of the environment; and** **(n)any specific information that may be required by the competent authority.** **(2) Where a government notice gazetted by the Minister provides for a generic EMPr, such generic EMPr as indicated in such notice will apply.**	**114** **118**

APPENDIX:

Map 1A - GENERAL LOCATION OF THE PROPOSED CHICKEN BROILER FACILITY MAP 1B - Infrastructure Map 1C- Infrastructure Plan MAP 2A - Provide a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers)	1
See proof of consultation : Summary of the issues raised by interested and affected parties, letters, correspondence, minutes, COMMENTS & RESPONSE REPORT etc. CORRESPONDANCE RECEIVED FORM STATE DEPARTMENTS , LOCAL AUTHORITIES , ETC.	2
Confirmation from the crocodile farm	3
Site photos	4
Biodiversity Specialist Report	5

Confirmation of litter removal	6
Fly control plan	7

PART A

1. SCOPE OF ASSSSMENT AND BASIC ASSESSMENT REPORT

CONTACT PERSON AND CORRESPONDENCE ADDRESS

a) DETAILS OF -

(i) Details of the EAP how prepared the report

Name of the Practitioner: DERA Environmental Consultants (Pty) Ltd.
Mr. Daan Erasmus
Tel No.: 018-468 5355
Fax No. : 018-011 3760
E-mail address:daane@dera.co.za

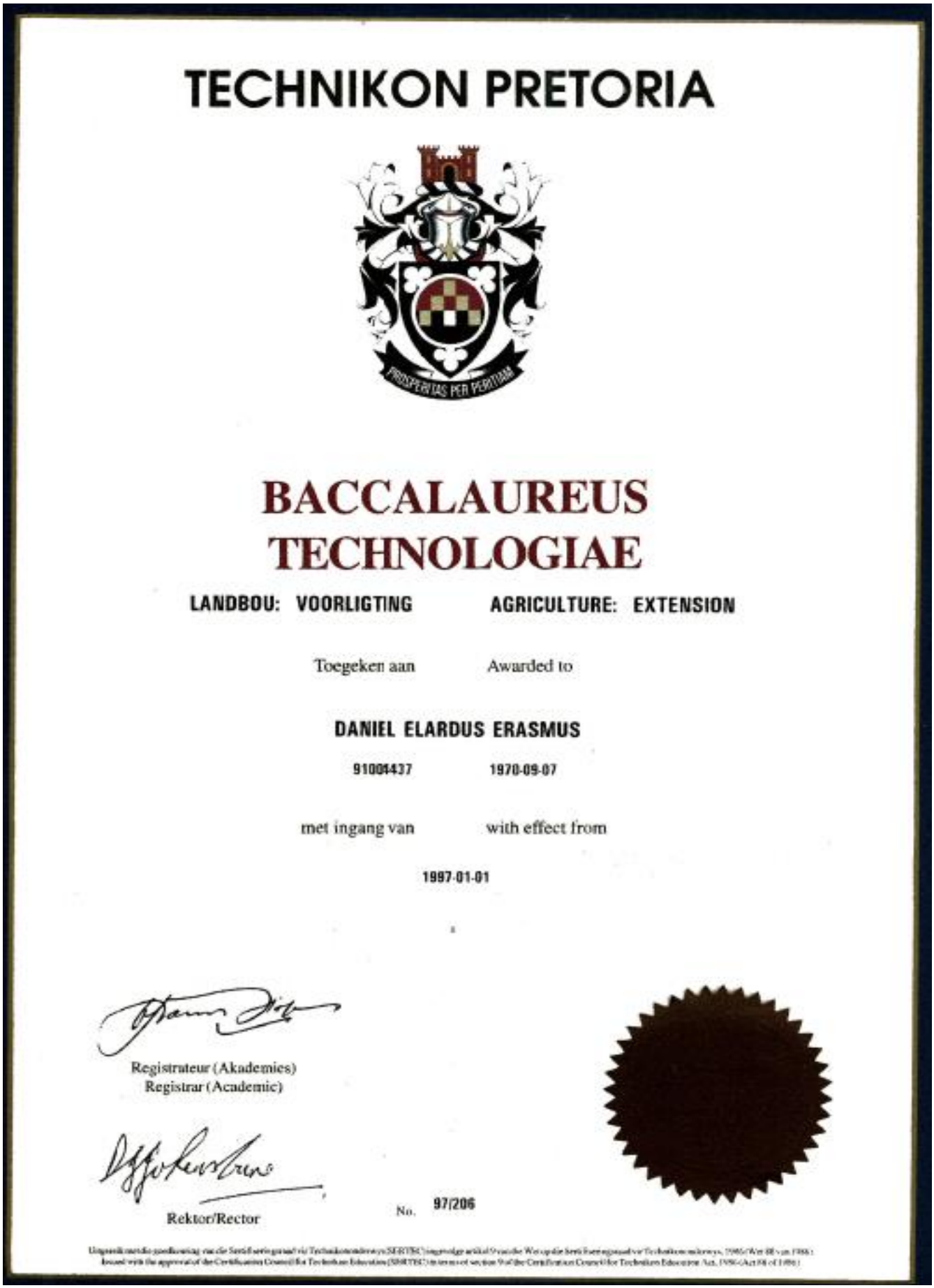
(ii) Expertise of the EAP

1) **The qualifications of the EAP**

The EAP Mr. Daan Erasmus has a National Diploma in Agriculture Resource Utilization and a Baccalaureus Technologiae degree in Agricultural Extension.

See next page for copy of qualification, Figure 1.

Figure 1 – Copy of Qualification



TECHNIKON PRETORIA

PROSPERITAS PER PERITIAM

BACCALAUREUS TECHNOLOGIAE

LANDBOU: VOORLIGTING AGRICULTURE: EXTENSION

Toegeken aan Awarded to

DANIEL ELARDUS ERASMUS

91004437 1970-09-07

met ingang van with effect from

1997-01-01

Registrateur (Akademies)
Registrar (Academic)

Rektor/Rector

No. 97/206

TECHNIKON PRETORIA

TECHNIKON PRETORIA

NASIONALE NATIONAL DIPLOMA

LANDBOU: HULPBRONBENUTTING — AGRICULTURE: RESOURCE UTILIZATION

Toegeken aan — Awarded to

DANIëL ELARDUS ERASMUS

91004437 — 7009075033088

met ingang van — with effect from

1994-01-01

Die volgende is voltooi — The following were completed

Landbou-ekonomie I, II en III	Agricultural Economics I, II and III
Voorligtingsmetodiek I en II	Extension Method I and II
Akkerbou I, II en III	Field Husbandry I, II and III
Weidingkunde A	Pasture Science A
Bodembeplanning I en II	Land Use Planning I and II
Bodembewaring I	Soil Conservation I
Grondkunde I en II	Soil Science I and II
*Meganisasie	Mechanisation*
Fisiese Wetenskap	Physical Science
Melkproduksietegnologie	Milk Production Technology
Vleisbeesproduksietegnologie	Beefer Production Technology
Kleinveeproduksietegnologie	Small Stock Production Technology
Grondklassifikasie III	Soil Classification III

****

Minimum Opleidingstydperk: 3 Jaar
Minimum Training Period : 3 Years

SERTEC
Uitvoerende Direktekteur/
Executive Director

Nr./No. ND1117/94

TECHNIKON
Rektor/Rector

2) **Summary of the EAP's past experience.**

The EAP, Mr. Erasmus is involved in broilers, environmental management, EMP & EMPR as well as Basic Assessments as from 1995. The EAP was involved in the NEMA Act through applications for chicken houses where the Basic Assessments Report was also used to get to a ROD.

See Figure 2 - below Curriculum Vitae of D. E. Erasmus.

DAAN ERASMUS

ENVIRONMENTAL PRACTITIONER

CONTACTS

daane@dera.co.za

+27 82 895 3516

Klerksdorp, North-west Province, South Africa

SKILLS

Report writing
Conduct auditing
Bilingual
(English/Afrikaans)
Computer Proficient
Report generation and analysis
Verbal and written communication
Computer Literate
Project Management
Results-orientated
Conduct risk assessments

ABOUT ME

Environmental Practitioner with 29 years' experience in Agricultural Science, and Mining- and Environmental Management.
Began own company – DERA Environmental Consultants (Pty) Ltd 2003.
Main scope of business: Compiling and submission of mining related applications; manage and compile legal environmental documents.
Furthermore doing monitoring work to evaluated compliance to environmental legislation; evaluating outstanding rehabilitation liabilities for mining companies.
Assist legal companies in determining environmental damage.
Do risk assessment and applications for closure certificates.
Give guidance in rehabilitation practices.
Compile EMPR/EIA for Mining Rights and compilation of EMPlan's for Prospecting and Mining Right applications.
Compile BAR & EMPR reports in support of application of Chicken Broilers and – facilities, Feed lots, Fuel Storage, Ploughing of virgin soil and associated infrastructure for Environmental Authorizations and many more based on experience from management of the natural resources and the mitigation of impacts.

WORK EXPERIENCE

JAN 1989 – SEPT 1990
MILITARY SERVICE
National Defence Force

Officers Course: II Lieutenant

JAN 1991 – FEB 2003
CHIEF RESOURCE CONSERVATION INSPECTOR
National Department of Agriculture

Administration of Act 43 of 1983, Agricultural Resource Conservation Act in North West Province. The main activities were veld inspections in order to monitor correct utilization of natural resources and where necessary take corrective steps.
Other activities included discussions and lectures at farmers union meetings;
municipalities and other institutions in order to promulgate the Act.
Management of personnel and personnel related matters;
management of budget of regional office in Potchefstroom;
management and control of declared weeds and invader species.
Evaluation of EMPr's and EIA's and monitoring mine rehabilitation and environmental management out of agricultural point of view
Audit and compliance inspections of mining operations.

Page 1

WORK EXPERIENCE (Continues)

MAR 2003 – PRESENT

ENVIRONMENTAL PRACTITIONER

DERA Environmental Consultants

Compiling and submission of mining related applications; manage and compile legal environmental documents.
Furthermore doing monitoring work to evaluated compliance to environmental legislation; evaluating outstanding rehabilitation liabilities for mining companies.
Assist legal companies in determining environmental damage.
Do risk assessment and applications for closure certificates.
Give guidance in rehabilitation practices.
Compile EMPR/EIA for Mining Rights and compilation of EMPlan's for Prospecting and Mining Right applications.
Compile BAR & EMPr reports in support of application of Chicken Broilers and –facilities, Feed lots, Fuel Storage, Ploughing of virgin soil and associated infrastructure for Environmental Authorizations and many more based on experience from management of the natural resources and the mitigation of impacts.

EDUCATION

1988

HIGH SCHOOL DIPLOMA– with Full Exemption

Wolmaransstad High School, North West, SA

English	Afrikaans
Mathematics	Science
Geography	Accounting

1994

NATIONAL DIPLOMA: AGRICULTURE: RESOURCE

Pretoria Technikon (Tshwane University of Technology) – Pretoria, Tshwane

Agricultural Economics I, II and III	
Extension Method I, II and III	Field Husbandry I, II and III
Pasture Science A	Land Use Planning I and II
Soil Conservation I	Soil Science I and II
Mechanization	Physical Science
Milk Production Technology	Beef Production Technology
Small Stock Production Technology	
Soil Classification III	Computer Application I

1996

BACCALAUREUS TECHNOLOGIAE: AGRICULTURAL EXTENTION

Pretoria Technikon (Tshwane University of Technology) – Pretoria, Tshwane

Agricultural Communication I	Agricultural Extension IV
Crop Production IV	Research Methodology

Page 7

EDUCATION - continues

1999 **MASTERS DEGREE IN SUSTAINABLE AGRICULTURE** - uncompleted
Orange Free State University, Bloemfontein, SA

Conservation of agricultural resources and the Environment
Soil-, climate and water use and soil and water Management
Plant and energy utilization and management
Economics of sustainability and development
Scrip – project proposal
Sustainable plant production systems
Farm management for sustainable agriculture
Strategic management, marketing and planning
Communication and technology transfer
Final dissertation - uncompleted

EIA- EXPERIENCE

The following list of EIA's was just some that was done by me:

- Compliance Creators [Goedgevonden] – was done as part of a Prospecting Right Application with Bulk Sampling, my role entailed: site visit, impact assessment and evaluation and compilation of report and handling of application process.
- Diamsure [Palmietfontein] - was done as part of Prospecting Right Application with Bulk Sampling, my role entailed: site visit, impact assessment and evaluation and compilation of report and handling of application process.
- Brenda Gagiano [Katdoornplaats] - was done as part of Prospecting Right Application with Bulk Sampling, my role entailed: site visit, impact assessment and evaluation and compilation of report and handling of application process.
- J & K Steyn Trust [Klipkuil] - was done as part of Prospecting Right Application with Bulk Sampling, my role entailed: site visit, impact assessment and evaluation and compilation of report and handling of application process.
- Pilansberg Tented Facility [Pilansberg] - was done as part of an Environmental Authorization for a listed activity for new tented camp, my role entailed: site visit, impact assessment and evaluation and compilation of report and handling of application process.
- FMS Trust [Saamgevoeg] - was done as part of an Environmental Authorization for a listed activity, for the construction of Chicken Broilers, my role entailed: site visit, impact assessment and evaluation and compilation of report and handling of

SHORT COURSES

Computer training Dbase IV
Seminar in public speaking
Veld assessment course
Resource Identification and utilization course
ArcView GIS course
Persuasion skills
Wetlands identification
Rehabilitation of Wetlands
Management skills
Agricultural law course

b) LOCATION OF THE ACTIVITY

Table 1: Property Description

(i) 21 digit Surveyor General Code for each farm portion	N0FT000000000087500013	
(ii) Farm Name:	FARM WAGENBEETJIES DRAAI 875 FT Remaining extent of Portion 13	
(iii) Coordinates of the application area	S 29° 28' 42" E 30° 29' 24"	
Application area (Ha)	Surface area of 8 ha	
Magisterial district:	Province	KwaZulu Natal
	District Municipality	Mgungundlovo
	Local Municipality	uMshwathi Local Municipality
Distance and direction from nearest	Approximately 13 km south-west from Wartburg.	

c) LOCALITY MAP

Appendix 1 A – Locality Map See also Appendix 1 A attached.

d) DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY.

GENERAL LOCATION OF THE PROPOSED CHICKEN HOUSE FACILITIES ON THE FARM WAGENBEETJIES DRAAI 875 FT (REMAINING EXTENT OF PORTION 13), DISTRICT, WARTBURG.

Construction of 12 new chicken broiler houses with dimensions of 15m x 120m, each housing 50 000 chickens. The site will have 12 houses in total. All the houses/broilers will be on remaining extend of portion 13 of the farm Wagebeetjies Draai 875 FT.

The applicant is Nyala Farm CC, where the sole member Mr. Hans Jansen van Vuuren. The registered owner of this farm portion is Freelands Farms CC of which Mr. Hans van Vuuren is also the sole member. It can thus taken that in his capacity as member of both CC's Mr. Hans van Vuuren is the applicant as well as the landowner. The area earmarked for this development is used as natural grazing by the landowner. The houses will be constructed as a steel structure with a sink roof. The floor foundation will be concrete. Each house will have its own coal heating system. The 12 houses will be fenced off as a unit. The project construction phase duration will be four years. These houses will have very limited environmental impacts. These houses will have low negative impacts on any neighbor or community. A full public participation process was undertaken.

See Appendix 1B for layout plan and adjacent infrastructure.

(i)Listed and specified activities

Table 2: Listed Activities

Listed activity as described in GN 983	Description of project activity
5. The development and related operation of facilities or infrastructure for the concentration of— (iv) more than 25 000 chicks younger than 20 days per facility situated outside an a urban area.	The construction of 12 chicken house facilities and associated infrastructure that will accommodate 50 000 chickens per facility for which 8 hectares will be cleared outside an urban area.
27.The clearance of an area of 1 hectares or more but less than 20 hectares of indigenous vegetation is required	The construction of 12 broiler house facilities and associated infrastructure that will accommodate 50 000 chickens per broiler facility. The disturbance and clearance for construction will be 8 hectares.
GNR 324 12(d)(xii) The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance is required for maintenance purposes undertaken in accordance to a maintenance plan. Sensitive areas as identified in an environmental management frame work as contemplated in Chapter 5 of the Act and adopted by the competent authority	Clearance of 8 hectares for the purpose of construction of 12 new chicken broilers and associated infrastructure.

(ii)Description of the activities to be undertaken

Construction of 12 new chicken broiler houses with dimensions of 15m x 120m, each housing 50 000 chickens. This site will have 14 broiler houses in total and will be on remaining extend of portion 13 of the farm Wagebeetjies Draai 875 FT.

The applicant is Nyala Farm CC, where the sole member Mr. Hans Jansen van Vuuren is also the sole member of the registered landowner Freelands Farm cc. The area earmarked for this development is used as natural grazing by the landowner.

There is currently no infrastructure on the identified area except entrance road and water reservoir.. In phase 1 the area for construction of the broilers will be cleared of vegetation. In phase 2 the houses will be constructed as a steel structure with a sink roof. The floor foundation will be concrete. Each house will have its own coal heating system. The houses will be fenced off as a unit. The project construction phase duration will be four years. These houses will have very limited environmental impacts. These houses will have no negative impact on any neighbor or community. A full public participation process has been undertaken.

e) POLICY AND LEGISLATIVE CONTEXT

(i) a description of the policy and legislative context within which the development is proposed including-
(ii) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and

(i) Policy & Legislative Context

The following legislation will applicable for these activities:

- NEMA (Act 107 of 1998) administered by EDTEA, Activities 5(iv) is applicable on this application:
  5(iv) chicken houses with associated infrastructure with concentration of more than 5000 chickens
- NEMA (Act 107 of 1998) administered by EDTEA, Activity 27 is also applicable as more than 1 hectare but less than 20 hectares will be cleared of vegetation.
- CARA Act (Act 43 of 1983), administered by National Department of Agricultural. The controlling of invader and declared weeds on the responsible activity area.
- National Water Act (Act 36 of 1998) , administered by Department Water & Sanitation. Section 21 A, taking of water from a resource. The usage of existing borehole water for chickens.
- National Environmental Management Waste Act (Act 59 of 2008). Producing of domestic waste and waste from activity. The domestic waste will be very small quantities and the manure produced from the activity will be used on the cultivated fields as fertilizer. No permanent stockpiling of manure will be done at the chicken broiler facility.

(ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;

The area is zoned for agricultural use of which the chicken house will still be in the agriculture center for food production. This is an existing farm and other farms in the area also have agricultural related activities, like crocodile farming, feedlot and chicken houses .

The new broiler project will assist in food security for the province as well as job opportunities. This project will enhance and progresses the agricultural development in KwaZulu Natal as well as this district.

This activity will be in line with will take place on a farm which is 13km outside the Urban edge of Wartburg.

This activity will be in line with the current (IDP) and SDF frameworks of the local municipality. This project will support the (IDP) as new job opportunities will be created as well as new sustainable development in the Agriculture sector, which is an important sector in this Local Municipality district.

The existing gravel D162 road will be used for the transportation of chickens, chicken feed and other maintenance. The impact on the road will be minimal with an additional 3 trucks a day that will use this road for this project. There is an existing entrance to the farm from the D163 that will be used. This entrance road (on the project site) will be upgraded and properly maintained.

Agricultural development which will support economic growth and further job opportunities also in the further processing of the chicken meat (slaughtering) which will also be in Wartburg and Pietermaritzburg district.

This project will have no negative impacts that cannot be mitigated and the project will be economical sustainable without adverse impacts on the environment.

Job creation and development of this area is in line with the IDP.

It is in line with the spatial development framework of this area. Additional chicken farm infrastructure is being needed by the owner to continue business and ensuring job opportunities in the long term.

No services or costs will be needed from the municipality.

This area is currently only used as natural grazing and is situated nearby the Wartburg tar road which make the transport much easier.

A portion of 8 ha will be used, with minimal environmental impacts.

The benefits for this project will outruns the negative impacts as the assistance for food security and job creation outreach the negative environmental impacts which are minimal.

There will be no precedent set within the local municipality by accepting this project as there are already existing chicken houses in this area.

No person's rights will be negatively affected by the proposed activity as, the applicant is also the landowner of the land surrounding the area of interest.

The proposed activity will not compromise the "urban edge" as defined by the local municipality, as it is outside the urban edge.

The benefits to society will be in general and to the local communities that jobs will be created during the construction and ultimately the operational phase of the chicken broilers.

This project fits into the National Development Plan for 2030 as food security and job creation in agricultural sector will be accomplished.

The general objectives of Integrated Environmental Management as set out in Section 23 of NEMA as amended have been taken into account by the following: This activity will have no high negative impacts and all impacts were evaluated and all impacts can be mitigated. The public participation was done in full. The modes of environmental management were identified, that will be best suited for the activity, ensuring that this particular activity is pursued in accordance with the principles of environmental management as set out in section 2.

The principles of environmental management as set out in Section 2 of NEMA as amended have been taken into account by means of the following: No persons will be affective negatively in this project. The sustainability of this project will have no disturbance on ecosystems or loss of biodiversity. No heritage site will be affected. All environmental impacts were taken into consideration and the low negative impacts can be mitigated. There is no sensitive environmental feature on site or nearby that will be affected.

f) NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

There is a need for sustainable chicken production in KwaZulu Natal. The demand for chicken is very high at this stage, thus the need for more broilers to keep up with the demand. Nyala was offered a contract for producing of chicken for one of the slaughter houses. The preferred location is ideally located within

existing chicken farms and agricultural activities. In the surrounding area there do exist a crocodile farm, chicken houses and a feedlot. The location is also very good as it is nearby to the Wartburg /Pietermarizburg tar road with existing ESCOM infrastructure on the farm. The demarcated area for the facility is part of the existing farm used as natural grazing. The preferred site is located in the center of the farm in order to have it the furthest away from the neighboring farms.
As the applicant own this farm and he want to do this activity to make his farm more productive at his own economic risk and cost.
The job opportunity for at least 24 new jobs in this relatively small community will have a big positive impact on poverty relief where at least 96 relatives will benefit from these new jobs and income. Especially now after the Covid pandemic the sustainability of jobs and income generation to the communities are very important. As the project gets into production there will be a need of maintenance and goods needed for the operation that will be sourced locally as far as possible. This will have again positive spin offs to local industries saving jobs, creating jobs and generate sustainable income. New sustainable projects that can create job opportunities and income is now needed to assist with the economic downfall after the Covid pandemic. This project is thus very important for these named reasons.
The locality of the chicken broiler houses on the farm will also ensure the lowest environmental impacts. The type of activities will not have big/high impacts on the environment. The houses will be built in an environmental friendly manner ensuring maximum cooling through natural wind in the summer and to keep heat inside in the winter and minimizing the heating through coal powered heaters facilities.

g) MOTIVATION FOR THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVE

This is a planned new chicken broilers facility with disturbance 8 HA in total and will be in operation for the next 30years. The entire area is currently used as natural grazing for agriculture purposes. The existing infrastructure found on site is only an access road and a water reservoir,. The preferred site is situated in the center of the farm in order to have the biggest distant between the chicken broiler houses and the neighboring dwellings.
This preferred site is outside the urban edge. This land is currently used for agricultural activities thus no change in land use.
The Chicken broiler area will be clearly demarcated. The preferred location is ideally located within existing chicken farms, crocodile farm, feedlot and agricultural activities. The location is also good as it is nearby to the Wartburg /Pietermaritzburg tar road with existing ESCOM infrastructure on the farm. The locality of the new broilers on the farm was chosen in such a manner that the lowest impact on the environment as well visual impact to the neighbours and general public.
This application was carefully selected in order to have the maximum distance from the Umgeni River and natural water courses. The Umgeni River is 448m south-west from the nearest point of the application area.

The type of activities will not have big/high impacts on the environment. The houses will be built in an environmental friendly manner to ensure maximum cooling through natural wind in the summer and to keep the heat inside in the winter and minimize the heating through coal. The roofs and side will be isolated. See photo sheet of the current site in Appendix 3.

h) FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVE WITHIN THE SITE

(i) Details of the development footprint alternatives considered

An alternative site was investigated to move the site to the other side of the gravel road that will ease the visibility impact on the neigbour Mr. Harper. The surveyor did survey the alternative site and the outcome was that it will cost around R1.5million more on earthworks alone to level this alternative site. The site on this side of the road will brings also water runn-off problems that will

have to go through the gravel road to the Umgeni River. This alternative is thus not viable and will the site stay on the preferred area.
The current site will be also in the center of the farm that will give the furthest distance to the surrounding neighbours. An alternative site could not be identified as the area needed for the 12 broiler houses are only suitable on the preferred site which will be the nearest to the existing infrastructure needed like, access road, water and ESCOM and will be furthest away from the natural water courses. The current land is vacant and used for cattle grazing purposes. The current identified site is next to existing borehole and storage dam and ESCOM point thus no further layout costs and disturbance for water and electricity points to another site. There are no buildings on the application area. Thus the option to establish chicken broiler houses will be the only compatible agricultural alternative land use. The applicant (owner of the piece of land), is not interested in any other alternative land use.

(a) the property on which or location where it is proposed to undertake the activity

There are no alternative for the property as the application is for this is a surface area of 8 ha on the specific property. The current preferred property is owned by the applicant Mr. van Vuuren. Mr. van Vuuren does not own another property thus an alternative property could not be used.

(b) the type of activity to be undertaken

The chicken broiler project as activity will be positive for job creation and a sustainable income generation. The footprint on this activity (8ha) will also be small in terms of the rest of the farm area and allow the normal farming activities (cattle farming) to continue with no influence thereof.
The type of activity is in line with the requirements for chicken broilers (as production units) as part of the overall agricultural activity on the farm that is farming with chickens and cattle.

(c) the design or layout of the activity

An alternative for layout was investigated for building all the chicken broiler houses in one row on the western side of the site in order to soften the visual impact on Mr. Harper. This alternative would create new problems and challenges of which the main concern was that the houses would be then much nearer to the river which will be challenged by DWS. Furthermore the houses will be nearer to each other that create problems with the trucks on loading and unloading of chickens and the feed depositing. If the distance between the houses is to close it will effect the wind flow and extractor fans for optimal performing. The alternative above is thus not practical and sustainable.
The layout of the activity will and can only be on the application area as per sketch plan (Map No. 1B).
The layout of the broilers will be done in such a manner that the chicken broiler houses will use the environment as far as possible in terms of heating and cooling.

(d) the technology to be used in the activity

The applicant did investigate and are still busy seeking for the best technology that will have the least impact on the environment. One of the technology alternatives is the type of material used for the heating of the houses in the winter. The alternative of woodchips instead of coal as normally used was investigated and seem to be the better one to use as the emissions into the air are much cleaner. The alternative of wood chips will be used.

The applicant is still investigating the alternative of another heating unit called “Bosman Droëers” instead of the Heatcove units. This decision was not made as the influence of electricity used on the Bosman Droëers will be higher and still need to investigate if it will be sustainable and economical.
The technology used in the activity will as standard practice at all other chicken houses and the best

options will be determined by the applicant.

(e) the operational aspects of the activity, and

There are alternatives on the type of feed used to reduce the smelling factor in the litter that will definitely be used. The operational aspect is only the daily feeding/production of chickens and changing of chickens with end of the cycle every 35 days, under controlled conditions at the planned broiler facility. The operational aspects of production will be investigated and changed where alternatives are the better option. No permanent stockpiling of manure and handling of domestic waste. The dead chickens will be removed on a daily basis to a nearby Crocodile Farm for feeding of the crocodiles. See confirmation letter attached as Appendix 3.

(f) the option of not implementing the activity

This option might only be possible if the applicant decide to abandon the project.

(ii) Details of the Public Participation Process Followed

The process as described by NEMA for Environmental Authorization was followed. See Table 5 & 6 below for the identification of Interested and Affected Parties to be consulted with. The landowner (Mr. Hans Jansen van Vuuren) and the direct neighbours were consulted and the consultation letter were send via emai. Two of the adjacent neigbours are represented by Mr. Neil Malenham of Malenham attorneys and all consultation were done through his office An advertisement was placed in the local newspaper, the Greytown Gazette of 2 June 2021 and another was place in the Witness of May 2020. A site Notice was put up at the entrance to the application area on 1ste of June 2021, where all passers-by are invited to give through their comments of objections toward the proposed application. As this consultation process was in Covid 19 lockdown period the EAP was not able to be part of the meeting with the neighbours. A zoom meeting was held on 14 June 2021 and attendance register as well as minutes of this meeting is available in Appendix 2. The issues raised in this meeting were noted and addressed in the BAR. The main issues raised on this meeting were the impact on the gravel road and the visual impacts for the neigbours and security and health issues. Mr. Malenham requested a site visit in order to familiarize themselves with the site. This vist was arranged for 19 June 2021, but Mr. Malenham asked for another date. This site visit has not take place

See detail attached in Appendix 2.

See proof of consultation under Appendix 2.

Greytown Gazette	
2 June 2021	
Latitude	Longitude
29° 28’ 44.83”S	30° 29’ 33.07”E
1 June 2021 Notice at gate entrance	

(iii)Summary of issues raised by I&AP's

See **Appendix 2** for full detail on public participation.

Table 8: Summary of Identified I&AP's and issues raised.

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an "X" where those who must be consulted were in fact consulted.		Date sent and/or Comments Received	Issues raised	EAP's response to the applicant
AFFECTED PARTIES	X			
Freelands Farm CC Mr. H. Jansen van Vuuren (Only member of Freelands Farm CC) P.O. Box 371, Ballito, 4420 Cell: 082 805 6219 e-mail: hansjvr@gmail.com (Landowner)		4 Aug 2021	No objection. The applicant is the landowner. BAR/EMP send with Courier Guy	**The applicant Mr. Hans van Vuuren is the only member of Freelands Farm CC which is also the landowner.**
Lawful occupier/s of the land				
Landowners or lawful occupiers on adjacent properties				
Mr. Miles Dray 28 Church Lane Pinetown, 3610 Cell: 082 451 1168 E-mail: miles@hiscuttdray.co.za (Neighbour)		6 July 2021 13 July 2021 4 Aug 2021	Consultation letter and minutes send via e-mail to Mr. Dray Complete application for Environmental Authorisation was send as a hard copy to Mr. Dry with Courier Guy. BAR/EMPr send with Courier Guy for comments	
G. Greyling Tikofarm Feedlot 875, Warthburg P.O. Box 11411, Dorpspruit, 3206 Cell: 071 511 7132 e-mail: greylinghendrik2@gmail.com		10 June 2021 26 July 2021 4 Aug 2021	Registration form for I&AP sent to Mr. Greyling No objection towards the project, awaiting written response. BAR/EMPr send with Courier Guy for comments	Minutes of Zoom meeting sent to Mr. Greyling 21 June 2021
Neil Maleham 9 Halstead Road, Gillitts, Durban Cell: 082 560 4799 e-mail: neil@malehamattorneys.co.za Representing: David Harper Kay Harper Mark Harper Tracey Williams Glen Goulding Paul Goulding		3 June 2021 11 June 2021 24 June 2021 28 June 2021 6 July 2021 18 July 2021 26 July 2021 4 Aug 2021	Registration as Interested and Affected party with reference to advertised application. Invitation for Zoom Meeting dated 14 June 2021 sent to I&AP's Confirmation received of zoom meeting audio and minutes - received. E-mail received – requesting timeframe for BAR E-mail from Mr. Goulding received- reply sent Confirmed via e-mail that it will not be possible to visit the site as discussed telephonically and via e-mail E-mail – requesting progress on draft BAR BAR/EMPr send with Courier Guy for comments	It was confirmed by Mr. Malahem that it is not necessary to liaise with any of the represented parties and that all communication regarding the application will be forward to the I&A's Zoom meeting 14 June 2021 – minutes sent to Mr. Malahem on 21 June 2021 Telephonically conversation and e-mail sent to Mr. Malahem On the zoom meeting Mr. Maleham request a site visit in order to confirm the application area. A date was given through to Mr. Malenham but the site visit was not confirmed them Area demarcated on farm 19 July 2021 between 9 & 10 for 2 persons to visit site.
Tamboti Trading (Pty) Ltd. Nicolaas and Priscilla Dent Cell: 082 804 6408 E-mail: tambotitrading@gmail.com (Neighbouring farm)		3 June 2021 7 June 2021 10 June 2021 11 June 2021 4 Aug 2021	Registered as Interested & Affected Party Request to be registered for Zoom Meeting Registration form for I&AP sent together with brief description of project E-mail received from Natasha du Preez requesting more information BAR/EMPr send with Courier Guy for comments	21 June – Minutes of zoom meeting sent to Mr. Dent It was confirmed by the EAP that they will receive the draft BAR with all the information
Municipal councilor				

Municipality	X			
uMshwathi Local Municipality Mr. Nhlanhla Maxwel Mabaso Private Bag X29, Warthburg, 3233 Tel: 033 816 6800		4 Aug 2021	BAR/EMPr send with Courier Guy for comments	
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA.				
Eskom				
Communities				
Department of Economic Development, Tourism and Environmental Affairs				
Shawn Janneker uMgungundlovu District Office Environmental Management Inspector – Grade 2 uMgungundlovu District Office 8 Warwick Road, Cascades, Pietermaritzburg, 3202 Tel: 033 347 1820 Cell: 076 943 1913 E-mail: shawn.janneker@kznedteal.gov.za		22 Feb 2021 7 June 2021 4 Aug 2021	Site Visit , pre application meeting and application acceptance BAR/EMPr send with Courier Guy for comments	**Pre application meeting – 22 Feb 2021** **See minutes of meeting**
Ezemvelo KZN Wildlife	X			
Noluthando Dhlamini P.O. Box 13053, Cascades, 3202 1 Peter Brown Drive, 3201 Tel: 033 845 1346 E-mail: Noluthando.Dlamini@kznwildlife.com		4 Aug 2021	BAR/EMPr send with Courier Guy for comments	
KZN Amafa and Research Institute	X			
Bernadette P.O. Box 2685 195 Langalibalele Street Pietermaritzburg, 3201 Tel: 033 394 6543		4 Aug 2021	BAR/EMPr send with Courier Guy for comments	
Department of Human Settlements, Water & Sanitation	X			
Ms. Nonkululeko Mokoena Water quality management 88 Southernlife building, Durban, 4000 Tel: 031 336 2789 Cell: 083 297 0832 e-mail: MokoenaN@dws.gov.za		4 Aug 2021	Site inspection was done and Ms Mokoena is awaiting draft BAR for comments BAR/EMPr send with Courier Guy for comments	
KwaZulu –Natal Department: Agriculture and Rural Development	X			
Thabede Bongiwe 1 Cedara Road, Park Homes (behind engineering building) Pietermaritzburg, 3200 Tel: 033 355 9347 Cell: 076 941 2535 E-mail: bongiwe.thabede@kzndard.gov.za		21 June 2021 27 August 2021	Previous application sent to Mr. Mans Comments received 27/08/2021 BAR/EMPr send with Courier Guy for comments	**Comments addressed in BAR**
KwaZulu –Natal Co-operative Governace and Traditional Affairs	X			
Barbara Mgutshini Private Bag X9078 330 Langalibalele Street Pietermaritzburg, 3201 Tel: 033 395 2831		4 Aug 2021	BAR/EMPr send with Courier Guy for comments	
KwaZulu –Natal Department of Transport	X			

Michelle Schmidt Cell: 082 902 0120 E-mail: Michele.schmid@kzntransport.gov.za Mr. Blake Mackenzie Inkosi Mhlabunzima Maphumulo House 172 Burger Street, Pietermaritzburg, 3200 Cell: 083 631 2805 e-mail: blake.mackenzie.kzntransport.gov.za Infrastructure Services D-Block, 224 Prince Albert Street, Pietermaritzburg, 3200 Tel 033 355 0569 E-mail: chris.duplessis@kzntransport.gov.za		23/24 Feb 2021 24 Feb 2021	Layout plans, SG diagrams and title deeds sent Comments received from Chris du Plessis BAR/EMPr send with Courier guy for comments	**Comments addressed in BAR**
KwaZulu Natal Department of Health	X			
Mr. Bongi Gcaba Private Bag X9051, Town Hill Office Park, 35 Hyslop Road, Pietermaritzburg, 3201 Tel: 033 940 2400		4 Aug 2021	BAR/EMPr send with Courier Guy for comments	
Other Interested and/or affected parties	X			
H&K (Pty) Ltd Heinz Wittig (Director) P.O. Box 173, Warthburg, 3233 Tel: 033 5031 946 Cell: 082 558 1751 E-mail: Heinz@wittig.co.za		21 June 2021 20 July 2021	E-mail sent to Mr. Wittig Confirmation of removal of chicken litter – see letter attached.	

Public notice published in Greytown Gazette of 2 July 2021

(iv)The Environmental attributes associated with the alternatives

1. Baseline Environment

Introduction:
The purpose of this section is to provide information on the environment in which the proposed broilers activities will take place, with a view to identify sensitive issues/areas, which need to be considered when conducting the impact assessment.

The application is over: FARM WAGENBEETJIES DRAAI 875 FT (Remaining extent of Portion 13). This area can be described as natural veld and grazing land for grazing for cattle, see Map 1B.

Magisterial District:
The town of WARTBURG is situated 13km South-West from the site, on the R 614 in KwaZulu Natal Province. It is situated within the uMshwati Local Municipality, which is an administrative area in the KwaZulu-Natal Province.

Direction from neighbouring town:
Ideally located with regard to the town of Wartburg (13 km South-west from town)
See Location of proposed site on Locality Map (MAP 1A).
Site coordinates: S 29° 28' 44.83" and E 30° 29' 33.07"

Existing Surface Infrastructure:
There are no structures found on the application area of 8 hectare, which are within existing farming area of natural grazing. From the Wartburg/ Pietermaritzburg tar road the D162 gravel road will be used to get to the existing farm entrance. Access to the property is gained by an existing farm gravel road that needs to be upgraded. See Appendix 1(B) for Infrastructure Map and see MAP 1B.

(a) Type of environment affected by the proposed activity.

Vegetation type:

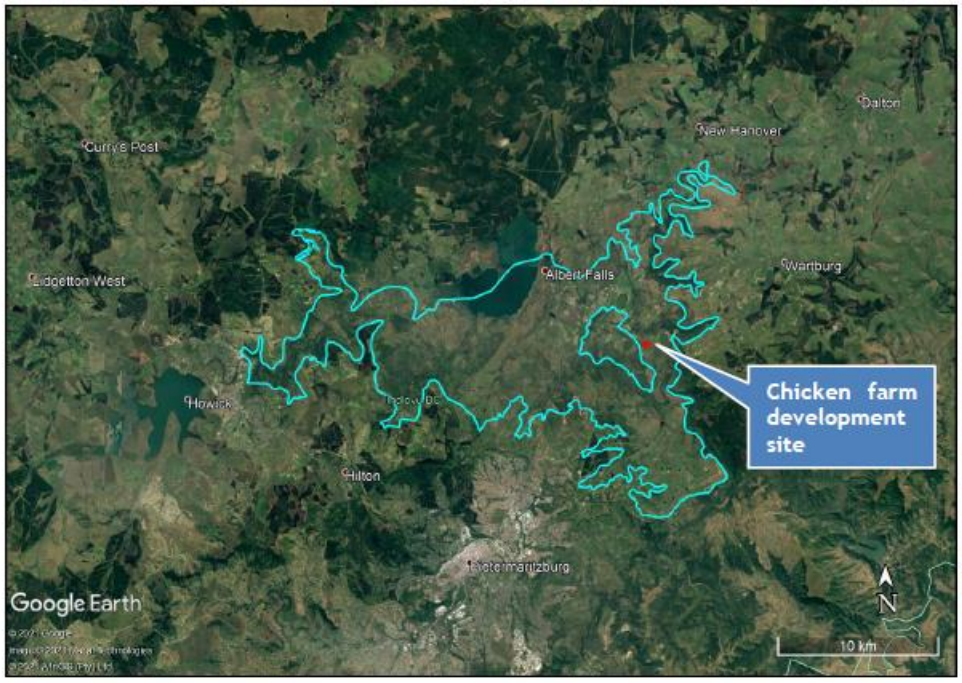
The original undisturbed vegetation type of the proposed project site could be described as the KwaZulu-Natal Hinterland Thornveld (SVs3). The project site will have a total size of 8 hectares. The existing land use is part of a farm.

SOURCE: The GCS Report (Ref. 21-0096) 14 Apr 2021 compiled by Magnus van Rooyen (See full Report attached in Appendix 5)

(a)1 Vegetation

The KwaZulu-Natal Vegetation Map included in the KwaZulu-Natal Bioregional Sector Plan (2014) has indicated that the vegetation type on the study area is classified as KwaZulu-Natal Hinterland Thornveld (SVs3). Historically the vegetation type occurred in patches scattered immediately at higher altitudes above the Eastern Valley Bushveld (SVs6) vegetation type between altitudes of 450 – 900m in river valleys mainly of the Thukela River catchment, the Mvoti and the uMngeni rivers and as far south as the tributaries of the Mkomazi River. Typically, this vegetation type consists of open thornveld dominated by *Acacia* species on undulating plains found on upper margins of river valleys.
SOURCE: The GCS Report (Ref. 21-0096)

Figure 1.1: Location of the development site within the KwaZulu-Natal Hinterland Thornveld (SVs3)

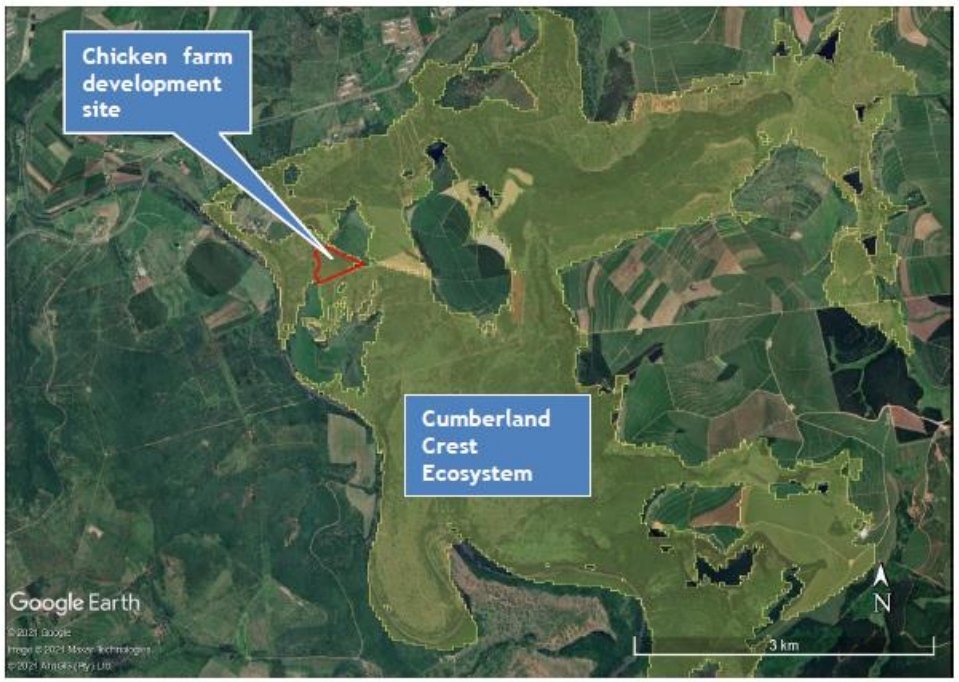


Furthermore, the desktop assessment of the development property has indicated that the entire of the development property falls within the Cumberland Crest ecosystem. This ecosystem is protected in terms of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) and is classified as being Endangered.

Key biodiversity features include one millipede species, *Doratogonus cristulatus*, three plant species, including *Acalypha angustata* (no common name), *Helichrysum woodii* (no common name) and *Senecio exuberans* (Ragworts) and three vegetation types including Ngongoni Veld, KwaZulu-Natal Hinterland Thornveld and KwaZulu-Natal Sandstone Sourveld.

The presence of this ecosystem on the development site relates to the development site's presence within the KwaZulu-Hinterland Thornveld vegetation type.

Figure 1.2: Location of the development site within the Cumberland Crest ecosystem



The site assessment focussed on the identification of the presence of these features and to map them accurately if found to be present. The site assessment identified two key vegetation communities within the development property. These are the following:

- Planted pastures (grazing land); and
- Degraded Thornveld.

The location and extent of these are provided in Figure 1.3 below.

Much of this *Acacia* thornveld has been disturbed on the site by the historic preparation for the current land use. These disturbances have resulted in the vegetation on the site being dominated by open pastures consisting of a mixture of *Eragrostis tef* (Tef), *Eragrostis gummiflua* (Gum Grass), *Elionorus muticus (*Wire Grass) and *Pennisetum clandestinum* (Kikuyu).

A portions of the site consist of fragmented stands of degraded thornveld consisting of tree species limited to *Acacia nilotica* subsp. *kraussiana* (Scented-pod Thorn), *Acacia karroo* (Sweet Thorn) and *Acacia sieberiana* (Paperbark Thorn).

Plate 8-4: View of the planted pastures (grazing land) on the site

Plate 8-5: View of the degraded thornveld

SOURCE: The GCS Report (Ref. 21-0096) 14 Apr 2021 compiled by Magnus van Rooyen (See full Report attached in Appendix **5)**

(a)2 Avifauna

The interrogation of the Important Bird Areas (IBA) (2015) dataset managed by SANBI has indicated that there are no IBAs that overlap the development site. It is however believed that the site will be frequented by avifaunal species that are characteristic to the area. During the site visit no bird species of special concern were identified.
SOURCE: The GCS Report (Ref. 21-0096)

(a)3 Mammals

In the list of critically endangered and endangered ecosystems as identified in the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) has identified no mammals species of concern the Cumberland Crest ecosystem. In addition to several rodent species, it is believed that small antelope will frequent the site. These antelope are likely to included *Sylvicapra grimmia* (Grey Duiker). SOURCE: The GCS Report (Ref. 21-0096)

(a)4 Reptiles

In the list of critically endangered and endangered ecosystems as identified in the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) has identified no reptile species of concern the Cumberland Crest ecosystem. During the site visit no reptile species of special concern were identified. SOURCE: The GCS Report (Ref. 21-0096)

(a)5 Amphibians

The list of critically endangered and endangered ecosystems as identified in the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) has identified no amphibian species of concern that occur in the Cumberland Crest ecosystem. During the site visit no reptile species of special concern were identified. SOURCE: The GCS Report (Ref. 21-0096)

(a)6 Conservation significance

The KwaZulu-Natal Bioregional Sector Plan (2014) was interrogated to determine the overall conservation significance of the development site in terms of the larger regional area. The findings of this interrogation are presented in the Table 1.2.

Table 1.2: Conservation significance of the development site in accordance with the KwaZulu-Natal Bioregional Sector Plan (2014)*

KwaZulu-Natal Bioregional Sector Plan (2014) attribute	Finding
Landscape Corridors	None present
Ecological Support Area	None present
Ecological Support Area Corridors	None present
KwaZulu-Natal Critical Biodiversity Areas (Optimal Version)	None present
KwaZulu-Natal Critical Biodiversity Areas (Irreplaceable Version)	Present in the form of the Cumberland Crest ecosystem

*From the SANBI BGIS website (https://bgis.sanbi.org/MapViewer)

The Critical Biodiversity Area that has been identified on the site is directly associated with the Cumberland Crest ecosystem that is identified in the National Environmental Management: Biodiversity Act (Act No. 10 of 2004).

No semblance of this ecosystem is present on the development site as it has been degraded by the historic establishment of agricultural activities. SOURCE: The GCS Report (Ref. 21-0096)

.

(a)7 Buffer determination

As a result of the relatively disturbed nature of the biodiversity on the site, no terrestrial ecological features that require protection by buffers were identified. As such, the provision for terrestrial buffers is not considered to be necessary. *SOURCE: The GCS Report (Ref. 21-0096)*

(a) 8 Species of special concern

No Species of Special Concern in accordance with the IUCN Red Data List were found to be present on the development site. SOURCE: The GCS Report (Ref. 21-0096)

Topography: The site has one terrain type, which is characterized as plains. The slope varies around <0.1% to not more than 3%. There is a slight slope towards the river area.

Surface Water: This application area fall within the water management area of the Umgeni River. The Umgeni River 448m to the south-west of the site.

SOURCE: The GCS Report (Ref. 21-0096) 14 Apr 2021 compiled by Magnus van Rooyen (See full Report attached in Appendix **5)**

Presence of rivers/streams/wetands:

The NFEPA database indicates the presence of the channel of the uMngeni River approximately 448m to the south west of the development site with two Unchannelled Valley Bottom wetlands associated with the uMngeni River also approximately 400m from the site. The location of these aquatic features are indicated in Figure 8-1.

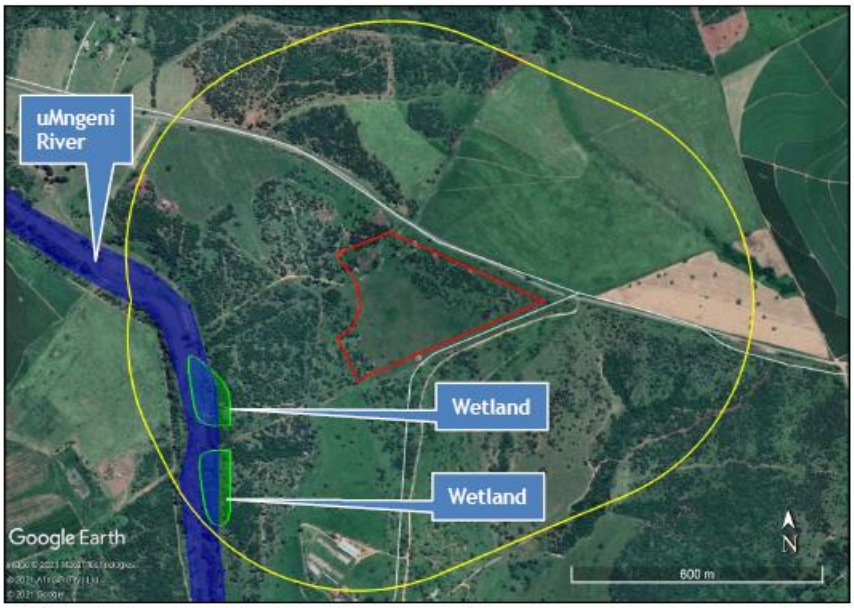


Figure 8-1: Location of the aquatic features identified in the NFEPA dataset (2014)

The EKZNW wetland dataset has not identified the any wetlands within the study area. The SAIIAE dataset has identified the presence of the uMngeni River channel as an aquatic feature within the study area. The location of the identified estuarine wetland is provided in Figure 8-2.

In addition, the KZN Rivers dataset in terms of the KZN Bioregional Sector Plan (2014) has identified the presence of a number of watercourses within the study area. The prominent watercourse is the uMngeni River channel with a number of smaller seasonal watercourses draining towards the uMngeni River. The location of these watercourses is indicated in the Figure 8-3.

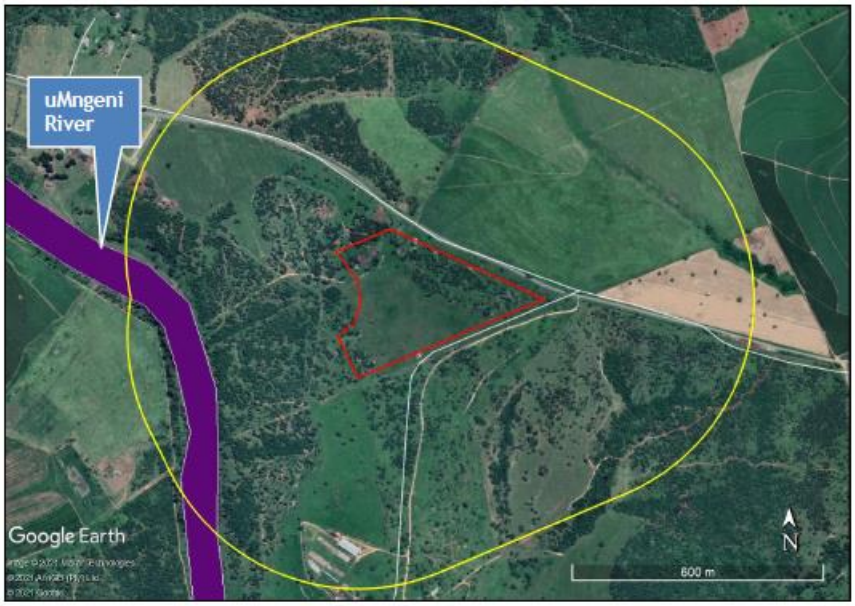


Figure 8-2: Location of the aquatic features (shown in purple) identified in the SAIIAE dataset (2019)

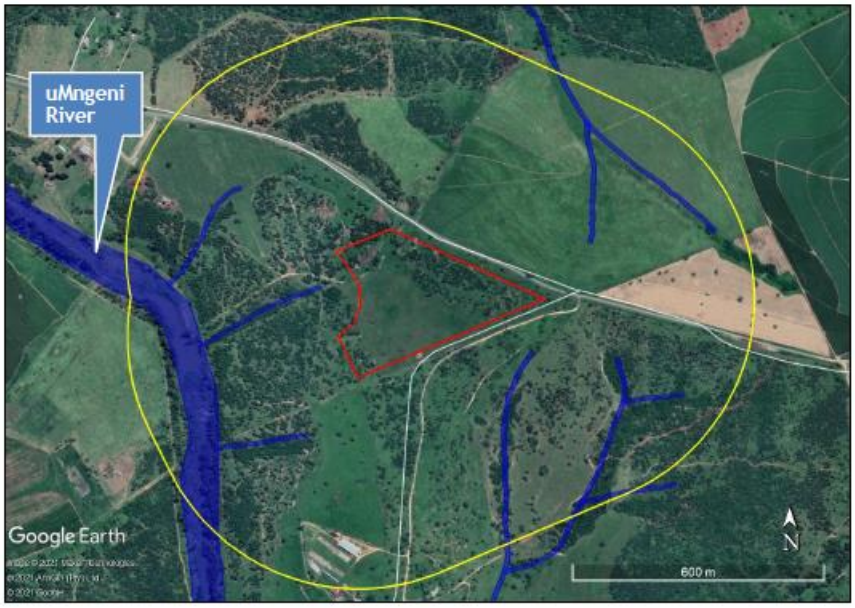


Figure 8-3: Location of the watercourses identified in the KZN Rivers dataset (2014)

The site assessment confirmed the presence of the watercourses as indicated on the KZN Rivers database (2014). **No wetland areas were identified either on the development site or within the 500m radius from the development site. The most prominent watercourse features is located approximately 100m to the west of the development property and drains in a westerly direction towards the uMngeni River.** This watercourse is seasonal in nature and will only flow during periods of high rainfall. It has eroded on to the underlying bedrock and is considered to be in a stable eroding state. The relatively steep gradient of the watercourse ensures that the flow in the watercourse is at a high velocity and for a very short period of time. SOURCE: The GCS Report (Ref. 21-0096) 14 Apr 2021 compiled by Magnus van Rooyen (See full Report attached in Appendix **5)**

Ground Water: There are boreholes used for stock watering by the landowner. The applicant intends to use water from these current boreholes as well as from the Umgeni River. The water uses will be for the chickens and potable water.

Air Quality: The impact on air quality will occur from construction work, transportation of building material and from the roads will occur. This impact will be low and will be monitored and mitigated trough wetting of the roads. The heating of the house in the winter with the coal ovens will have a very small impact on the air quality.

Noise: The impact of noise will be generated by the construction equipment. This operation will only be in day time working hours and will have a low impact on current surroundings. In the production phase the noise levels will be low and lowimpact to the neighbours.

Sites of Archaeological and Cultural Interest: No graveyards. According to Section 36(3) of the National Heritage Resources Act 25 of 1999 no person may, without a permit issued by SAHRA or a provincial heritage resources authority—

destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

Sensitive Landscapes: There are no sensitive areas that were identified on the application area.

Visual Aspects: The broilers activities will be visible from the D162 gravel road.

Social: The proposed activity will employ 23 people during construction and 24 during operational phase. Keeping in mind that Wartburg is 13km from the site.

(b) Description of the current land uses.

The area is currently used as natural grazing by the landowner and also the surrounding farms are being utilized for agriculture production.

(c) Description of specific environmental features and infrastructure on the site.

The current vegetation consists of natural grazing used for grazing of cattle. There are a few trees on the site. There are no other environmental features on site that need to be noticed and will be impacted on. The Umgeni River is flowing 4480m south-west of the site. See Map 1B. There is currently no existing infrastructure on site as for only a farm access road and water reservoir. The existing ESCOM line is just adjacent outside the application area. See Appendix 4 for all the site photos for indication of existing adjacent and surrounding infrastructure.

(d) Environmental and current land use map.

The current land use is agriculture grazing for cattle as part of the bigger farm activities only grasslands is present on this section of the farm and also the surrounding farms are being utilized for agriculture production.
See MAP 1B [Environmental features map] and TABLE OF PHOTO'S [in c above] for more detail.

(v) Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts -
(aa) can be reversed;
(bb) may cause irreplaceable loss of resources; and
(cc) can be avoided, managed or mitigated;

The proposed project is anticipated to impact on a range of biophysical and socio-economic aspects of the environment. The main purpose of the Basic Assessment Report is to identify and evaluate the significance of these potential impacts and determine how they can be minimized or mitigated.

It should be noted that a comprehensive Environmental Management Program (EMPr) will be developed and implemented to regulate and minimize the direct, indirect and cumulative impacts during the construction and operational phases. The potential environmental impacts identified, which will be investigated further in the Impact Assessment Phase of the project, are summarized in Table 9 on next page.

Table 9: Impact significance identification matrix for PROPOSED CHICKEN HOUSES

			A	B	C	D	E	F	E	F	G	H	I	J	K	L	M	N
		Components	**ABIOTIC**									**BIOTIC**			**VISUAL**	**SOCIO-ECONOMIC**		
	PHASE	**Impacts**	**Geology**	**Topography**	**Soil**	**Land capability**	**Land use potential**	**Surface water**	**Ground water**	**Air quality**	**Noise**	**Vegetation**	**Wildlife**	**Sensitive landscapes**	**Visual impact**	**Archaeological & cultural sites**	**Socio-economic impacts**	**Affected parties**
		Activity, Product or Service											L		L		H+	
1	Construction	Demarcation of chicken broiler sites (within 8ha)			**L**	**M**	**L**						**M**		**M**			
2		Establishment (site preparation, vegetation clearance, topsoil removal and stockpiling (use as surface run-off control measures) of proper access roads (upgrade existing road), Initial vegetation clearance, topsoil removal & stockpiling within the construction focus area.		**L**	**H**	**M**	**M**	**M**	**M**	**L**	**L**	**H**			**M**		**H+**	**L**
3		Establishment of storage facilities and ablution/toilet facility. Construction of 12 new Chicken broilers facilities (12 broiler houses and associated infrastructure. Construction of associated buildings and handling facilities (This facility will handle on average50 000 chickens per broiler on any time.)		**L**	**H**	**M**	**M**	**M**	**M**	**L**	**L**	**M**			**M**		**H+**	**L**
4		Provision of storage tanks for potable (drinking water for human and animal use)) and process water (dust suppression).							**M**	**M**					**L**		**H+**	**L**
5		Provision of waste handling/disposal facilities (domestic & industrial waste bins, and temporary storage of chicken manure)..		**L**	**L**	**L**	**L**	**M**	**M**	**M**		**H+**			**L**			**L**
6		Fencing –off chicken house facilities/ different sites and also access control (gate), etc.													**M**		**H+**	**H+**

			A	B	C	D	E	F	E	F	G	H	I	J	K	L	M	N
	PHASE	Components	ABIOTIC									BIOTIC			VISUAL	SOCIO-ECONOMIC		
		Impacts	Geology	Topography	Soil	Land capability	Land use potential	Surface water	Ground water	Air quality	Noise	Vegetation	Wildlife	Sensitive landscapes	Visual impact	Archaeological & cultural sites	Socio-economic impacts	Affected parties
		Activity, Product or Service											L		L		H+	
13	Decommissioning and closure	Replace and spread all topsoil evenly over site.			H+	H+	H+	H+	H+	H+	L	H+	H+		H+		H+	H+
14		Establishment of vegetation cover.			H+	H+	H+	H+	H+	H+	L	H+	H+		H+		H+	H+
15		Removal of all temporary & demolition of all permanent structures.			H+	H+	H+	H+	H+	H+	L	H+	H+		H+		H+	H+
16		Rehabilitation of all access roads, compacted areas, etc.			H+	H+	H+	H+	H+	H+	L	H+	H+		H+		H+	H+

(Vi) Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

Introduction:

This section below describes and evaluates the effects of the different broilers projects and the associated activities on the natural and social environments. The different environmental components, on which the project (can/may) have an impact, are:

1. Geology
2. Topography
3. Soil
4. Land Capability
5. Land Use
6. Vegetation
7. Wildlife
8. Surface Water
9. Ground Water
10. Air Quality
11. Noise
12. Archaeological and Cultural sites
13. Sensitive Landscapes
14. Visual Aspects
15. Socio-economic Structure
16. Interested and Affected Parties

IMPACT ASSESSMENT

Before the impact assessment could be done the different project activities were identified:

ACTIVITIES:

1. Access Road/access control
2. BROILERS (12 houses) with associated infrastructure

2a. Office and ablution facility will be in one building of ±200m² which will be situated nearby the main entrance gate.

2b. Each broiler house will have his own feed silo which consist of a steel and sink structure that stands upright about 5m high that can holds ±20 tons of feed. The surface needed for this silo structure will be 5m x 5 m

2c. Each broiler house will have its own water storage tank of 10 000 litre on a steel stand structure 3m high on a surface area of 3m x 3m

2d. Each broiler house will have its own heating system as part of the building.

3. Parking area for visitors. A small parking area will be paved next to the office building where six cars can park with a surface area of ±108m. All trucks will park next to the houses to either load or unload chicken and deposit feed into the silos. (transport)

4. Waste disposal facilities (Septic system drain, temporary storage of domestic waste, etc.)

Environmental Impact Assessment Summary:

- Environment likely to be affected by the broilers operation. (See MAP 1B) for location)

Environmental aspect	Affected		Not affected
	Negligible	Substantial	
1. GEOLOGY			X
2. TOPOGRAPHY	X		
3. SOIL		X	
4. LAND CAPABILITY	X		
5. LAND USE	X		
6. VEGETATION	X		
7. WILDLIFE	X		
8. SURFACE WATER			X
9. GROUND WATER	X		

10. AIR QUALITY		X	
11. NOISE	X		
12. SENSITIVE LANDSCAPES			X
13. VISUAL ASPECTS	X		
14. SOCIO ECONOMICS	X		
15. INTERESTED & AFFECTED PARTIES	X		
16. ARCHAEOLOGICAL			X

- Environment likely to be affected by the alternative land use

  Agriculture will not be a new land use over this area. The site that is earmarked for chicken broilers represents ± 100 % of the total area applied for. And it is further not foreseen that the activities would disturbed an area of more than (8 ha). The whole of the area will be under chicken broiler houses and associated infrastructure or activities.

- Assessment of the impacts created by the BROILERS activity

  Before any assessment can be made the following evaluation criteria need to be described:

*Explanation of **probability** of impact occurrence*

Probability of impact	Explanation of probability
Very low	<20% sure of particular fact or likelihood of impact occurring.
Low	20 to 39% sure of particular fact or likelihood of impact occurring.
Moderate	40 to 59% sure of particular fact or likelihood of impact occurring.
High	60 to 79% sure of particular fact or likelihood of impact occurring.
Very high	80 to 99% sure of particular fact or likelihood of impact occurring.
Definite	100% sure of particular fact or likelihood of impact occurring.

*Explanation of **extent** of impact*

Extend of impact	Explanation of extent
Site specific	Direct and indirect impacts limited to site of impact only.
Local	Direct and indirect impacts affecting environmental elements within the Wartburg district.
Regional	Direct and indirect impacts affecting environmental elements within KWAZULU-NATAL Province.
National	Direct and indirect impacts affecting environmental elements on a national level.
Global	Direct and indirect impacts affecting environmental elements on a global level.

*Explanation of **duration** of impact*

Duration of impact	Explanation of duration
Very short	Less than 1 year
Short	1 to 5 years
Medium	6 to 12 years
Long	13 to 50 years
Very long	Longer than 50 years
Permanent	Permanent

*Explanation of impact **significance***

Impact significance	Explanation of significance
No impact	There would be no impact at all - not even a very low impact on the system or any of its parts.
Very low	Impact would be negligible. In the case of negative impacts, almost no mitigation and/or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple. In the case of positive impacts, alternative means would almost all likely to be better, in one or a number of ways, than this means of achieving the benefit.
Low	Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and/or remedial activity would be either easily achieved or little would be required, or both. In case of positive impacts, alternative means for achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.
Moderate significance	Impact would be real but not substantial within the bounds of those which could occur. In the case of negative impacts, mitigation and/or remedial activity would be both feasible and fairly easily possible. In the case of positive impacts, other means of achieving these benefits would be about equal in time, cost and effort.
High significance	Impacts of a substantial order. In the case of negative impacts, mitigation and/or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these. In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.
Very high significance	Of the highest order possible within the bounds of impacts which could occur. In the case of negative impacts, there would be no possible mitigation and/or remedial activity to offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit.

(vii)The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected

The site layout will have the smallest impact on land capability which will be positive. The layout was also positioned more or less in the center of this farm in order to keep it the furthest away from the neighbouring houses (600 -700m). There will be no high negative impacts on the community. The impact that might have an impact on the neighbours are mainly ,noise visual and odour and the D162 gravel road. and all these impact will be low. All impacts can be mitigated and managed. The land is owned by the applicant.

This is a specific chicken broilers facilities project, no alternatives have been investigated, with the exception of the no-go alternative. The no-go option entails the continuation of the current land use (AGRICULTURE - grazing for cattle).

The project will contribute towards providing continued jobs (23 during construction and 24 during operational phase). The job opportunity for at least 24 new jobs in this relatively small community will have a big positive impact on poverty relief where at least 96 relatives will benefit from these new jobs and income. Especially now after the Covid pandemic the sustainability of jobs and income generation to the communities are very important. Should the proposed project therefore not be authorized to proceed, it is anticipated that employment opportunities will be lost.

Assessment of the nature, extent, duration, probability and significance of the potential environmental, social and cultural impacts of the proposed BROILERS and associated infrastructure, operation, including the cumulative environmental impacts.

ASPECT: 1. GEOLOGY

IMPACTS

Nature of the impact: No impact on geology expected.

CUMULATIVE IMPACTS : None

.

Extent: Site

Significance: No impact

ASPECT: 2. TOPOGRAPHY

IMPACTS :

Nature of the impact:

* Change in landform : The existing topography is described as flat and the majority of infrastructure required for the project would have an impact on topography. The nearest farm building 300m to the north-west of the landowner.

* The site shall be on a higher level than its surroundings (at least 800mm above road level)

Activity causing the impact :

Construction and operation of chicken broiler facility and associated infrastructure.

Extent: Site

Duration: Very long

Probability: Definite

Significance : Moderate

Phase responsible for the impact :

Construction, Operational, Decommissioning, Closure

ASPECT : 3. 1 SOIL

IMPACTS

Nature of the impact:

This is a planned chicken broiler facility and associated infrastructure. The surface area is being characterized by a thick layer of topsoil. The topsoil has been impacted on by existing agricultural activities such as grazing.

Prior to the construction of infrastructure 30cm topsoil will be removed and stockpiled and probable be used as surface run-off structures, etc.

Activity causing the impact:

The chicken broilers and associated infrastructure.

Extent : Site

Duration: Very Long

Probability: High

Significance : Moderate

Phase responsible for the impact:

Construction, Operation , Decommissioning, Closure

ASPECT : 3. 2 SOIL

IMPACTS

Nature of the impact:

The establishment, construction, operation and eventually rehabilitation(demolition) of listed structures such as the access roads, chicken broiler houses and associated infrastructure (parking area covered entirely by paving), movement of vehicles cause compaction of soil.

In the same time a certain surface area is therefore alienated. The surface area alienated would be restricted within the (Site = 8 HA in total). This area will be fenced-off .

Activity causing the impact:

Site preparation for construction of the broilers and associated infrastructure. and the construction, operation of listed infrastructure

Extent : Site

Duration :Very Long

Probability : High

Significance: Low

Phase responsible for the impact:

Construction ,Operation, Decommissioning, Closure

ASPECT: 3.3 SOIL

IMPACTS

Nature of the impact:

Soil erosion: Due to the fact that certain surface areas (chicken broiler facility) and associated infrastructure. and direct surrounding area), access roads would become compacted and this would lead to lesser infiltration of rainwater and more run-off that could cause erosion on bare disturbed surfaces (including manure covered surfaces). Erosion would always be possible on uncovered, unpaved surface area, until such time a vegetation cover is provided during rehabilitation phase.

Activity causing the impact:

Surface compaction due to construction of chicken broilers facility and associated infrastructure.

Extent: Site

Duration Long

Probability: Medium

Significance :Low

Phase responsible for the impact:

Construction, Operation, Decommissioning, Closure

ASPECT : 3.4 SOIL

IMPACTS:

Nature of the impact

Potential of soil contamination ;

This is a planned chicken broiler facility and associated infrastructure. The soil within a surface area of (8 HA in total) has already been impacted on by the presence of manure from cattle grazing in on the site and farming activities. The soil surface of the chicken broiler facility and associated infrastructure will be covered by a the 12 broilers houses and cement paving that will form an impermeable layer that will prevent soil contamination from oil/diesel spillage.

Activity causing the impact:

Broilers and associated infrastructure.

Extent : Site

Duration: Very Long

Probability: Definite

Significance: Low

Phase responsible for the impact :

Construction , Operation, Decommissioning, Closure

ASPECT: 4.LAND CAPABILITY

IMPACTS:

Nature of the impact:

Permanent loss of land capability to support grazing. The area (8 HA in total) where the infrastructure such as the broilers and associated infrastructure, etc. will thus be alienated , until the chicken broilers and associated infrastructure been removed.

Activity causing the impact:
The construction of listed infrastructure such as broilers and associated infrastructure etc. The land capability of the infrastructure covered area will be totally destroyed.

.
Extent: Site

Duration :Very Long

Probability: Definite

Significance : Low

Phase responsible for the impact:

Construction, Operation, Decommissioning Closure

ASPECT : 5. LAND USE

IMPACTS:

Nature of the impact:

Only a small portion of land is effected by the CHICKEN BROILERS and associated infrastructure namely (8 HA in total). Once the CHICKEN BROILERS and associated infrastructure, structure (steel and concrete) has been demolished the area could be rehabilitated and the small piece of land could become available again for some use.

Activity causing the impact:

The construction, operation of BROILERS and associated infrastructure.

Extent : Site (8 ha)

Duration: Very Long

Probability: Definite

Significance: Low

Phase responsible for the impact

Construction, Operation, Decommissioning , Closure

ASPECT: 6.VEGETATION

IMPACTS:

Nature of the impact:

This is a planned chicken broiler facility and associated infrastructure, where initially vegetation clearance, disturbance, trampling by the cattle and farming activities within the site boundaries already has taken place.

Destruction of habitats for vegetation. Due to a disturbed ecosystem, bare ground and spreading of exotics can follow within a confined area if the facility is not utilized for cattle for some time. Surface areas possible disturbed is only restricted to (8 HA in total).

Activity causing the impact:

The site preparation, construction of listed infrastructure will cause destruction of habitats for vegetation. Due to a disturbed ecosystem, bare ground and invasion of exotics could further spread.

Extent: Site:

Duration: Long

Probability : Definite

Significance : Low

Phase responsible for the impact:

Construction, Operation, Decommissioning, Closure

ASPECT : 7. WILDLIFE

IMPACTS:

Nature of the impact:

Wildlife or wildlife habitat destruction /change / disturbance

The CHICKEN BROILERS and associated infrastructure is a planned facility that will be located on a small piece of land.

The habitat for wildlife has changed dramatically due to human intervention and the construction of man-made features such as farm buildings and associated infrastructure, ploughing of lands, etc. Some small animals could possible still be found that has adapted to the conditions.

Activity causing the impact

The flora which normally serves as habitat for animals would be destroyed during site preparation. The increase in activity will temporarily scare other animals.

Extent: Site

Duration : Long

Probability: High

Significance: Low

Phase responsible for the impact

Construction, Operation, Decommissioning, Closure

ASPECT : 8. 1 SURFACE WATER

IMPACTS:

Nature of the impact:

Increased silt load

Activity causing the impact:

The clearance of vegetation and the traffic on access roads will all contribute to an increase in the silt load.

Extent: Local

Duration: Short

Probability: Moderate

Significance: Low

Phase responsible for the impact:

Construction, Operation, Decommissioning, Closure

ASPECT: 8.2 SURFACE WATER

IMPACTS:

Nature of the impact:

Change in surface water quantity & quality

It is not expected that CHICKEN BROILER FACILITY and associated infrastructure operation (Site 8HA in total) will have any effect on the boundaries or the general water flow of the catchment. The CHICKEN BROILERS and associated infrastructure will not disturb the natural flow of any water course. Natural veld grasses provide a buffer to absorb runoff water and suspended solids in case of a flood.

Surface run-off should not be allowed through the planned CHICKEN BROILER FCILITY and associated infrastructure, from the surrounding environment and therefore come in contact with the chicken feed on the floor area of the CHICKEN BROILERS and associated infrastructure. and carried down-slope to the surrounding environment. Run-off water (clean water) from the roof area will be separated from the chicken feed storage areas. During construction Surface run-off control should be appropriately addressed in order to ensure that the run-off water from clean and dirty water environment is being separated.

The slope of the land is away from the D162 road through the broiler area towards the River. There will thus be no impact on the road from surface run-off that was changed by this activity. All storm water from the activity will be discharged towards the natural run-off towards the River.

Activity causing the impact

It is an operational objective to contain or divert all surface run-off from this area mainly due to pollution (sediment) potential. This will reduce the run-off quantity, although small in comparison with the drainage area in total.

Extent : Site

Duration: Long

Probability : Low

Significance: Low

Phase responsible for the impact:

Construction, Operation, Decommissioning, Closure

ASPECT : 9.1 GROUND WATER

IMPACTS:

Nature of the impact:

Reduction of groundwater quantity, lowering of groundwater level.

Ground-water level in proximity to the adjacent existing facility borehole is likely to recede to some extent due to the extraction of water from a borehole for utilization as drinking water, human consumption (ablution facilities) and production water for chicken broiler facility.

The new broilers shall have a continuous supply of potable water.

Activity causing the impact:

CHICKEN BROILER FACILITY and associated infrastructure, operation and the utilization of groundwater for potable (humans).

Extent: Site

Duration : Very Long

Probability : Moderate

Significance: Very low

Phase responsible for the impact:

Construction, Operation, Decommissioning, Closure

ASPECT: 10. AIR QUALITY

IMPACTS:

Nature of the impact::

Odour & Dust pollution :

Dust: Potential sources of dust emissions at an broiler facility are:
- unsealed roads;
- construction activities.
- The usage of the gravel road D162 that will create dust

Smoke emissions from heaters:- Low impact on air quality resulting from the burning from coal/wood/ during heating of air. The applicant will use wood chips as fuel that will reduce the emissions. See mitigation measures in the EMPR section of this document.
The source of oudour will be mainly from the chicken litter. See mitigation measures in the EMPR section of this document.

Activity causing the impact:

The CHICKEN BROILER FACILITY and associated infrastructure operation and associated activities in combination with natural causes.

The 3 trucks a day that will use the D162 gravel road for the transportation of chickens and chicken feed will create dust on the road.

Extent: Site

Duration: Very Long

Probability: Definite

Significance: Low

Phase responsible for the impact:

ASPECT: 11. NOISE POLLUTION

IMPACTS:

Nature of the impact:

The CHICKEN BROILER FACILITY and associated infrastructure Itself is located in rural landscape with the closest dwelling that of the owners house.

Noise: The chicken farm facility will be a source of noise within the direct worker environment. The facility will consist of 12 enclosed houses. The most noise will be generated from the extractor fans on each of the houses. The mitigation will be discussed in the EMPR section of this document.

Activity causing the impact:

The CHICKEN BROILERFACILITY and associated infrastructure, operation and associated activities in combination with natural causes.

Extent: Site

Duration: Very Long

Probability: Definite

Significance: Low

Phase responsible for the impact:

Construction, Operation, Decommissioning, Closure

ASPECT: 12. ARCHAEOLOGICAL AND CULTURAL SITES

IMPACTS:

Nature of the impact:

None. This is a planned chicken broiler facility and associated infrastructure and the surface area has already been disturbed by previous agricultural (grazing) activities.

No buildings or graves could be found on the (8 HA in total) site for the planned broiler operation.

Activity causing the impact:
Planned broiler operation

Extent: Site

Duration ----

Probability-------

Significance: No impact

Phase responsible for the impact:

Construction, Operation, Decommissioning, Closure

ASPECT: 13. SENSITIVE LANDSCAPE

IMPACTS:

Nature of the impact:

No Sensitive landscapes , wetlands are present on the demarcated application area.

Activity causing the impact: None

Extent

Duration

Probability

Significance: No impact

Phase responsible for the impact:

Construction, Operation, Decommissioning, Closure

ASPECT : 14.VISUAL ASPECTS

IMPACTS:

Nature of the impact:

Visual impact created by listed surface infrastructure.
The chicken broiler houses and associated infrastructure will be visible from a distance from the neighbouring dwellings and will be visible from the gravel road. There is a good coverage of trees and vegetation between the site and the gravel road. The broilers will be visible from the entrance road to the farm of the neighbour Mr. Harper. Mitigation measure addressed in the EMPR section.

The surrounding farms are already occupied by houses, storage facilities and there are existing farm buildings on this farm owned by the applicant.

Activity causing the impact:
Existing surface infrastructure associated with the BROILERS and associated infrastructure facility.

Extent: Site

Duration: Very Long

Probability: Definite

Significance: Low

Phase responsible for the impact:

Construction, Operation, Decommissioning, Closure

ASPECT: 15. SOCIO-ECONOMICS

IMPACTS:

Nature of the impact:

Increase in Socio – economic activity at local & regional level.

Additional employment 23 job opportunities during the construction phase of the broiler project.

Additional employment 24 opportunities (created at the CHICKEN BROILER FACILITY and associated infrastructure facility.

In the long term R20 million will be contributed to the KwaZulu-Natal Province growth domestic product.

Activity causing the impact:

Additional employment opportunities created. During construction and operation of the CHICKEN BROILERS.

Extent: Local

Duration: Long

Probability: Definite

Significance: Moderate positive

Phase responsible for the impact

Construction, Operation, Decommissioning, Closure

ASPECT: 16. INTERESTED & AFFECTED PARTIES

IMPACTS:

Nature of the impact:

Impact of activities on I&AP's

- Temporary loss of (8 HA in total) to utilization of the area for grazing purposes. The long-term benefits far out-weight the current benefits from the current use.
- This is a planned chicken broiler facility and associated infrastructure that needs to continue his activities to the benefit of the owner and current job opportunities.
- Impacts in terms of mainly visual, odour, noise, and the road on the neighbours. All environmental impact that is expected could be appropriately mitigated (See Environmental management plan).

Activity causing the impact

Planned chicken broiler facility and associated infrastructure.

Extent: Local

Duration: Long

Probability: High

Significance: Low

Phase responsible for the impact:

Construction, Operation, Decommissioning, Closure

viii) The possible mitigation measures that could be applied and the level of risk.

The mitigation measures and technical management action plans which address potential impacts are discussed below. Please see section below for more detail.

DETAILED ENVIRONMENTAL MANAGEMENT PROGRAMME (EMP) FOR THE CONSTRUCTION AND OPERATION OF an BROILERS

CHICKEN BROILER FACILITY NAME & LOCATION: WAGENBEETJIES DRAAI

B. ENVIRONMENTAL MANAGEMENT OR MITIGATION MEASURES, ASPECTS OF THE ACTIVITY, RESPONSIBLE PERSONS, TIME PERIODS FOR IMPLIMENTATION

1.1 THE MANAGEMENT OF ENVIRONMENTAL IMPACTS

- Optimal utilization and maintenance of facilities in a well-planned manner.
- To take care that no new land surface, habitats of vegetation and animals are destroyed, disturbed or alienated unnecessarily.
- To contain and prevent any pollution (physical and chemical) from the chicken broiler operation within structures, facilities provided therefore.
- To ensure an effective surface run-off control system in order to deal with the separation of clean and dirty water environment.
- The sustainable and responsible utilization (re-use) of all water resources and the prevention of pollution thereof.
- The sustainable rehabilitation of the chicken house sites in order to address all environmental impacts as far as practical.

1.2.IMPLEMENTATION PROGRAMME

1.2.1 INTRODUCTION

It is considered important to clarify some of the terms used in this section and, for this reason, these terms are defined below:

Decommissioning - The decommissioning of an area commences after the cessation of broilers activities in that area and terminates with closure. In the intervening period between the commencement of decommissioning and closure, a period of aftercare and/or maintenance may be imposed.

Topsoil – Means the layer of soil covering the earth and which provides a suitable environment for the germination of seed, allows the penetration of water, is a source of micro-organisms, plant nutrients and in some cases seed.

Subsoil – Those layers of soil and weathered rock immediately beneath the topsoil that overlay the hard rock formation.

Rehabilitation - "Rehabilitation" is the restoration of a disturbed area to a landform and productivity, which are in unison with the landform, and productivity of the locality before the disturbance took place. It is further intended that the plant community, which is established, should develop to be a stable and self-sustaining plant community that will adapt to the vegetation or land usage of the area. Thus, more attention is given to the quality of the result of re - vegetation. This quality is measured in terms of productivity, landscape, diversity and resemblance to the plant and animal community of that area. (Tomlinson, 1984.)

1.2.1.1 MANAGEMENT/ MITIGATION MEASURES/ ACTION PLANS:

Topography

Impact 1	* Change in landform: The existing topography is described as flat and the majority of infrastructure required for the project would have an impact on topography.
Activity responsible for the impact	Construction and operation of broilers and associated activities
Management/Mitigation measures	Closure of the facility: Rehabilitation of the broilers site in such a way that it would blend in with the surrounding landscape and allow normal surface drainage to continue.

Soil

Impact 2	This is a planned broiler facility and associated infrastructure. The surface area is being characterized by a thick layer of topsoil. The topsoil have been impacted on by existing farm activities.
Activity responsible for the impact	The broilers operation.
Management/Mitigation measures	Prior to the construction of infrastructure 30cm topsoil will be removed and stockpiled and probable be used as surface run-off structures, etc. The surface of any new areas to be disturbed must be kept to a minimum. The clearing of soil surface areas would be restricted to what is really necessary for the construction of infrastructure.

Soil

Impact 3	The establishment, construction, operation and eventually rehabilitation (demolition) of listed structures such as the access roads, BROILERS and associated infrastructure (parking area covered entirely by paving), movement of vehicles cause compaction of soil. In the same time a certain surface area is therefore alienated.
Activity responsible for the impact	Site preparation for broilers and the construction, operation of listed infrastructure
Management/Mitigation measure	The surface of any new areas to be disturbed must be kept to a minimum. The clearing of soil surface areas would be restricted to what is really necessary for the construction of infrastructure. The surface area alienated would be restricted within the (8 HA in total**).** This area will be fenced-off (Each broiler house will be fenced-off).

Soil

Impact 4	Soil erosion : Due to the fact that certain surface areas (broilers and direct surrounding area), access roads would become compacted and this would lead to lesser infiltration of rainwater and more run-off that could cause erosion on bare disturbed surfaces (including manure covered surfaces). Erosion would always be possible until such time a vegetation cover is provided during rehabilitation phase.

Activity responsible for the impact	Surface compaction due to broilers associated activities taking place.

Soil

Impact 5	Potential of soil contamination. This is a planned BROILERS and associated infrastructure. The soil within an surface area of (8 HA in total) has already been impacted on by the presence of manure from cattle grazing in on the site and farm yard activities. The soil of the BROILERS and associated infrastructure will be covered by 14 broiler houses and cement paving that will form an impermeable layer that will prevent soil contamination from oil/diesel spillage.
Activity responsible for the impact	The broilers may contaminate soil due to the presence and built-up of manure and bad management. Bad surface water management may divert contaminated run-off water on soil and thereby contaminating it.
Management/ Mitigation Measures	Chicken manure will be removed after each cycle by H& K (PTY) Ltd a company that specialized in the cleaning of broiler houses. H & K does have a Waste Management License DC 22/WML/0052/2014 for an existing Chicken Trans – Loading site. The litter removed from the site is immediately disposed of, off-site as fertilizer to Sugar Cane farming operations in the greater Wartburg, Dalton and Eston farming areas. See confirmation letter attached as APPENDIX 6. No stockpiling of manure will be done and after the broiler houses will be cleaned of manure it will be taken away immediately by the contractor. There will thus be no impact on the neighbours caused by the manure.

Land capability

Impact 6	Permanent loss of land capability to support grazing. The small area (8 HA in total) where the infrastructure such as the BROILERS and associated infrastructure. facility, etc. will thus be alienated , until the BROILERS and associated infrastructure. facility is being demolished and rehabilitated.
Activity responsible for the impact	The construction of listed infrastructure such as broilers, etc. The land capability of the infrastructure covered area will be totally destroyed.
Management/Mitigation measure	The disturbance of grazing land must be restricted (kept to a minimum) to the planned active chicken broilers site only. Take care that roads needed area restricted 1 road to enter the area. If new land is used for roads to enter the area it must be done in consultation with EDTEA.

Land use

Impact 7	Permanent loss of land capability to support grazing. The small area (8 HA in total) where the infrastructure such as the BROILERS and associated infrastructure, etc. will thus be alienated, until the BROILERS and associated infrastructure facility is being demolished and rehabilitated.
Activity responsible for the impact	The construction, operation of broilers and associated listed infrastructure.
Management/Mitigation measures	The disturbance of grazing land must be restricted (kept to a minimum) to the planned active chicken broiler site. Take care that roads needed area restricted 1entrance/road to enter the area. If new land is used for roads to enter the area it must be done in consultation with EDTEA.

Vegetation

Impact 8	This is a planned chicken broiler facility and associated infrastructure, where initially vegetation clearance, disturbance, trampling by the cattle and farm yard activities within the site boundaries already has taken place. Destruction of habitats for vegetation. The current land use management will persist and as such the planted pasture grasses will take place. This being the case the area need to be re-planted which will further decrease grass biodiversity on site. Due to a disturbed ecosystem, bare ground and spreading of exotics can follow within a confined area if the facility is not utilized for cattle for some time. Surface areas possible disturbed is only restricted to (Site 8 ha in total). The area of the development is located in the Cumberland Crest Ecosystem, however none of the ecosystem components occur on this site
Activity responsible for the impact	The site preparation, construction of listed infrastructure will cause destruction of habitats for vegetation. Due to a disturbed ecosystem, bare ground and invasion of exotics could further spread.
Management/Mitigation measures	To take care that no new or unnecessary destruction of habitats, other than the chicken broiler site should take place. Develop and implement an invasive and alien control programme to control the spread of weeds and other invasive species. Eradicate exotic weeds and invader species if it invades the terrain. All illegal invader plants and weeds shall be eradicated as required in terms of Regulation 15 & 16 of the Act on Conservation of Agricultural Resources, 1983 (Act no. 43 of 1983) which list the plants. The areas where the various chicken houses as well as the areas around the boundaries of the development will be planted with a grass seed mix that will contain grasses typical to the area. In addition indigenous thorn trees typical to the KwaZulu Natal Hinterland Thornveld vegetation type will be planted along the northern and southern boundaries of the development. Even though there will be not loss of any component of the Cumberland Crest Ecosystem, the areas between the various chicken houses as well as the areas around the boundaries of the development will be planted with a grass seed mix that will contain grasses typical to the ecosystem

Wildlife

Impact 9	Wildlife or wildlife habitat destruction /change / disturbance It could then be assumed that from that time domestic animals such as cattle, sheep, etc. have been introduced to this area. The habitat for wildlife has changed dramatically due to

	human intervention and the construction of man-made features such as broilers, agricultural activities of lands, etc. Some small animals could possible still be found that has adapted to the conditions.
Activity responsible for the impact	The flora which normally serves as habitat for animals would be destroyed during site preparation. The increase in activity will temporarily scare other animals.
Management/Mitigation measures	Rehabilitation of the site at closure.

Surface water

Impact 10	Increased silt load
Activity responsible for the impact	The clearance of vegetation and the traffic on access roads will all contribute to an increase in the silt load on the broilers area.
Management/Mitigation measure	Storm water control measures must be implemented to divert clean water away from the site and keep contaminated water contained. Water control structures must be well designed and constructed to ensure a minimum down wash of topsoil. Vegetation disturbance must be as little as possible.

Surface Water

Impact 11	Change in surface water quantity & quality: It is not expected that the chicken broiler houses and associated infrastructure operation (8 HA in total) will have an effect on the boundaries or the general water flow of the catchment. A storm water berm wall will be constructed on the north eastern side between the broiler site and the D162 gravel road in order to divert any storm water around the active site back to the natural flow towards the Umgeni River. The CHICKEN BROILERS and associated infrastructure will not disturb the natural flow of any water course. Natural veld grass provides a buffer to absorb runoff water and suspended solids in case of a flood. Surface run-off should not be allowed through the planned BROILERS and associated infrastructure, from the surrounding environment and therefore come in contact with the chicken feed on the floor area of the BROILERS and associated infrastructure and carried down-slope to the surrounding environment. The water from cleaning the broiler houses will be directed into a permanent cement channel from each house to words a small settling pond on the south-western boundary of the broiler site. Run-off water (clean water) from the roof area will be separated from the chicken feed storage areas. The run-off from the roofs can be accumulated in storage tanks and used. Access water from the roof and between the broiler houses will be channelled back to the natural surface drainage towards the river. This will reduce the run-off water. During construction Surface run-off control should be appropriately addressed in order to ensure that the run- off water from clean and dirty water environment is being separated.
Activity responsible for the impact	It is an operational objective to contain or divert all surface run-off from this area mainly due to pollution (sediment) potential. This will reduce the run-off quantity, although small in comparison with the drainage area in total.

Groundwater

Impact 12	Reduction of groundwater quantity, lowering of groundwater level. Reduction of groundwater quality The broilers and associated infrastructure. Is not likely to impact on local ground-water quality. The water will be used also for water supply to the ablution facility for mainly potable/wash water for workers.

Activity responsible for the impact	Chicken Broilers operation and the utilization of groundwater for potable (chickens, humans).
Management/Mitigation measure	Water will be extracted from the borehole will be restricted to what is really necessary and stored in the existing storage dam and flowing with gravity to a JOJO tank at each individual chicken broiler house. Unnecessary spillages should be restricted.

Air quality

Impact 13	Odour & Dust pollution : Dust: Potential sources of dust emissions at an broiler facility are: • unsealed roads; • construction activities. Smoke emissions from heaters:- Low impact on air quality resulting from the burning from coal/wood/domestic waste during heating of air. Dust: This project with the additional 3 trucks a day that will transport the chickens and feed to the site will be using the current existing D162 gravel road. The usage of this road will create accumulative dust impact. This will be mitigated by wetting the road on daily basis with spraying water with sprayers from an existing irrigation line running next to the road. The dust will be monitored especially in dry periods and activate the sprayers whenever dust is a problem on the road. The spraying will be done on ±1km of the road before and up to the entrance to the broiler site. Odour: All dead chickens in the broilers will be removed in a daily basis and stored in a dedicated freezer. Once a week the freezer will be emptied and chickens taken to the adjacent crocodile farm to be used as feeding for the crocodiles. See Annexure 3 for confirmation letter. All the manure will be removed every six weeks when the cycle ends. Controlling of flies in order not to create a breeding place that can be a nuisance to the neighbours. No stockpiling of manures on site. Removal of manure to the cultivated areas for broad casting on cultivated fields. Removal of dead chickens on daily basis for chicken broiler house. Proper handling of dead chickens to place in freezer immediately and taken to the crocodile farm once in two weeks. Introduce sniff testing to managers to do daily in order to prevent major oudour problems. Check broiler temperatures daily to ensure optimization. Check bedding moisture content daily.
Activity responsible for the impact	The broilers operation and associated activities in combination with natural causes.
Management/Mitigation measures	Surface area/ access roads will be wetted with a water tanker during construction phase. The chicken farm facility is an enclosed buildings that will not emit any dust into the surrounding environment. Use wood and coal with a low sulphur content. Management of the demand for heating must be managed in such a way that the heating systems must be used optimally. Dead chickens removed daily and stored in freezer. No stockpiling of manure at broiler site. All removed manure will be taken to the cultivated fields to be used as fertilizer.

	Manage the controlling of flies effectively.

Visual aspects

Impact 14	Visual impact created by listed surface infrastructure: The BROILERS and associated infrastructure will be visible from a distance from the neighbouring dwellings and visible from the provincial road. Already located adjacent to the site is the Escom power line. The surrounding farms are already occupied by houses , storage facilities, chicken farm buildings, etc.
Activity responsible for the impact	Existing surface infrastructure associated with the broilers.
Management/Mitigation measures	During the operational phase, the broilers activities will be concealed from the neighbouring residents by means of the initial constructed newly planted a windbreaks. During the construction phase trees will not be removed if not on actual construction area. To keep as many as possible trees in tact the will be a natural barriers to mitigate the visual impact. Visual impact would be addressed by means of; * trees in order to create a visual screen; * removal of any building, scrap, waste, etc. that would otherwise contribute to a negative visual impact. Visual impact; The construction of the new broiler houses will have an impact on the neigbours and specifically Mr. Harper next door. The following will be implemented to soften this impact: Keeping the natural vegetation between the houses and the gravel road intact. Plant fast growing trees between the houses and the entrance of \Mr. Harper, even before construction starts. Introduce bigger trees from the beginning . Paint the roofs of all building with green colour that will reduce the visual impact.

Socio-economics

Impact 15	Increase in Socio – economic activity at local level Additional employment opportunities created. * 23 workers during construction phase and * 24 workers during operational phase.
Activity responsible for the impact	The broiler operation.
Management/Mitigation measures	The provision of worker housing facilities with the necessary water power needs. This is already in place.
Time periods for implementation	Done and on-going.

Interested and affected parties

Impact 16	Impact of activities on I&AP's Temporary loss of (8 HA in total) to utilization of the area for grazing/crop cultivation purposes. The long-term benefits far out-weight the current benefits from the current use. This is a planned broiler and associated infrastructure that needs to continue his activities to the benefit of the owner and current job opportunities. All environmental impact that is expected could be appropriately mitigated (See Environmental management programme report (EMPr (Part B)).
Activity responsible for the impact	Broilers and associated infrastructure
Management/Mitigation measures	If any problem should arise, meetings will be held with the landowners and affected parties to consult them on certain matters like pollution, etc. An incident and complaint register will be kept on site where any such matters will be noted.

(ix) Outcome of site selection matrix

Alternative is not applicable. The current land use is natural grazing used as part of the farming activities. The option to explore the possibility for broilers is an alternative land use. The applicant, Nyala Farm CC is not interested in any other alternative land use over this land aside of broilers which is the most cost effective. Please note that no additional infrastructure will be established, and therefore no alternatives for the location of infrastructure were identified

(x) If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such:

An alternative site could not be identified as the area needed for the broiler houses is only suitable on the preferred site which will be the furthest away from the natural water course and will have the smallest impact on the cultivated areas. The current land is used for natural grazing of cattle. The current identified sites are next to water and ESCOM point thus no further layout costs and disturbance for water and electricity points to another site. Thus the option to establish new chicken houses will be the only compatible agricultural alternative land use. The demarcated site is only nearby to the gravel road for transportation and there is an existing access road linked with the gravel road. With this site it will not be necessary to construct any new roads. The applicant (owner of the piece of land), is not interested in any other alternative land use.

(xi) A concluding statement indicating the preferred alternatives, including preferred location of the activity;

After all the pre-investigations on the farm and the possible locations it was confirmed that only one area can accommodate the houses with limited impact on the land capability and the surrounding environment. The application area applied for is only 8 hectare thus the development location is limited to this area.

i) FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS AND RISKS THE ACTIVITY WILL IMPOSE ON THE PREFERRED SITE (IN RESPECT OF THE FINAL SITE LAYOUT PLAN) THROUGH THE LIFE OF THE ACTIVITY

(i) A description of all environmental issues and risk that were identified during the environmental impact assessment process See Table 9

Environmental Component	Topography
Environmental Issues and risk identified	
• As the new chicken infrastructure will be part of the existing farm, where there are existing farm buildings adjacent to the demarcated area thus the impact on topography is rated as very low. The broilers structure will also not be high in height • No environmental issues were identified as the new structure will be part of existing infrastructure. • The risk will be very low as the new structure will be part of existing farm activities.	

Environmental Component	Soil
Environmental issues and risks identified	
• The impact of compaction on soil is current as impacted upon by farming activities. • The new infrastructure will not bring new environmental issues on soil as the alienation of this 8 hectare will be the biggest impact on soil. Erosion is not identified as a risk as the area is flat and most of the area will be covered by infrastructure. • The risk can be regarded as low as the soil will be covered by the new buildings and infrastructure but it will not change the ability and characteristics of the soil itself. • Existing farming access roads will be used.	

Environmental Component	Land Capability
Environmental Issues and risks identified	
• The issues raised under land capability will be the total alienation of these 8 hectares for land from agriculture. But the fact that it was already part of the farm activities thus not used for agricultural grazing or cultivation and as the area is very small, only 8 hectare form the bigger farm portion this impact will be very low. • The risk on land capability will be low as the area will be alienated (small area of only 8 hectares) now for the time that the infrastructure is there, but if the infrastructure is removed and area rehabilitated at end of the period, the land capability will be for agricultural use again. • The disturbance of land must be restricted (kept to a minimum) to the planned fenced-off, active activity site only which will reduce the risk and impact on land capability.	

Environmental Component	Land Use
Environmental issues and risks identified	
• No environmental issues identified as this area will be permanent lost for land use of agricultural grazing for the time of that the activity is active and till the time that the infrastructure is been removed. • The disturbance of land must be restricted (kept to a minimum) to the planned activity area only.	

Environmental Component	Vegetation
Environmental issues and risks identified	
• The current status of vegetation on the application area is limited to annual and pioneer species as this area is part of the current natural grazing. There will be very low impact on vegetation as the area is very small and the sparse vegetation is not of high quality for agricultural grazing. • The risk will be very low as the noted vegetation has been disturbed already and not indigenous vegetation that will be removed.	

Environmental Component	Wildlife
Environmental issues and risk identified	
• No mammals of significance were identified during any of the three site visits by the specialist or in any of the databases that were interrogated. The occasional presence of Sylvicapra grimmia (Grey Duiker) and Tragelaphus sylvaticus (Bushbuck) are expected. • It must be noted that this specific application area was used for many years for planting of pastures and in use as a agricultural farm with various agricultural activities that have had already an impact on the wildlife. • The new facility itself will hold no risk for wildlife as it is on only 8 hectares. • The workers will be clearly informed that game catching, traps, snares, poaching and any other unnecessary disturbance of animals will be a disciplinary offence.	

Environmental Component	Surface Water (quality)
Environmental issues and risks identified	
Change in surface water quality: • There were no issues noted regarding surface water as no open water is on the application area that can be effected. The Umgeni River is flowing 487m south-west of the application area and there proper storm water control especially for run-off from the site needs to put in place. • As the facility is not in a natural water course or adjacent the risk of affected the quality of surface water will be low. The risk will be of storm water to be directed around the new facility Storm water control measures must be implemented to divert clean water away from the active site and keep contaminated water contained.	

Environmental Component	Surface Water (quantity)
Environmental issues and risks identified	
• Mr. van Vuuren does have water registration for irrigation purposes from the Umgeni River and this might be used only when the borehole cannot supply. The quantity of surface water used will be very low and just used as a top up with the water from the borehole is not sufficient. • No risk of impacting upon the surface water quantity.	

Environmental Component	Ground Water (quality)
Environmental issues and risks identified	
• The floor of the chicken houses will be cemented and there will be no oil or diesel used or store on site thus impact on ground water quality will be very low. • Only chemicals to be used for the cleaning of the chicken broiler houses will be environmental friendly. • The risk of impact on ground water quality will be low as the only risk of nitrate contamination from the Septic tank drain system to be used for the toilets, but again the quantity will be so small for 24 people that it will have a very small impact if at all.	

Environmental Component	Ground Water (quantity)
Environmental issues and risks identified.	
• Water for the chickens and potable water will be used from the existing borehole on the farm that is currently in use. The additional use of ±150m³ a day will be a very small change in the current uses thus there will be low impact on water quantity.	

- The ground water in the existing borehole will be impacted upon very little by the new activity, thus the risk associated will be very low.

Environmental Component	Air Quality
Environmental issues and risks identified	
• Twelve heating units driven by wood chips will be used for heating of the chicken house mainly in winter time. The emissions into the air for six months of the year will have a low impact on the air quality. • The risk on negative impact on air quality will be low.	

Environmental Component	Visual Aspects
Environmental issues and risks identified	
• There will be a low impact on visual aspect as this chicken broiler houses will be an addition to the existing farm structures and building and it will be visible from the D162 gravel road and from the neighbour entrance. There are natural vegetation and trees that will serve as a natural screen • There will be no risk on visual aspect as it will be part of the existing farm infrastructure. • Inputs were received from Department of Roads and these instructions will be implemented in the EMP and is attached in Appendix 2.	

Environmental Component	Dust and Odour
Environmental issues and risks identified	
• The issue of odour will be mainly from dead chickens and stockpiling of manure. If not handles correctly this might be a problem to the neighbours. • Twelve heating units driven by wood chips will be used for heating of the chicken house mainly in winter time. The emissions into the air for three months of the year will have a low impact on the air quality. • The risk on negative impact on air quality will be low.	

Environmental Component	Interested and Affected Parties
Environmental issues and risks identified	
• The landowner is also the owner of the surrounding farm. The impact s on the neighbouring farms is regarded as low. The issues raised on the road, wild life security and the Umgeni River in the public participation process were addressed in the EMP. • The risk on interested and affected parties will be very low. • The issue of security was raised and this was rated as a low risk and impact. There will be 24 workers on site during working hours, only in the demarcated area of the broiler site. Only 6 – 8 will stay on site and be rotated with shifts. The rest of the workers will be transported on a daily basis to and their residences. • There will be 24 hour 7 days a week security guards at the entrance gate as well as patrolling the parameters of the broiler site. The presence of the security guards will be definitely a positive impact for the general security of this area as well as the neigbours especially in this uncertain times .	

J) ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK

Table 12: Identified Potentially Significant Impacts & Risks

NAME OF ACTIVITY	POTENTIAL IMPACT	(i) CUMULATIVE IMPACTS	(ii) SIGNIFICANCE	(iii) EXTEND AND DURATION	(iv) PROBABILITY OF THE IMPACT OCCURRING	(v) DEGREE TO WHICH IMPACT/RISK CAN BE REVERSED	(vi) DEGREE TO WHICH IRREPLACEABLE LOSS MAY OCCUR	(vii) DEGREE TOWHICH IMPACT/ RISK CAN BE MITIGATED
Construction of a new chicken houses facility and associated buildings and handling facilities/ infrastructure on an area of (8 ha) hectares. This facility will handle on average 50 000 of chickens/lay hens x 12 houses on any time.	1.1 Change in landform. Normal surface drainage will be disturbed at this specific point. Surface run-off will be diverted around the facility with topsoil earth walls.	Localized	Moderate -	Life of facility	High	Possible	Reversible	Fully Mitigated
	1.2 The establishment, construction, operation and eventually rehabilitation (demolition) of listed structures such as the access roads, broilers, cause compaction of soil. In the same time a certain surface area is therefore alienated. The surface area alienated would be restricted within the 8 ha.	Localized	High -	Life of facility	.High	Possible	Reversible	Fully Mitigated
	1.3 Soil erosion : Due to the fact that certain surface areas (broilers and direct surrounding area), access roads would become compacted and this would lead to lesser infiltration of rainwater and more run-off that could cause erosion on bare disturbed surfaces (including manure covered surfaces). Erosion would always be possible until such	Localized	Medium-	Life of facility	Medium	Possible	Reversible	Fully mitigated

Construction of a new chicken houses facility and associated buildings and handling facilities/ infrastructure on an area of (8 ha) hectares. This facility will handle on average 50 000 of chickens/lay hens x 12 houses on any time.	1.4 Permanent loss of land capability to support grazing. The small area (= 8 HA in total)where the infrastructure such as the BROILERS and associated infrastructure facility, etc. will thus be alienated , until the BROILERS and associated infrastructure facility is being demolished and rehabilitated.	Localized	High-	Life of facility (temporary)	High	Possible	Reversible	Full mitigated
	1.5 This is a planned BROILERS and associated infrastructure, where initially vegetation clearance, disturbance, trampling by the cattle. And farm yard activities within the site boundaries already have taken place. Destruction of habitats for vegetation. Due to a disturbed ecosystem, bare ground and spreading of exotics can follow within an confined area if the facility is not utilized for cattle for some time. Surface areas possible disturbed is only restricted to (8 ha in total).	Localized	Medium	Life of facility	Definite	Possible	Reversible	Fully mitigated

Construction of a new chicken houses facility and associated buildings and handling facilities/ infrastructure on an area of (8 ha) hectares. This facility will handle on average 50 000 of chickens/lay hens x 12 houses on any time.	1.6 Change in surface water quantity & quality: It is not expected that BROILERS and associated infrastructure operation (Sites 8 HA in total) will have an any effect on the boundaries or the general water flow of the catchment. The BROILERS and associated infrastructure will not disturb the natural flow of any water course. Natural veld grass provide a buffer to absorb runoff water and suspended solids in case of a flood. Surface run-off should not be allowed through the planned BROILERS and associated infrastructure, from the surrounding environment and therefore come in contact with the chicken feed on the floor area of the BROILERS and associated infrastructure and carried down-slope to the surrounding environment. Run-off water (clean water) from the roof area will be separated from the chicken feed storage areas. During construction Surface run-off control should be appropriately addressed in order to ensure that the run-off water from clean and dirty water environment is being separated.	None.	Medium	Life of facility	Medium	Possible	Reversible	Fully mitigated

Construction of a new chicken houses facility and associated buildings and handling facilities/ infrastructure on an area of (8 ha) hectares. This facility will handle on average 50 000 of chickens/lay hens x 12 houses on any time.	1.7 Reduction of groundwater quantity, lowering of groundwater level: Reduction of groundwater quantity, lowering of groundwater level. Ground-water level in proximity to the adjacent existing facility borehole is likely to recede to some extent due to the extraction of water from a borehole for utilization as drinking water, human consumption (ablution facilities). The new broilers shall have a continuous supply of potable water.	Localized	High	Life of facility	High	Possible	Reversible	Fully mitigated
	1.8 Odour & Dust pollution : . Dust: Potential sources of dust emissions at an broiler facility are: • unsealed roads; • construction activities. Smoke emissions from heaters:- Low impact on air quality resulting from the burning from coal/wood/ domestic waste during heating of air.	Localized	Moderate	Life of facility	Moderate	Possible	Reversible	Fully mitigated
	1.9.1 Generation of dust by vehicle movement on D162 gravel road	Air quality	Low -	Life of facility	Low	Possible	Reversible	Fully mitigated.

K) SUMMARY OF SPECIALIST REPORTS

Table 13: Specialist Reports

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS
WETLAND AND VEGETATION ASSESSMENT OF PORTION 13 OF THE FARM WAGEBEETJES DRAAI NO. 875 FT NEAR WARTBURG, KWAZULU-NATAL. SOURCE: The GCS Report (Ref. 21-0096) 14 Apr 2021 compiled by Magnus van Rooyen (See full Report attached in Appendix 5)	Based on the findings of the assessment it is the opinion of the Specialist that there are no reasons that the development should not be authorized in accordance with the specifications as presented in the assessment. The authorization must make provision for the various management and mitigation measures detailed in this report. SEE KEY FINDINGS (REFERENCE TO SECTION 12.1 OF GCS REPORT) AS SPELLED OUT UNDER SECTION L .

NOTE:

The application area was disturbed by agricultural activities.

L) ENVIRONMENTAL IMPACT STATEMENT

i) Summary of the key findings of the environmental impact assessment;

12.1 Key findings of the assessment (SOURCE: The GCS Report (Ref. 21-0096) 14 Apr 2021 compiled by Magnus van Rooyen (See full Report attached in Appendix 5)

The following key findings were made during the assessment and will be used to provide a reasoned opinion on whether the development should proceed or not.

12.1.1 Wetlands and watercourses

No wetland or watercourse was identified on the property. The closest watercourse is located 487m from to the south - west of the development boundaries. No aquatic features will be No aquatic features will be impacted upon by the proposed development.

12.1.2 Vegetation

The desktop assessment identified the presence of a single vegetation type as per the SANBI classification. This vegetation type is classified as KwaZulu-Natal Hinterland Thornveld (SVs3). Furthermore, the National Environmental Management: Biodiversity Act (Act No. 10 of 2002) has indicated the presence of the Cumberland Crest ecosystem within the property area, which is a critically endangered ecosystem. This ecosystem is directly associated with the identified vegetation type. The site visit has confirmed that the vegetation types on the property are limited to planted pastures and scattered thornveld both showing impacts associated with the current land use.

Characteristics of the KwaZulul-Natal Hinterland Thornveld vegetation type is therefore absent on the site and as a result so is the Cumberland Crest ecosystem.

Provision will be made in the rehabilitation of the areas (along the northern and southern boundaries in particular) for the planting of species typical of the KwaZulu-Natal Hinterland Thornveld vegetation type. This will potentially facilitate the development of an ecological corridor through the property that is currently absent.

12.1.3 Avifauna

No Important Bird Areas (IBA) were found to overlap the property. The bird species that were observed during the three site visits were all common in nature and the absence of the area's classification as an Important Bird Area confirms that there are no avifaunal species of concern occurring on the site.

12.1.4 Mammals

No mammals of significance were identified during any of the three site visits or in any of the databases that were interrogated. The occasional presence of *Sylvicapra grimmia* (Grey Duiker) and *Tragelaphus sylvaticus* (Bushbuck) are expected.

12.1.5 Reptiles

No reptiles of significance were identified during any of the three site visits or in any of the databases that were interrogated. It is however anticipated that reptiles will frequent the site, but none of these are anticipated to be endangered.

12.1.6 Amphibians

No amphibians of significance were identified during any of the three site visits or in any of the databases that were interrogated. It is however anticipated that reptiles will frequent the site, but none of these are anticipated to be endangered.

12.1.7 Conservation significance

The KwaZulu-Natal Bioregional Sector Plan (2014) was interrogated to determine the overall conservation significance of the Nature's Best Development site. The sector plan indicated the presence of a critical biodiversity area within the property. This critical biodiversity area is directly linked to the presence of the Cumberland Crest ecosystem discussed above. This ecosystem is not considered to the present on the property due to the impacts on the vegetation on the site. Provision will be made in the rehabilitation of the areas (along the northern and southern boundaries in particular) for the planting of species typical of the KwaZulu-Natal Hinterland Thornveld vegetation type. This will potentially facilitate the development of an ecological corridor through the property that is currently absent.

12.1.8 Buffer determination

Provision in the design and layout of the development site boundaries for the implementation of a 100m buffer from any aquatic features. No additional buffers are required.

12.1.9 Species of special concern

No species of special concern were identified to be present on the property.

L) ENVIRONMENTAL IMPACT STATEMENT (CONTINUE)

ii) Summary of the key findings of the environmental impact assessment;

The chicken broiler house facility is definitely going to have an impact on the environment. The main impact relates to topography, soil, vegetation, and land use and land capability, surface and ground water and air quality. This is an 8 ha operation and for the next 30 years only a small portion of the farm will be temporarily alienated.

The conservation of topsoil is of utmost importance and therefore in order to ensure a sustainable land use again on the 8 ha. Some topsoil will be removed and to be removed and stored in in berm walls to divert any surface run-off during a rainfall event around the broiler facilty. Other environmental impacts relates to the day to day operation that could easily be managed, such as dust and noise.

Alternative A (preferred alternative)

The proposed chicken broiler facility will have a definite impact on the environment but which could be managed as spelled out in the EMPr . Only 8 ha will be impacted and thus will be restricted at all times within fenced-off chicken broiler facility.

Chicken manure will removed from the houses after each cycle and immediately r
Transported from the site by the contractor. No stockpiling will take place.

Surface run-off control is an issue that needs attention throughout the operational phase of the facility. Containment of dirty run-off and diversion of run-off from the clean environment should be seen as a priority.

Water use from groundwater (borehole) should be restricted to what is really needed for 12 broilers. Alternative A (preferred alternative)

The main impact will be that of burning of wood chips for heating that will result in emissions into the air. This impact is regarded as an insignificant, low impact. This impact can't really be mitigated. Management of the demand for heating must be managed in such a way that the heating systems must be used optimally.

No significant impact that will impact significant negatively on the environment was identified on this project.

There is no reason why these broilers could not be constructed within the given surface area available. Access is good and farm dwellings are not located directly adjacent to the facility, but some distance away (500m and more). The need for food and jobs area of high priority in the area.

iii) Final Site Map (See Map 1B)

See **Appendix 1(B).**

iii) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives

Alternative A (preferred alternative)

The proposed chicken broiler facility will have a definite impact on the environment but which could be managed as spelled out in the EMPr . Only 8 ha will be impacted and thus will be restricted at all times to the area within fenced-off chicken broiler facility.

Chicken manure will be removed from the houses after each cycle and transported away from the site by the contractor immediately.. Dead chickens will be removed from the broilers houses on a daily basis and taken to the nearby Crocodile farm for feeding of the crocodiles. A proper management plan for the control of flies will be in place.

Surface run-off control is an issue that needs attention throughout the operational phase of the facility. Containment of dirty run-off and diversion of run-off from the clean environment should be seen as a priority.

Water use from groundwater (borehole) should be restricted to what is really needed for the 12 broiler houses. Alternative A (preferred alternative)

The main impact will be that of burning of wood chips for heating (in extreme weather conditions) that will result in emissions into the air. This impact is regarded as an insignificant, low impact. This impact can't really be mitigated. Management of the demand for heating must be managed in such a way that the heating systems must be used optimally.

No significant impact that will impact significant negatively on the environment was identified on this project.

It is important to note that these 12 broilers will be construct in phases over a period of 4 years, thus management and mitigation can be changed or adapt as needed before all 12 broilers are in production. There is no reason why these broilers could not be constructed within the given surface area available. Access is good and farm dwellings are not located directly adjacent to the facility, but some distance away. The need for food and jobs area of high priority in the area.

According to : " The GCS Report (Ref. 21-0096) 14 Apr 2021 compiled by Magnus van Rooyen (See full Report attached in Appendix) also just the following ***Identified impacts and their significance pre- and post-mitigation.*** Table 12-1 below provides a summary of the impact identified and their significance ratings pre- and post-mitigation.

Table 12-1: Summary table of the significance of identified impacts

Project phase	Nature of impact	Significance rating (pre-mitigation)		Significance rating (post-mitigation)
Construction	Loss of indigenous grass vegetation.	Medium Negative		Low Negative
Construction	Loss of Cumberland Crest ecosystem.	Low Negative		Low Negative
Construction	Spreading of alien invasive plant species.	Low Negative		Low Negative
Construction	Loss of aquatic habitats (wetlands and watercourses).	No impact		No Impact
Construction	Contamination of the area by petrochemical spillages.	Medium Negative		Low Negative
Construction	Contamination of the area by construction waste.	Medium Negative		Low Negative
Construction	Contamination of the area by domestic waste.	Medium Negative		Low Negative

Project phase	Nature of impact	Significance rating (pre-mitigation)		Significance rating (post-mitigation)
Construction	Contamination of the area as a result of leaking portable toilet facilities.	Medium Negative		Low Negative
Construction	Siltation of the watercourses as a result of erosion from the construction areas	Low Negative		Low Negative
Operational	Spreading of alien invasive vegetation.	Medium Negative		Low Negative
Operational	Disruption of an ecological corridor.	No Impact		No Impact
Operational	Contamination by domestic waste generated by the operations.	Low Negative		Low Negative
Operational	Contamination by leaking sewage from the ablution facilities on the site.	Low Negative		Low Negative
Operational	Leakages from the evaporation pond that will serve to capture effluent wash-water.	Low Negative		Low Negative
Operational	Changes to the hydrological regime on the property as a result of stormwater management.	Low Negative		Low Negative

m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr (SEE PART B)

The main closure objective of the applicant is to rehabilitate the entire chicken broiler project site in such a way to ensure that the man-made topographical landscape would be rehabilitated toward agricultural use and to blend in with the surrounding landscape and not pose a safety hazard to humans and animals, while at the same time allow for alternative land uses. Establish a self-sustaining and stable vegetation cover in order to mitigate the visual impact, to control erosion and to create some habitat for animals. The rehabilitated environment also needs to be aesthetically acceptable according to the principle of BPEO. The applicant will ensure that the Operation/Sites are:

- Neither a danger to public health and safety nor to animal health and safety;
- Not a source of any pollution;
- Stable (ecological and geophysical);
- Rehabilitated to the state that is suitable for the predetermined and agreed land use (grazing);
- Compatible with the surrounding biophysical environment;
- A sustainable environment;
- Aesthetically acceptable;
- Not an economic, social or environmental liability to the local community or the state now or in the future.

n) Aspects for Inclusion as Conditions of Authorisation.

None

o) Description of Any Assumptions, Uncertainties and Gaps in Knowledge.

None

p) Reasoned Opinion As To Whether The Proposed Activity Should Or Should Not Be Authorised

(i) Reasons why the activity should be authorized or not.

This activity will have only low and very low impacts and no significant impacts were identified. The concerns from the adjacent neighbours were the impact on the gravel road, wildlife, security, odour and noise which can be mitigated. These chicken broilers activities will have no significant impacts on them or their surrounding environment.

The report by the Specialist concluded that " Based on the findings of the assessment it is the opinion of the Specialist that there are no reasons that the development should not be authorised in accordance with the specifications as presented in this assessment. The authorisation must make provision for the various management and mitigation measures detailed in this report." SOURCE: The GCS Report (Ref. 21-0096) 14 Apr 2021 compiled by Magnus van Rooyen (See full Report attached **in Appendix 5)**

(ii) Conditions that must be included in the authorisation

None

q) Period for which the environmental authorisation is required.

48 months in total (Construction phase).

R) UNDERTAKING

UNDERTAKING

I, D.E. Erasmus, the undersigned and duly authorised thereto by DERA Omgewingskonsultante (PTY) Ltd hereby confirm:

- ✓ **the correctness of the information provided in this report;**
- ✓ **the inclusion of comments and inputs from stakeholders and I&AP's;**
- ✓ **the inclusion of inputs and recommendations from the specialist reports where relevant and where applicable and;**
- ✓ **all information provided to the interested and affected parties a true reflection of this document.**

Signed at Klerksdorp on this day 27 July 2021.

……..

Signature of EAP

S) FINANCIAL PROVISION

Not applicable

(i) Explain how the aforesaid amount was derived.

Not applicable

(ii) Confirm that this amount can be provided for from operating expenditure

Not applicable

T) SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

This activity will have no impact on archaeological structures.

U) OTHER MATTERS REQUIRED IN TERMS OF SECTIONS 24(4)(A) AND (B) OF THE ACT

None

PART B

Note: As compiled in terms of the NEMA EIA Regulations (Appendix 4 of the regulations)

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT (EMPr)

ACTIVITY: CHICKEN HOUSE AND ASSOCIATED INFRASTRUCTURE.

APPLICABLE SECTION:

PORTION	**FARM**	**HECTARES**
Remaining extent of Portion 13	WAGENBEETJIES DRAAI 875 FT	Site 8ha
DISTRICT		
PIETERMARITZBURG uMshwathi Local Municipality		

PART B

Content of environmental management programme (EMPr)

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. An eenvironmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include—

a) details of—

(i) the EAP who prepared the report; and

(ii) the expertise of the EAP, including a curriculum vitae;

The EAP Mr. Daan Erasmus has a National Diploma in Agriculture Resource Utilization and a Baccalaureus Technologiae degree in Agricultural Extension.

Yes, see C.V. (BAR PART A).

(b)Description of the Aspects of the Activity

This is a planned new chicken broiler facility on an area of 8 HA in total and will be in operation for the next 30 years. The 8 ha will be fenced off and does include the new chicken houses as well as associated infrastructure and buildings. The total area used for this activity will be 8 hectare. The site area will be demarcated and fenced off to operate on its own with a maximum footprint area of 8 ha. The entire area is currently part of the farm use for agricultural grazing. There is currently only an access road, borehole with water reservoir and no other infrastructure on the application area. Directly adjacent to the application area are a ESCOM lines and access roads. Construction of 12 new chicken broiler houses with dimensions of 15m x 120m, housing 50 000 chickens over a period of 4 years. A total area of 8 hectare will be demarcated and fenced off that will have the new chicken broilers with associated infrastructure like office building, store rooms and parking/loading bay. The application area will thus be for 8 hectare. Each broiler house will handle 50 000 chickens over a cycle of six weeks, where the grown chickens will be removed and transported to the slaughter house and replaced by new chicks. A new broiler house will be constructed as a steel structure with dimensions of 15m x 120m housing 50 000 laying hens and associated structures. The applicant is Nyala Farm CC of which Mr Hans Jansen Van Vuuren is the director and the landowner. The new identified area is currently used as natural grazing for agriculture, with natural grazing with signs of trampling and vehicle movement. In phase 1 the only the area where the broiler houses will be constructed will be cleared of vegetation. In phase 2 the chicken broiler houses will be constructed as a steel structure with sink roof. The floor foundations will be concrete. The broiler houses will have its own coal heating system. In phase 3 the new houses and associated buildings will be fenced off as a unit. The project duration will be four years as the intention is to build four houses each year. These houses will have very limited environmental impacts. A full public participation process has been undertaken.

c) Composite Map

(Provide a map (Attached as **an Appendix A (Map 2A))** at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the **environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers)**

See Appendix A

d) A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including—

(i) planning and design;
(ii) pre-construction activities;
(iii) construction activities;
(iv) rehabilitation of the environment after construction and where applicable post closure;
and
(v) where relevant, operation activities;

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc…etc…)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. planning & design, pre-construction, construction, rehab after construction, operational,	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. Noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc), E.g. Modify through alternative method. Control through noise control Control through management and monitoring Remedy through rehabilitation.	Management outcome /statement
Main activity that involves the following:					
1.1 Establishment (site preparation, vegetation clearance, topsoil removal and stockpiling) of proper access roads (upgrade existing road), storage area (temporary containers), Initial vegetation clearance, topsoil removal & stockpiling within the focus area.	Initial vegetation clearance, topsoil removal & stockpiling within the construction focus area.	Vegetation/Soil	Pre-Construction	The surface area is characterized by various soil depths. Any construction of infrastructure should be preceded by the removal of top 30cm of available topsoil and stockpiled.	• All topsoil (30cm) to be removed. • All activities as on plan and design • No additional disturbance outside application area. • Develop and implement an invasive and alien control programme to control the spread of weeds and other invasive species. Eradicate exotic weeds and invader species if it invades the terrain. All illegal invader plants and weeds shall be eradicated as required in terms of Regulation 15 & 16 of the Act on Conservation of Agricultural Resources, 1983 (Act no. 43 of 1983) which list the plants.

				According to the GCS Report (Appendix 5): An Alien Invasive Management Plan must be established and implemented for the operational phase of the development. This plan must be in place when the development goes operational. • The Alien Invasive Management Plan must make provision for the identification of all the alien invasive plant species on the property as well as the management and control measures to be implemented. • The implementation of this plan must be responsibility of the owner or operators of the development.	**According to the GCS Report (Appendix 5)** The limited amount of alien invasive plant species on the property attests to good management practices. It is encouraged that these practices continue through the construction phase of the development. This can be done by ensuring that the contractor is implementing the following measures: • The construction footprint must be clearly survey and demarcated before any construction of the components of the development is to commence. • This must be done to ensure that areas to be cleared limited to only the areas that are necessary. • The cleared areas must be regularly monitored for the establishment of alien plant species. These must be cleared when they appear. • If alien invasive plant species become a problem on the construction site, a formal Alien Invasive Management Plan must be set up and implemented. This plant must make provision for the identification and eradication of these species.

					• The rehabilitation of these cleared areas must commence as soon as practically possible after construction activities have ceased with the use of indigenous plant species.
1.2 Establishment of temporary chemical toilets.	Initial vegetation clearance, topsoil removal & stockpiling within the CONSTRUCTION SITE. Potential of soil/ surface and ground water contamination.	Vegetation/Soil/water environment	Pre-Construction and Construction	The surface area is characterized by various soil depths. Any construction of infrastructure should be preceded by the removal of top 30cm of available topsoil. According to GCS Report (Appendix 5): Only portable chemical toilets with a sealed reservoir will be allowed on site. • All portable chemical toilets must be located within the delineated development site as these boundaries make provision for a 100m buffer from any aquatic feature. • The capacity of the reservoirs in the portable chemical toilets must be monitored on a daily basis to ensure that they can be serviced timeously. • All removal of the collected sewage waste from the portable chemical toilets must be conducted by a registered service provider for disposal at a municipal waste water treatment facility.	• Encourage and manage the usage of the chemical toilet during pre-construction and construction. • Put the toilet as nearby as possible to the construction site for ease of use • Proper cleaning and maintenance of the chemical toilet in order to ensure hygienic conditions for users.

1.3 Provision of storage tanks for potable (drinking water) and water for the chickens	The water will be obtained from existing boreholes and therefore an additional use that will impact on the available water for agriculture activities also. Clearance of soil and vegetation for storage tank area (very small area of l5m x 5m)	Ground water/Vegetation	Construction/Operational	Clearance of vegetation only on the small area where the tanks to be erected. Water volumes should be recorded continuously to ensure compliance with the water use authorization for abstraction. The amount of water abstracted and stored should be restricted to the amount really required for the operation.	• The erection of storage tanks on the exact place according to planning and design. • The amount of water abstracted and stored should be restricted to the amount really required for the operation. • Check pipes for leaks on daily basis. • If possible fit storage tanks with float valve that prevent tank from overflowing and wasting of water • Water should be handled responsible as a scarce resource.
1.4 Provision of waste handling/disposal facilities (domestic & industrial waste bins.	Possible contamination/littering of the environment if not stored properly in bunded facilities/bins, drums etc. and handled responsible.	Soil/Water environment	Pre-construction Construction/Operational	All waste must be stored according to best practices and disposed at an authorized waste disposal facility. Chicken manure from cleaning the broiler houses will be stored outside the facility on the cultivated areas of the landowner where it will be used as fertilizer. Plan timings for spreading of manure not on weekends or public holidays , consider wind directions and location of sensitive receptors, treat manure if necessary. The dead chickens will be removed on a daily basis and to be collect by the crocodile farm once a week.	• Place bins that are clearly marked for domestic and industrial waste. • All waste material should be contained within the bins provided therefore. • Waste cement from construction will be used the upgrading of roads or other construction on the farm. • All empty cement bags will to be stored on site

				According to GCS Report (Appendix 4) ; Skips must be made available onsite into which all construction waste can be discarded. • All construction waste must be cleared from the site on a daily basis and placed in these skips. • The capacity of these skips must be monitored on a daily basis to ensure that a replacement skip can be arranged on the same day as the filled skips are removed. • The disposal of the content of these skips must be done at a municipal landfill site. * No dumping of construction waste on open areas on the property will be allowed. According to GCS Report (Appendix 4) ; A designated eating area must be established within the construction site. • Covered domestic waste bins must be present at the eating area to receive all the domestic waste generated by the labour. • The capacity of these domestic waste bins must be monitored on a daily basis to ensure that they are emptied timeously. • The domestic waste from these waste bins must be removed off site and disposed of at a municipal landfill site on a weekly basis or more regularly if the bins fill up quicker. A designated eating area must be	in a separate bin/drum and taken to the nearest waste disposal site once a week. • Daily inspections for dead chicken in the broiler house. • Daily removal thereof and stored in a dedicated freezer. • The dead chicken s will be removed daily to the Crocodile farm See confirmation letter attached as Appendix 3.

				established within the development site to be used by employees. • Covered domestic waste bins must be present at the eating area to receive all the domestic waste generated by the employees. The capacity of these domestic waste bins must be monitored on a daily basis to ensure that they are emptied timeously. • The domestic waste from these waste bins must be removed off site and disposed of at a municipal landfill site on a weekly basis or more regularly if the bins fill up quicker.	
1.5 Fencing –off active CHICKEN HOUSE site. Ensure access control (gate), etc.	Specific active CONSTRUCTION SITE need to be fenced-off and therefore the current land use of grazing for cattle will not be possible on the particular site.	Soil/vegetation	Planning design ,Construction/Operational	Access control should always be a priority. Active CHICKEN HOUSE site should be fenced off.	• The fence should be erected on the area according to the plan. • The site should be secured and safety of humans, animals, is a priority. • Regular checks and proper maintenance of the fence
2.1 The construction , operation of CHICKEN HOUSE facility and associated listed infrastructure.	2.1 Change in landform: These are planned new chicken house. * Change in landform : The existing topography is described as flat but existing farm building	Topography	Construction and Operational	The surface of any new areas to be disturbed must be kept to a minimum. Keep the roof structures at a lower height which ensure that it will not rise above the existing infrastructure.	• Keep construction within the original planning which means that this chicken broiler houses structure will not rise above the existing farm

	and infrastructure next to the new activity, will not have that major impact on topography			**Closure of the facility:** **Rehabilitation** of the CHICKEN HOUSE site in such a way that it would blend in with the surrounding landscape and allow normal surface drainage to continue. Rehabilitation of the new topographical landscape in such a way that it would blend in with the surrounding landscape and allow normal surface drainage to continue. The areas within the various chicken houses as well as the areas around the boundaries of the development will be planted with a grass seed mix that will contain grasses typical to the area. (See GCS Report Findings in report (**Appendix 5)** **Provision will be made in the rehabilitation** of the areas (along the northern and southern boundaries in particular) for the planting of species typical of the KwaZulu-Natal Hinterland Thornveld vegetation type. This will potentially facilitate the development of an ecological corridor through the property that is currently absent. (**See GCS Report Findings in report (Appendix 5)**	infrastructure. The water storage tanks will be a very small structures and each broiler will be a bit higher than the chicken house in order to get proper water flow/pressure. • No additional structure to be build that will rise above the chicken house structure/water tanks.
	2.2. Soil erosion : Due to the fact that certain surface areas (CHICKEN BROILER HOUSES and associated infrastructure	Soil	Construction and operational	To take preventive steps against land disturbance like erosion. Implement and maintain cut-off trenches/berms	• Introduce a cut-off berm wall on the (eastern side of the activity) highest level

	and direct surrounding area), access roads would become compacted and this would lead to lesser infiltration of rainwater and more run-off that could cause erosion on bare disturbed surfaces. Erosion would always be possible on uncovered, unpaved surface area, until such time a vegetation cover is provided during rehabilitation phase.			to prevent erosion. Re-vegetation of exposed soil surfaces (man-made surfaces on chicken house, roads, etc.) should happen as soon as a particular activity has ceased in order to act as a sufficient erosion prevention measure.	end of the activity area in order to prevent storm water from entering the area. • Maintain the berm in winter and especially after a storm event in order to be effective. • Prevent bare patches of soil on the area by vegetate any such areas with grass after construction. • Do checks after a storm event for any erosion damages and rehabilitate where necessary. Storm water control measures must be implemented to divert clean water away from the site and keep contaminated water contained. Water control structures must be well designed and constructed to ensure a minimum down wash of topsoil.
2.1 The construction , operation of CHICKEN HOUSE facility and associated listed infrastructure.	2.3 Potential of soil contamination: This is an planned chicken broiler facility and associated infrastructure. The soil within an surface area of (8 HA in total)) has already been impacted on by the presence of manure from cattle grazing in on the site. The soil of the chicken broilers and associated infrastructure will be covered by 14 broiler houses and cement paving that will form an impermeable layer that will prevent soil contamination from	Soil	Construction and operational	No maintenance of vehicles should take place on site. Spillages of oil/diesel should be prevented. All spillages should be cleaned-up using a spillage kit. Regular maintenance and inspection of vehicles should be done. Chicken manure will be removed by the contractor immediately after each cycle. See Appendix 6. No storage of manure on site will take	• Parking areas for trucks and vehicles to be cemented or paved. • Regular inspections for signs of fuel/oil spillages and removal thereof. • Chicken manure to be removed from site by an accredited contractor H & K PTY Ltd who has a waste license for an existing

	oil/diesel spillage.			place. All dead chickens to be stored in freezer and not directly on soil.	Chicken Litter Trans Loading Site. • No stockpiling of manure on site. • Dead chickens removed on a daily basis to crocodile farm.
				According to GCS Report (Appendix 5) : All plant and equipment that make use of petrochemical substances must be checked leakages on a daily basis before operations commence. • All plants and equipment that are found to be leaking must be removed from the property and only returned once the leakages have been addressed. • If any petrochemical substances are stored on the property, this storage must be done on an impermeable surface in a bunded area that makes provision for 110% of volume of the substances that are stored. All refuelling of plant and equipment must be conducted over a drip-tray. • If any plant or equipment is to be parked on the site, these must be parked within the demarcated construction footprint that has been cleared. • If any spillages from plant or equipment occur, the spill must be immediately contained, the contaminated soils must be collected and bagged in impermeable bags and stored on site to be removed and disposed of by a registered service	•

				provider.	
	2.4 Land capability and land use. Loss of land to support grazing. Permanent loss of land capability to support grazing. The small area (8 HA in total) where the infrastructure such as the 12 broiler houses and associated infrastructure. facility, etc. will thus be alienated , until the CHICKEN HOUSES and associated infrastructure facilities is being demolished and rehabilitated.	Land capability & land use	Operational	The disturbance of grazing land must be restricted (kept to a minimum) to the planned active broiler site only. Take care that roads needed area restricted 1 to enter the area.	• All disturbances and operations must be conducted with the fenced 8 hectare activity area.
2.2 It is an operational objective to contain or divert all surface run-off from this area mainly due to pollution (sediment) potential. This will reduce the run-off quantity, although small in comparison with the drainage area in total.	**Change in surface water quantity & quality:** It is not expected that the broilers and associated infrastructure operation of broilers (8 HA in total)) total AREA available) will have any effect on the boundaries or the general water flow of the catchment. The BROILERS and associated infrastructure will not disturb the natural flow of any water course. Natural veld grass provides a buffer to absorb runoff water and suspended solids in case of a flood. Very low impact	Surface water	Construction and operational	Surface run-off should not be allowed through the planned CHICKEN HOUSE FACILITIES and associated infrastructure, from the surrounding environment and therefore come in contact with the chicken feed on the floor area of the CHICKEN HOUSE FACILITIES and associated infrastructure and carried down-slope to the surrounding environment. Run-off water (clean water) from the roof area and areas between the chicken houses will be treated as clean water and diverted to the natural run-off watercourse line. All the water from inside the hoses will be diverted in pipes or channel to the evaporation dam. During construction Surface run-off control should be appropriately addressed in order to ensure that the run-off water from clean and dirty water environment is being separated. Surface run-off should not be allowed through the planned	• Introduce a cut-off berm wall on the highest level end of the activity area in order to prevent storm water from entering the area. • Maintain the berm in winter and especially after a storm event in order to be effective. • Prevent bare patches of soil on the area by vegetate any such areas with grass after construction. • Do checks after a storm event for any erosion damages and rehabilitate where necessary. Storm water control measures must be implemented to divert clean water away from the site and keep contaminated water contained.

				chicken broiler facility and associated infrastructure, from the surrounding environment and therefore come in contact with the chicken manure and associated infrastructure that can be carried down-slope to the surrounding environment. During construction Surface run-off control should be appropriately addressed in order to ensure that the run-off water from clean and dirty water environment is being separated. Waste must be properly contained as it is rich in nutrients and also has a significant microbial load. The waste water from cleaning the broilers should be safely channeled to the evaporation pond. These ponds store runoff water until it can be spread on cultivation areas or evaporates. A sedimentation system can be introduce before the holding dam that separates the solids and organic nutrients from the effluent.. When significant solid material accumulates, the sedimentation system is cleaned by added this solids to the manure stockpile. The effluent from the settling/holding pond should be extracted for irrigation and must be applied at sustainable rates considering the nutrients and salts.	

				According to GCS Report (Appendix 5): The design of the extent and the layout of the development site boundaries were done in such a way that the nearest aquatic feature from the site is located 100m from these boundaries. As such, provision has been made for a 100m buffer between any aquatic features and the development site. This is considered to mitigate any impact of the development on these features. However, the following good practice measures must be employed during the construction phase to further reduce this risk: • A Stormwater Management Plan must be compiled for the construction and operational phases of the development. • This Stormwater Management Plan must make provision for the prevention of erosion and associated siltation of the aquatic features. • The Stormwater Management Plan must be in place before the construction phase commences.	
	According to GCS Report (**Appendix 5):** All wastewater that is generated as a result of the cleaning of the chicken houses will be collected in a lined onsite evaporation pond. From here the wastewater will be allowed to evaporate.			According to GCS Report (**Appendix 5)** : Monthly monitoring of the quality of the collected wastewater must be provided for in the Operational Management Plan. • The water quality monitoring	•

				results must be measured against the General Authorization limits for the discharge of treated wastewater into a watercourse. If any anomalies are encountered the deviates from the General Authorization limits for discharge to watercourse, these anomalies must be addressed immediately.	
	According to GCS Report **(Appendix 5)** : The storm water management system that will apply to the development makes provision for the pre-development runoff to be similar to the post development runoff. This is done by the implementation of storm water retention areas in the development. A risk however exists that the post-development runoff will exceed the pre-development runoff during high rainfall events.			According to GCS Report (**Appendix 5)** : As provision is made for the pre-development runoff to not exceed the post-development runoff no additional mitigation measures are required from a design point of view. However, the monitoring and maintenance of the storm water system must be provided for in the Operational Management Plan. Provision must be made for the monitoring of the discharge points to ensure that no erosion is present that can result in the siltation of the watercourses. This Stormwater Management Plan must make provision for the prevention of erosion and associated siltation of the aquatic features. The Stormwater Management Plan must be in place before the construction phase commences.	

3.1 CHICKEN HOUSE operation and the utilization of groundwater for potable use (humans).	Reduction of groundwater quality The CHICKEN HOUSE FACILITIES and associated infrastructure. Is not likely to impact on local ground-water quality. The water will be used also for water supply to the ablution facility for mainly potable/wash water for workers. No diesel or oil will be stored on site. Pollution hazard on ground water will be low. According to GCS Report (Appendix 5) The development will make provision for an administrative building that will house the ablution facilities for the employees. The ablution facility will be serviced by a conservancy tank.	Groundwater	Operational	Water from the borehole should be used responsible for only production, ablution facilities, drinking, etc. According to GCS Report (Appendix 5) : Monitoring of the waterborne sewage system for any malfunctions or leaks must be provided for in the Operational Management Plan for the development. • Regular servicing and maintenance of the waterborne sewage system must be included in the Operational Management Plan for the development. • An emergency response procedure specifically associated with the waterborne sewage system must be included in the Operational Management Plan for the development. • This Operational Management Plan must be in place before the development enters the operational phase.	• Parking areas for trucks and vehicles to be cemented or paved. • Regular inspections for signs of fuel/oil spillages and removal thereof. • Chicken manure to be removed from site and no stock piling. • No stockpiling of manure on site. • Daily removal of dead chickens directly to the Crocodile farm, no stockpiling on soil.

3.2 CHICKEN HOUSE operation and the utilization of groundwater for potable and production (chickens).	**Reduction of groundwater quantity, lowering of groundwater level:** Ground-water level in proximity to the facility borehole is likely to recede to some extent due to the extraction of water from a borehole for utilization as drinking water,chicken , human consumption (ablution facilities) and production. The new chicken broilers shall have a continuous supply of potable water.	Groundwater		Water from the existing farm borehole should be used responsible for only ablution facilities, etc. The applicant will use the Plasson nipple drinker systems for he broilers. This system will optimize the usage of water for the chickens, reduce wasting of water and reduce spillage onto the broiler floor that can wet the bedding.	• The erection of storage tanks will assist with the regulation and availability of water always available. • The amount of water abstracted and stored should be restricted to the amount really required for the operation. • Check pipes for leaks on daily basis. • Check water feeder inside the house for optimum production and no spillages or leaks • If possible fit storage tanks with float valves that prevent tank from overflowing and wasting of water • Water should be handled responsible as a scarce resource

4.1 The CHICKEN HOUSE operation and associated activities in combination with natural causes.	**Odor & Dust pollution :** **Dust**: Potential sources of dust emissions at an chicken facility are: • entrance road; •Dust will be generated during operation only from the daily traveling on access road and transportation of	Air quality	Construction and operational	**Dust:** The majority of the operation will take place in an enclosed building and therefore the impact from dust from the operation will be minimal to none. Surface area/ access roads will be wetted with a water tanker during	• Vehicle movement for this activity will be limited to the daily transportation of workers with pickup vehicles and the transportation of chicken and feed every day.

	the eggs. Dust generated in construction by vehicles delivering the construction material. Smoke emissions from heaters:- Low impact on air quality resulting from the burning from coal/wood/domestic waste during heating of air.			construction and operational phases. The chicken farm facility is an enclosed building that will not emit any dust into the surrounding environment. There will be irrigation sprayer installed next to the gravel road for at least 600m towards the entrance of the chicken broilers. Theses irrigation will be used to wet the D162 gravel road in order to mitigate the dust impact on the neighbours and other road users. Odour: The main sources of oudour from a poultry farm are considered to be livestock, feed, housing, manure and waste(including carcasses) and these must be monitored and managed. The main culprit in oudour complains is ammonia (NH3), a colourless gas with very sharp smell. As well as being harsh on the nose , ammonia is also irritant and corrosive and exposure to even low concentrations may produce skin and/or eye irritation especially to the workers on the broilers. As ammonia is lighter than air, it disperses easily. Unlike other denser compounds, it will not settle in low-lying areas. The following mitigation measures will be implemented to reduce odour emissions: • Keep litter dry by increasing the exposure of litter and manure to air/sun. This will	• Maintenance of the short entrance road to keep in good condition. • Put-up sign board at farm entrance to reduce speeds below 10km/h for safety and dust suppression. • When dust becomes a problem wet roads with water tanker regularly. • Dust deposits around ventilation points need to be cleaned up regularly • No stockpiling of manures on site. Removal of manure to the cultivated areas for broad casting on cultivated fields. • Removal of dead chickens on daily basis from chicken houses. • Proper handling of dead chickens to taken to the crocodile farm on daily basis.. • Introduce sniff testing to managers to do daily in order to prevent major oudour problems. • Check broiler temperatures daily to ensure optimization. • Check bedding moisture content daily.

				limit the anaerobic processes by reducing moisture from diarrhea or drinking water into the litter. • Optimizing of poultry stocking density helps limit excessive moisture in the broiler house, so reducing anaerobic processes. • Adjusting ventilation rate according to climate and temperature of the broiler house is a key aspect affecting oudour information. • Adjusting temperature is of prime importance relating to stall climate and welfare. • Ration composition and diet management, provision of balanced complete diets is of high importance. Problems occurring due to high-performance genetics, feed formulation and medication can lead to production of wet manure causing increased ammonia and odor release alongside reduced broiler performance and feed efficiency. • Improve nutrient digestibility could also be achieved by supplementing diets with additives. • Planting trees around poultry houses has been reported to reduce dust ammonia and oudour emissions. The usage of optimal ventilation	

				will help prevent odour issues. Ventilation rates will need to be increased during warmer weather. The higher the dispersion point (for example roof vents) the lower the odour risk Smoke emissions: Smoke emission will be mainly from the heat cove ovens used to heat-up the chicken broiler in winter in order control the temperature. Use wood chips when possible at all times or coal with a low Sulphur content when wood chips are not available. Management of the demand for heating must be managed in such a way that the heating systems must be used optimally. Fly control: Flies are considered to be a nuisance. The most important impacts • Poorer working conditions • Risk to human health	• Check temperatures daily and weather forecast to use the heat coves just when necessary. • Where possible use more wood chips in order to reduce the emissions. • Check weather forecast in order to manage the usage of the Heat Cove heaters in chicken houses. Just use if needed to keep the emissions into the air low. • Regular maintenance on heat cove to have it working optimal. • Put fly traps and fly control around the chicken house to prevent fly problem. • Put fly traps around the houses to prevent fly

				• Spoilage of feed • Poorer animal welfare • Potential for chemical residues • Production losses Of the major fly species found at broilers, only house flies and stable flies breed at the feedlot. Flies breed in a number of relatively small areas, the most common being manure, vegetation and moist areas, drains and heavily grassed areas next to the broilers Integrated pest management that incorporate mechanical, physical, biological and chemical controls are likely to be the most effective. See Fly Control Plan as **Appendix 7.**	problem. • Reduce fly breeding sites through: • Good manure management, clean regularly under fence lines, sedimentation basins, drains and manure stockpiles. • Clean up feed spills daily near the bunks and stables. • Appropriate mortalities management, take carcasses away immediately. • Using insecticides selectively by rotate chemical groups, target insecticide towards hot spots, use baits for house flies with rotation between chemical groups • Enhancing populations of biological control agents through biological agents such as parasitic wasps, predatory mites and entomopathhenogenic fungi that can play an important role in killing larvae and flies. • Cut grass around in between the broilers regularly in order to reduce breeding areas.

4.2 Existing surface infrastructure associated with the CHICKEN HOUSE facility.	**Visual impact created by listed surface infrastructure**: The CHICKEN HOUSE FACILITIES and associated infrastructure will be visible from a distance only from the gravel road.and from one neighbour's	Visual aspects	Construction and operational	During the operational phase, the CHICKEN HOUSE activities will be concealed from the neighboring using the gravel road by means of the initial constructed newly planted windbreaks.	• No activities outside fenced area. • Maintain the trees around the site for optimal growth as natural screen.

	entrance road/ houses. The surrounding farms are already occupied by houses , storage facilities, etc.			Visual impact would be addressed by means of; * trees in order to create a visual screen; * removal of any building, scrap, waste, etc. that would otherwise contribute to a negative visual impact. Painting the roofs in green colour.	
5.1 The CHICKEN HOUSE operation.	Increase in Socio – economic activity at local & regional level: Additional employment 23 job opportunities during the construction phase of the BROILERS project. Additional employment 24 opportunities (created at the CHICKEN BROILERS and associated infrastructure facility. In the long term R25 million will be contributed to the Kwazulu-Natal growth domestic product.	Socio-economics	Construction and operational	Implementation as soon as possible of project construction phases and long term operation of the project.	• Maintain good working relations in work place. • Only employ local people.
6.1 CHICKEN HOUSE and associated infrastructure	Impact of activities on I&AP's: •Temporary loss of (8 HA in total) to utilization of the area for grazing production purposes. The long-term benefits far out-weight the current benefits from the current use. •This is a planned chicken broiler facility and associated infrastructure that needs to continue his activities to the benefit of the owner and current job opportunities. •All environmental impact that is expected could be appropriately mitigated (See Environmental management programme).	Interested and affected parties	Construction and operational	If any problem should arise, meetings will be held with the landowners and affected parties to consult them on certain matters like pollution, etc. Noise: Noise has been identified of one of the major impacts on the neigbours. The main source of noise at chicken broilers will come from the extractor fans that are used to control the temperature inside the broilers. During daytime hours of 7am – 11pm, noise levels of 55dba to 63 dba are generally permitted. At night between the hours of 11pm – 7 am , when fewer fans are	• Keep incident/complaint register on site. • If any query or objection from outside handle immediately and involve EAP where necessary. • Check temperature levels in broilers regularly in order to adjust the usage of the fans. Fan noise is accumulative. The more fans that are in operation the more noise will be created.

	Impact in D162 Gravel road			normally required, thanks to lower external temperatures, this reduces to 45dba – 57 dba. The applicant did investigate different fans to be used and the EM50n are designed to be effective and have welded wire guards with noise reduction supports. As a rule of thumb, every time the distance from the source is doubled, the sound level decreases by 6dba **Visual impact;** The construction of the new broiler houses will have an impact on the neigbours and specifically Mr. Harper next door. The following will be implemented to soften this impact: • Keeping the natural vegetation between the houses and the gravel road intact. • Plant fast growing trees between the houses and the entrance of \Mr. Harper, even before construction starts. Introduce bigger trees from the beginning . • Paint the roofs of all building with green colour that will reduce the visual impact. • **The impact on the D162 gravel road:** The Department of Roads were consulted and they did confirm in letter 24 February 2021	• Maintain vegetation and trees for sustainable cover. • On the layout plan of **Appendix 1 B** it is indicated that an area of 20m will be open between the application area and the gravel road.

				that the development can proceed with the following conditions to adhere to: 1. No buildings within the road reserve area. 2. No buildings within a distance of 15m from the road reserve. 3. No random access whatsoever to D162 will be permitted. 4. Only the existing approved access point D162. 5.The access point to the D162 road shall be upgraded and constructed in consultation with and to the satisfaction to the Department's Deputy Director Pietermarizburg to a type B3 gravel standard 6. A safe sight distance shall be maintained at all times by cutting of grass or other vegetation on either side of access. 7. All cost incurred as a result of these requirements shall be borne entirely on the owners	• The existing road entrance from the D162 will be upgraded and used. • The reserve area on both sides of the entrance will be regularly cleaned by cut the vegetation and keep it short for good visibility. • Road warning signs will be introduced on the road on both sides of the entrance to the site to warn the road users of heavy motor vehicles turning.

AND

e) A description and identification of Impact Management Outcomes/Actions(Mitigation measures)

Vegetation & Soil

- All topsoil (top 30 cm)to be removed prior to construction.
- All activities as on plan and design.
- No additional disturbance outside application area.
- Develop and implement an invasive and alien control programme to control the spread of weeds and other invasive species.
- Eradicate exotic weeds and invader species if it invades the terrain. All illegal invader plants and weeds shall be eradicated as required in terms of Regulation 15 & 16 of the Act on Conservation of Agricultural Resources, 1983 (Act no. 43 of 1983) which list the plants.
- The fence should be erected on the area according to the plan.
- The site should be secured and safety of humans, animals, is a priority.
- Regular checks and proper maintenance of the fence.
- Parking areas for trucks and vehicles to be cemented or paved.
- Regular inspections for signs of fuel/oil spillages and removal thereof.
- Chicken manure to be removed from site and used on cultivated area of landowner.
- No stockpiling of manure on site to prevent ground water pollution.
- Soil erosion: Introduce a cut-off berm wall on the highest level end of the activity area in order to prevent storm water from entering the area.
- Maintain the berm in winter and especially after a storm event in order to be effective.
- Prevent bare patches of soil on the area by vegetate any such areas with grass after construction.
- Do checks after a storm event for any erosion damages and rehabilitate where necessary. Storm water control measures must be implemented to divert clean water away from the site and keep contaminated water contained.

Water

- Encourage and manage the usage of the chemical toilet during pre-construction and construction.
- Put the toilet as nearby as possible to the construction site for ease of use
- Proper cleaning and maintenance of the chemical toilet in order to ensure hygienic conditions for users.
- The erection of storage tanks on the exact place according to planning and design.
- The amount of water abstracted and stored should be restricted to the amount really required for the operation.
- Check pipes for leaks on daily basis.
- If possible fit storage tanks with float valves that prevent tank from overflowing and wasting of water
- Water should be handled responsible as a scarce resource
- Place bins that are clearly marked for domestic and industrial waste.
- All waste material should be contained within the bins provided therefore.
- Waste cement from construction will be used the upgrading of roads or other construction on the farm.
- All empty cement bags will to be stored on site in a separate bin/drum and taken to the nearest waste disposal site once a week.
- Daily inspections for dead chicken in the broiler houses.
- Daily removal thereof and taken to the crocodile farm on a daily basis.
- Daily the chickens will be taken of the nearby Crocodile farm as feed for the crocodiles. See confirmation letter attached as Appendix 4.
- Introduce a cut-off berm wall on the (eastern side) highest level end of the activity area in order to prevent storm water from entering the area.
- Maintain the berm in winter and especially after a storm event in order to be effective.
- Prevent bare patches of soil on the area by vegetate any such areas with grass after construction.

- Do checks after a storm event for any erosion damages and rehabilitate where necessary. Storm water control measures must be implemented to divert clean water away from the site and keep contaminated water contained
- Parking areas for trucks and vehicles to be cemented or paved.
- Regular inspections for signs of fuel/oil spillages and removal thereof.
- Chicken manure to be removed from site and used on cultivated area of landowner.
- No stockpiling of manure on site.
- The erection of storage tanks will assist with the regulation and availability of water always available.
- The amount of water abstracted and stored should be restricted to the amount really required for the operation.
- Check pipes for leaks on daily basis.
- Check water feeder inside the house for optimum production and no spillages or leaks
- If possible fit storage tanks with float valve that prevent tank from overflowing and wasting of water.
- Water should be handled responsible as a scarce resource

Land Capability and Land use

- The disturbance of grazing land must be restricted (kept to a minimum) to the planned active CHICKEN HOUSE site only.
- Take care that roads needed area restricted 1 to enter the area.
- All disturbance and activities must be conducted within the 8 ha fenced off area.

Topography

- Keeps construction within the original planning which means that this chicken house structure will not rise above the existing farm infrastructure. The water storage tanks will be a very small structure will be a bit higher than the chicken house in order to get proper water flow/pressure.
- No additional structure to be build that will rise above the chicken house structure/water tanks

Air Quality

- Vehicle movement for this activity will be limited to the daily transportation of workers with vehicle and the transportation of chicken and feed every six weeks with trucks.
- Maintenance of the short entrance road to keep in good condition.
- Put-up sign board at farm entrance to reduce speeds below 10km/h for safety and dust suppression.
- When dust becomes a problem wet roads with water tanker regularly.
- In winter check weather forecast in order to manage the usage of the Heat Cove heaters in chicken house. Just use if needed to keep the emissions into the air low.
- Regular maintenance on heat cove to have it working optimal.
- No stockpiling of manures on site. Removal of manure to the cultivated areas for broad casting on cultivated fields.
- Introduce sniff testing to managers to do daily in order to prevent major oudour problems.
- Check broiler temperatures daily to ensure optimization.
- Check bedding moisture content daily.
- Removal of dead chickens on daily basis from the broiler houses.
- Proper handling of dead chickens to place in freezer immediately and taken to the crocodile farm once in two weeks.
- Put fly traps around the chicken house to prevent fly problem. See Appendix 7 for additional fly management.
- Reduce fly breeding sites through:
- Good manure management, clean regularly under fence lines, sedimentation basins, drains and manure stockpiles.
- Clean up feed spills daily near the bunks and stables.
- Appropriate mortalities management, take carcasses away immediately.
- Using insecticides selectively by rotate chemical groups, target insecticide towards hot spots, use baits for house flies with rotation between chemical groups

- Enhancing populations of biological control agents through biological agents such as parasitic wasps, predatory mites and entomopathhenogenic fungi that can play an important role in killing larvae and flies.

Visual Aspects

- No activities outside fenced area.
- Maintain the trees around the site for optimal growth as natural screen.

Socio- economics

- Implementation as soon as possible of project construction phase and long term operation of the project.
- Maintain good working relations in work place.
- Employ only local people .
- Keep security at gate and around the site as tight as possible.

(f)Description of the proposed Impact management actions, identifying the manner in which the impact management (objectives and) outcomes contemplated in paragraph (d) and (e) will be achieved where applicable include actions to-

i)avoid modify, remedy, control or stop any action, activity or process which causes pollution

All the management actions as in paragraph (d) do entail the daily checks of the different possible impacts that might occur. Through daily checks and management an early warning system for possible impacts can be put in place to modify, remedy, stop and mitigate any impact before it occur. For every possible impacts there are mitigations measures, bit the best management action will be to stop the impact before occurring.

ii) Comply with any prescribed environmental standards or practices

The environmental management and impact management specifically will comply with ay standards of NEMA. All the actions of day to day environmental management and to avoid impacts will be inly with the objectives to achieve the optimal operation/production of this activity with minimal impact to the environment and in a sustainable manner.

iii) Comply with any applicable provisions of the Act regarding closure where applicable

- This activity will be a long term project of 30 years and more and not closure foreseen in the short term, but if closure should come they will definitely comply with the provisions of the Act by introduce the following:
- The main closure objective of Nyala Farm CC will be to rehabilitate the entire chicken broiler site in such a way to ensure that the new man-made topographical landscape would blend in with the surrounding landscape, not pose a safety hazard to humans and animals, while at the same time allow for alternative land uses. Establish a self-sustaining and stable vegetation cover in order to mitigate the visual impact, to control erosion and to create some habitat for animals. The rehabilitated environment also needs to be aesthetically acceptable according to the principle of BPEO. Another main objective is to manage the

surface water in such way that an acceptable water standard is achieved when a closure certificate is issued.

- As this area was disturbed before there is not top soil available on all the areas but on the non-disturbed area all available top soil (only top 30 cm) will be stripped and stockpiled before construction.
- Nyala Farm CC will ensure that the Operation/Sites are:
- Neither a danger to public health and safety nor to animal health and safety;
- Not a source of any pollution;
- Stable (ecological and geophysical);
- Rehabilitated to the state that is suitable for the predetermined and agreed land use;
- Compatible with the surrounding biophysical environment;
- A sustainable environment;
- Aesthetically acceptable;
- Not an economic, social or environmental liability to the local community or the state now or in the future.
- Nyala Farm CC will furthermore:
- ensure that the physical and chemical stability of the rehabilitated site will be such that risk to the environment is not increased by naturally occurring forces to the extent that such increased risk cannot be contended with by the installed measures;
- subscribe to the optimal exploitation and utilization of South Africa's natural resources;
- ensure that the chicken broiler site are closed efficiently and cost effectively.
- ensure that the operation is not abandoned but closed in accordance with the relevant requirements;
- ensure that the interest of all interested and affected parties will be considered;
- ensure that the all-relevant legislation regarding closure will be adhered to, and all relevant application procedures followed.

(iv)Comply with any provisions of the Act regarding financial provision for rehabilitation

Not applicable

g) The method of monitoring the implementation of the impact management actions contemplated in (f).

- The different aspects will mostly monitored on daily basis physical checks of the possible impacts like: Check daily for fuel/oil spillages on parking area in order to prevent contamination of soil and ground water. Report any spillage incident to management and note in register.
- Ensure daily inspections for dead chickens and remove them immediately.
- Daily checks for water leaks on pipe lines and inside the chicken house in order to use ground water sparingly. Incident register opened where all leakage or spillage incidents been noted for monitoring purposes. The register should have the date and place of spillage as well as the date of repair and clean-up.
- Ensure that no stockpiling of manure take place on the activity area. Removal of litter after each cycle by the contractor. Register for litter removal will be opened to monitor with date and amount removed.
- Remove dead chickens on daily basis to the Crocodile farm through a register for monitoring

h) The frequency of monitoring the implementation of the management actions contemplated in paragraph (f)

Most of the management actions will be on a daily basis. The removal of the manure will be after the end of each cycle with cleaning of the chicken broiler houses. The monitoring of the air quality will be in the three winter months May, June and July when the Heat Cove heating system is most active.

i) An indication of the persons who will be responsible for the implementation of the impact management actions

The director of Nyala Farm CC, Mr. Hans Jansen van Vuuren will be on site as well as a newly appointed manager who will be responsible for all the monitoring.

j) The time periods within which the impact assessment actions contemplated in (f) must be implemented

The monitoring of the impact actions will be implemented for the total duration of the activity and while this activity is active and in production.

k) The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f)

All the monitoring actions as described in g- j will be done in order to achieve compliance. Compliance will be audited on an annual basis by the EAP.

l) A program for reporting on compliance, taking into account the requirements as prescribed by the regulations

As per NEMA and associated Regulations, this Environmental Management Programme will be continually assessed in terms of its appropriateness and adequacy. In order to achieve this, Nyala Farm CC will undertake the following:

- Implement the necessary monitoring programmes, as discussed as part of this EMPR;
- Conduct performance assessments of this EMPR; and
- Compile and submit the afore-mentioned performance assessment reports to the DEA.
- The frequency of the performance assessments will be bi-annually for the construction phase and annually for the operational phase.
- An independent and competent person will undertake all performance assessments. EMP performance assessments will be conducted until closure.
- Reporting: An EMP Audit Report will be submitted to the Management and the DEDECT on 6 monthly bases for the construction phase and annually for the operational phase.

m) Environmental Awareness Plan

i) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.

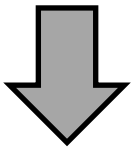
ii) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

Employee communication process:

Nyala Farm CC believes in seven key principles to achieving effective environmental training and awareness:

- Communication
- Urge
- Leadership
- Teamwork
- Understanding
- Recognition
- Empowerment (Culture).

For further information see the table on the next page.



Environmental Awareness Plan

Aspect	Objectives	Description	Time/period	Responsible person/party
Communication	Describe the manner in which the applicant intends to inform his or her employees of any environmental risks which may result from their work and; The manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment	Method: How do the employees receive the information? • Workplace meetings with the Operations Manager • At safety training sessions; • Induction programmes; • Regular publications and information leaflets; • Bulletin boards (posters), • Electronic mail messages, • Forum meetings, which involves the local I & AP's and the DEA. The company engages and communicates with communities, with due regard and respect for local interests, cultures and customs, and contribute meaningfully to the economic, social and educational well-being of the communities in which they operate.	On-going	Project Manager/EM (Environmental manager) ECO (Environmental Control Officer)
Information		Information from internal (EMP, etc.) and external sources will be communicated in a language understandable to every worker. Environmental information will be communicated via the methods spelled out above.	On-going	Project Manager/EM,ECO
Training		All employees should receive basic environmental awareness training, either as induction training or later at a special training session. Different levels of responsibility in relation to individual's potential impact on the environment must be addressed in the training session. The further motivation of the workforce would be achieved through in-house and training through attending short courses with regard to environmental management, etc. Appropriate training relevant to the implementation of the environmental management plan should be provided to all personnel. Employees should have an appropriate knowledge base. The company should also ensure that the contractors working on site provide evidence that they have the requisite knowledge and skills to perform the work in an "environmentally responsible manner". Education and training is needed to ensure that the employee's knowledge of regulatory requirements, internal standards and the company's policies and objectives is current. Issues to be considered during training: • handling of topsoil • prevention of oil/diesel spillages	On-going	Project Manager EM/ECO

Aspect	Objectives	Description	Time/period	Responsible person/party
		• handling of industrial and domestic waste • dust suppression • rehabilitation • use of chemical toilets • use of water • surface run-off control • invasive and alien control programme , etc. Make game catching, traps, snares, poaching and any other unnecessary disturbance of animals a disciplinary offence.		
Reporting		Every environmental incident that might happen and which the workers become aware off should be reported to the manager. The worker can only report on incidents if he is made aware off the possible environmental risks through the communications methods indicated in section 1. A written reporting format should be put in place. Communication includes establishing processes to report internally and, where desired, externally on the environmental activities of the company in order to: Demonstrate management commitment to responsible environmental management; Deal with concerns and questions about environmental issues (handled within the Forum); Raise awareness of the organization's environmental policies, environmental management program; and Inform internal or external interested parties about the mine's management system; A formal complaints/concerns reporting system to address I &AP's interaction with the mine must be put in place (complaints register); The company must regulatory communicate with the affected community. This communication must address new developments, problems, achievements and all other relevant aspects of mutual interest.	On-going	ALL

n) any specific information that may be required by the competent authority.

None.

APPENDIX A

APPENDIX:	
Map 1A - GENERAL LOCATION OF THE PROPOSED CHICKEN BROILER FACILITY MAP 1B - Infrastructure/Layout Map MAP 2A - Environmental features MAP. Provide a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers)	1
See proof of consultation : Summary of the issues raised by interested and affected parties, letters, correspondence, minutes, COMMENTS & RESPONSE REPORT etc. CORRESPONDANCE RECEIVED FORM STATE DEPARTMENTS , LOCAL AUTHORITIES , ETC.	2
Site photo sheet	3
Confirmation of Crocodile farm	4
The GCS Report (Ref. 21-0096) 14 Apr 2021 compiled by Magnus van Rooyen	5
Confirmation of Litter removal	6
Fly control plan	7