

DRAFT REPORT

# SCOPING REPORT

*In terms of Section 24 and 24(D) of NEMA (Act No. 107 of 1998)*

for:

**Integrated Environmental Impact Assessment for the proposed clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.**

Report Date: August 2021



**Compiled by:**

**AB ENVIRO-CONSULT CC**

7 Louis Leipoldt Street

Potchefstroom

2531

Tel: + 27 (83) 5488 105

Fax: + 27 (18) 293 0671

E-mail: [jp@abenviro.co.za](mailto:jp@abenviro.co.za)

**Compiled for:**

De Heus (Pty) Ltd



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## EXECUTIVE SUMMARY

The Applicant, De Heus (PTY) Ltd has appointed AB Enviro Consult CC, an independent environmental consultancy, to undertake an Integrated Environmental Impact Assessment for the proposed clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.

The regulation and protection of the environment within South Africa occurs mainly through the application of various items of legislation, within the regulatory framework of the Constitution (Act 108 of 1996).

The primary legislation regulation for Environmental Impact Assessments (EIA) within South Africa is the National Environmental Management Act (NEMA, Act 107 of 1998). NEMA makes provision for the Minister of Environmental Affairs to identify activities that may not commence prior to authorisation from either the Minister or the provincial Member of the Executive Council (MEC). In addition, NEMA provides for the formulation of regulations in respect of such authorisations.

The EIA Regulations (2014) (amended 2017) allow for a Basic Assessment process for activities with limited environmental impact (listed in GN R. 327 and GN R.324, as amended in 2017) and a more rigorous two-tiered approach to activities with potentially greater environmental impact (listed in GN R. 325, 2017). This two-tiered approach includes both a Full Scoping and EIA Process.

The proposed development triggers a Full Scoping and EIA Process.

The purpose of this Application is to apply for authorization for the proposed establishment of a Feed Mill, Agricultural recreation area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality.

Based on the project description, a number of Listed Activities under Category A of the List of Waste Management Activities (GN R 921 of 2013) of the National Environment Management: Waste Act (NEM:WA) (Act No. 59 of 2008) are triggered. The proposed development will also trigger listed activities in terms of the Norms and Standards for organic waste composting, 2020 (GN No 561 of 25 June 2021). In terms of this Legislation: "*3 (2) The owner of an organic waste composting facility with a capacity to process less than 10 tonnes per day of organic waste must register in terms of clause 3(3) of these Norms and Standards, and align with the requirements of applicable integrated waste management by-laws, and comply with the principle of duty of care as contained in section 28 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).*" A separate application for the registration of the composting facility will be submitted with DEDEAT.

In terms of the NEM:WA List of Waste Management Activities (GN R 921 of 2013), *a person who wishes to commence, undertake or conduct a waste management activity listed under Category A, must conduct a basic assessment process set out in the Environmental Impact Assessment Regulations made under section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as part of a waste management licence application contemplated in section 45 read with section 20(b) of this Act.*

As such, a S&EIR process (Please note in this regard that this application is for a combination of the NEMA or NEM:WA activities and that S&EIR process applies for the NEMA Application) including an Environmental Management Programme (EMPr) are required for submission to the Competent Authority, DEDEAT, for the Licencing of the Waste Activities.

The National Water Act (Act no. 36 of 1998) is founded on the principle that the National Government has the overall responsibility and authority to ensure that the water resources of the Republic of South Africa are protected, equally allocated and used in such a manner as to be beneficial to the general public. According to the Act, a person can only be entitled to use water beyond reasonable domestic use if the specific use is permissible under the Act.

Section 21 of the National Water Act (Act no. 36 of 1998) identifies water uses that cannot be performed without authorization from the Department of Water and Sanitation. A Consultant has been appointed, in terms of section 41(4) of the National Water Act (Act 36 of 1998) (NWA) to apply for a Water use licence. The proponent will apply for the use in terms of Sections 21 of the NWA for the (21(a)) abstraction of water from a ground water resource, via borehole. Additionally, run-off from site will be collected in an evaporation pond on site a 21 (g) – disposing of waste in a manner which may detrimentally impact a water resource.

The National Development 2030 mentions that South Africa can eliminate poverty and reduce inequality by 2030 and this will require change, hard work, leadership and unity. Its goal is to improve the life chances of all South Africans, but particularly those young people who presently live in poverty. In the past, we expected government to do things for us. What South Africa needs is for all of us to be active citizens and to work together – government, business, communities – so that people have what they need to live the lives they would like.

The White Paper on Local Government<sup>1</sup> (1998) introduces the concept of “developmental local government” which is defined as: “Local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs, and improve the quality of their lives.” However, the same document makes it clear that:

*“Local Government is not directly responsible for creating jobs. Rather, it is responsible for taking active steps to ensure that the overall economic and social conditions of the locality are conducive to the creation of employment opportunities.”*

The Chris Hani District Municipality developed and adopted a District Development Agenda that focuses on the development of all its Six Local Municipalities through the identification of competitive advantages of its local municipalities. This was later translated into an Agro Industrial Plan that has been used as a springboard to the proposed Special Economic Zone.

The Chris Hani Regional Development Strategy provides focused areas around which resources can be leveraged and mobilised in order to contribute to the broad overall objective of ensuring that all people in the district are able to benefit from the economy. The Competitive Advantage therefore for the district points to the broadly defined agricultural sector as the one with the most potential to contribute to job creation, promoting of livelihoods opportunities and contributing to sustained social and economic growth and development.

Whilst crop production and agro-processing sector remain important areas of intervention, the present cost of transport to high volume markets will most likely render local production uncompetitive until substantial economies of scale and consistent quality can be achieved.

Value chain integration implies looking at all the components of a particular sector and subsector and identifying what can be done or put in place to add value to what already exists, and in doing so, promote job creation and provide more livelihood opportunities.

While the districts' agricultural potential is obvious, primary agricultural projects have had a minimal impact on unemployment. This situation necessitates strategies to increase value-added production by exploiting opportunities that exist along the various crop and livestock value chains. (Chris Hani District Municipality 2021-2022 Draft IDP)

Agriculture is one of the main economic sectors within the area. Agricultural activities can be sub-divided into two groups – crop farming and livestock farming. The Applicant has identified gaps in the value chain for both of these economic sectors being Lucerne (Crop farming) and sheep (Livestock farming). It is the intension of the applicant to add value to both of these identified agricultural sectors and in doing so, create jobs and infrastructure. The increased employment in the area during both the construction and operational phase will also result in increased expenditure, which, in addition, will mean that more than just the proposed jobs required for the proposed development will be created due to economic spin-offs that will result.

#### Feed Mill

Feed mixing, pill making, packaging and ancillary works including grain and feed storage will form part of this operation. Lucerne that is produced extensively in the area and will be used to produce feed, thus adding value to primary products that are produced in the region. Maize that is also produced in the region will also be incorporated into the production process and a limited amount of this produce will also be value added. At full production the Feed Mill will produce 9 000 tons of feed per month and will generate 100 employment opportunities.

#### Agricultural recreational area.

This part of the proposed development will be for Animal display and demonstrations, auctions and ancillary activities and will be Open to the public, thus providing a platform for the people of the region to sell and display their animals and to come together as a community.

#### Solar Farm

Greenhouse gases (GHG), including CO<sub>2</sub> emissions are associated with the conventional provision of energy services and are a major cause of climate change. Globally, coal is the second largest primary energy source used worldwide (preceded by oil), and the first source for power generation. In terms of electricity generation or supply, South Africa is highly dependent on coal-fired power plants and therefore energy supply is carbon dioxide-intensive.

Renewable energy sources play a role in providing energy services in a sustainable manner, and in particular in mitigating climate change. Sustainable energy can be defined as energy that provides affordable, accessible and reliable energy services that meet economic, social and environmental needs within the overall developmental context of society, while recognising equitable distribution in meeting those needs. Sustainable energy is an element of sustainable development that is defined as development that meets the present needs and goals of the population without compromising the ability of future generations to meet theirs. On the overall sustainable development is underpinned by economic development (growth efficiency), social development (culture, heritage, poverty, and empowerment) and environmental development (pollution and natural resources).

The government of South Africa considers the use of renewable energy as a contribution to sustainable development. Sustainable development also implies the provision of electricity and other modern fuels to the commercial and industrial sectors to promote their economic competitiveness and future prosperity. (Department of Environmental Affairs (2015). EIA Guideline for Renewable Energy Projects. Department of Environmental Affairs, Pretoria, South Africa)

With the current situation of unreliable electricity provision in the Country, the Applicant has opted for the option of providing his own Electricity, thus ensuring a steady flow of electricity for his operations. In providing off-grid, renewable Electricity,

the Applicant is also decreasing his Ecological footprint as he will not be using Electricity that has been generated from unrenewable energy sources.

Sheep Feedlot

The Sheep Feedlot will be designed for 10 880 head of sheep. Currently, only 24 sheep can be raised on the entire development site, as the area is very dry. The intensification of the Agricultural potential of the site is a huge advantage as the production capacity of the site will be raised from 24 to 10 880 head of sheep. This operation will also result in an additional 10 employment opportunities that will be generated.

Treatment Facilities

In order to treat the manure and the carcasses that will originate from the Sheep Feedlot the construction of three Sedimentation ponds, two Evaporation ponds and a Manure Composting area is proposed. The need for these activities lies in the fact that in order to ensure that the proposed development does not cause any harm to the Environment, potential pollution has to be curbed. The purpose of the sedimentation system is to remove settleable solid material from the feedlot runoff and prevent it from entering the evaporation ponds. The Evaporation ponds are sized based on calculation of the annual water balance (Annual Rainfall versus Evaporation Statistics) and is designed to contain the runoff/ effluent from the feedlot site.

The manure composting area will have a concrete base and will be able to accommodate the composting activities. The composting facility will generate additional income as the compost will be sold, thus ensuring that a potential source of pollution has been processed to a usable product.

Consistent with national priorities, environmental authorities must support *"increased economic growth and promote social inclusion"*, whilst ensuring that such growth is *"ecologically sustainable"*. In the National Spatial Development Perspective (NSDP) it is highlighted that, to achieve the goal of stimulating sustainable economic activities and to create long-term employment opportunities, it is required that spending on economic infrastructure is focused in priority areas with potential for economic development, with development to serve the broader societies' needs equitably

The activity is listed in terms of the Regulations (in force since 4 December 2014) in terms of Section 24(M) and 44 made under section 24(5) of the National Environmental Management Act (NEMA) 1998 (Act 107 of 1998) as amended and published in Government Notice No. R 326 of 2017 and the National Environmental Management: Waste Act, 2008 and the amendments to the environmental impact regulations, 2014 made in this regard. The proposed development triggers the following regulations and listed activities:

**LISTED ACTIVITIES APPLIED FOR IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AS AMENDED AND THE AMENDMENTS TO THE ENVIRONMENTAL IMPACT REGULATIONS, 2014**

Indicate the number and date of the relevant notice:	Activity No (s) (in terms of the relevant or notice) :	Describe each listed activity as per the detailed project description (and not as per wording of the relevant Government Notice):
GN.R. 327, 7 April 2017	1 (ii)	The development of a PV Solar facility and infrastructure for the generation of electricity from a renewable resource where— (ii) the output is 2 megawatts but the total extent of the facility covers an area of 5 hectares;



		Although the development of the facilities and infrastructure is for photovoltaic installations the proposed development will occur— (a) outside of an urban area; and (b) not on existing infrastructure.
GN.R. 327, 7 April 2017	4 (ii)(a)	The development and related operation of facilities and infrastructure for the concentration of 10 880 sheep in a density of 4,1 square meters per head of sheep.
GN.R. 325, 7 April 2017	15	The clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province

**ACTIVITIES APPLIED FOR IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 2008 AND THE AMANDMENTS TO THE ENVIRONMENTAL IMPACT REGULATIONS, 2014**

<b>INDICATE THE NO. &amp; DATE OF THE RELEVANT NOTICE:</b>	<b>ACTIVITY NUMBERS (AS LISTED IN THE WASTE MANAGEMENT ACTIVITY LIST) :</b>	<b>DESCRIBE EACH LISTED ACTIVITY (and not as per the wording of the relevant Government Notice):</b>
GN.R. 921, 29 November 2013	Category A: Activity (1)	The storage of storm water and wash water originating from the sheep feedlot in 3 sedimentation and 2 evaporation ponds.
GN.R. 921, 29 November 2013	Category A: Activity (12)	The construction of a facility that will store storm water and wash water originating from the sheep feedlot in 3 sedimentation and 2 evaporation ponds and is listed as Category A (1).

The purpose of the study is therefore to determine the impacts that the environment may have on the proposed activity, as well as the possible impacts that the activity may have on the environment.

The study is being conducted according to normal scientific practices. A theoretical background review was compiled for the different variables by using available information from the literature. Field verification was undertaken and visits paid to the site to gather further information and/or to verify information. It also includes the identification of *key interest groups*, both governmental and non-governmental, and to establish good lines of communication. Specialist studies were undertaken to determine the impacts on sensitive areas and to determine whether the proposed project can be sustainably implemented. The specialists will also advise on mitigation measures where applicable.

Although this is only the Scoping phase of the proposed development, no “fatal flaws” has been encountered as of yet. All the issues envisaged at this stage can be mitigated.

## 1. INTRODUCTION

The Applicant, De Heus (PTY) Ltd has appointed *AB Enviro Consult CC*, an independent environmental consultancy, to undertake an Integrated Environmental Impact Assessment for the proposed clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.

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As such, a S&EIR process (Please note in this regard that this application is for a combination of the NEMA or NEM:WA activities and that S&EIR process applies for the NEMA Application) including an Environmental Management Programme (EMPr) are required for submission to the Competent Authority, DEDEAT, for the Licencing of the Waste Activities.

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The government of South Africa considers the use of renewable energy as a contribution to sustainable development. Sustainable development also implies the provision of electricity and other modern fuels to the commercial and industrial sectors to promote their economic competitiveness and future prosperity. (Department of Environmental Affairs (2015). EIA Guideline for Renewable Energy Projects. Department of Environmental Affairs, Pretoria, South Africa)

With the current situation of unreliable electricity provision in the Country, the Applicant has opted for the option of providing his own Electricity, thus ensuring a steady flow of electricity for his operations. In providing off-grid, renewable Electricity, the Applicant is also decreasing his Ecological footprint as he will not be using Electricity that has been generated from unrennewable energy sources.

### Sheep Feedlot

The Sheep Feedlot will be designed for 10 880 head of sheep. Currently, only 24 sheep can be raised on the entire development site, as the area is very dry. The intensification of the Agricultural potential of the site is a huge advantage as the production capacity of the site will be raised from 24 to 10 880 head of sheep. This operation will also result in an additional 10 employment opportunities that will be generated.

### Treatment Facilities

In order to treat the manure and the carcasses that will originate from the Sheep Feedlot the construction of three Sedimentation ponds, two Evaporation ponds and a Manure Composting area is proposed. The need for these activities lies in the fact that in order to ensure that the proposed development does not cause any harm to the Environment, potential pollution has to be curbed. The purpose of the sedimentation system is to remove settleable solid material from the feedlot runoff and prevent it from entering the evaporation ponds. The Evaporation pond is sized based on calculation of the annual water balance (Annual Rainfall versus Evaporation Statistics) and is designed to contain the runoff/ effluent from the feedlot site.

The manure composting area will have a concrete base and will be able to accommodate the composting activities. The composting facility will generate additional income as the compost will be sold, thus ensuring that a potential source of pollution has been processed to a usable product.

Consistent with national priorities, environmental authorities must support *"increased economic growth and promote social inclusion"*, whilst ensuring that such growth is *"ecologically sustainable"*. In the National Spatial Development Perspective (NSDP) it is highlighted that, to achieve the goal of stimulating sustainable economic activities and to create long-term employment opportunities, it is required that spending on economic infrastructure is focused in priority areas with potential for economic development, with development to serve the broader societies' needs equitably

## 1.1 THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The purpose of this document is to adhere to the requirements for compilation of Environmental Impact Assessment Reports as amended and published in Government Notice R.326 of 7 April 2017, Appendix 2, and the National Environmental Management Act (Act 107 of 1998) (NEMA).

## 1.2 DESCRIPTION OF THE PROCESS FOLLOWED

In order to assess a proposed development it is important to take into consideration the principles of NEMA. These principles are outlined in Chapter 1 and DEDEAT as follows:

- 1) *"The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and—*
  - a. *shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination;*
  - b. *serve as the general framework within which environmental management and implementation plans must be formulated;*
  - c. *serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment;*
  - d. *serve as principles by reference to which a conciliator appointed under this Act must make recommendations; and*
  - e. *guide the interpretation administration and implementation of this Act, and any other law concerned with the protection or management of the environment.*
- 2) *Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.*
- 3) *Development must be socially, environmentally and economically sustainable.*
- 4) (a) *Sustainable development requires the consideration of all relevant factors including the following:*
  - (i) *That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*
  - (ii) *that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*
  - (iii) *that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;*

- (iv) that waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;*
- (v) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;*
- (vi) that the development use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;*
- (vii) that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and*
- (viii) that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.*
- (b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.*
- (c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.*
- (d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.*
- (e) Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.*
- (f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation and participation by vulnerable and disadvantaged persons must be ensured.*
- (g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognizing all forms of knowledge, including traditional and ordinary knowledge.*
- (h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.*
- (i) The social, economic and environmental impacts of activities, including disadvantages and benefits must be considered, assessed and evaluated and decisions must be appropriate in the light of such consideration and assessment.*
- (j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.*
- (k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.*
- (l) There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.*

- (m) Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.*
- (n) Global and international responsibilities relating to the environment must be discharged in the national interest.*
- (o) The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.*
- (p) The costs of remedying pollution, environmental degradation consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.*
- (q) The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.*
- (r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure."*

The above mentioned principals and the applicable legislation, Policies and Guidelines as described in Paragraph 5 of this Report were taken into account in the assessment of the Environmental Impacts for the proposed development. The process followed can be described as follows:

- 1) The EAP was contracted by the land owner, De Heus (PTY) Ltd as their Independent Environmental Assessment Practitioner.
- 2) A Geotechnical Engineer was appointed to determine whether the Geology and Soils of the site is suitable for the proposed development
- 3) The Civil Engineer has been appointed to determine the capability of existing infrastructure to be linked to proposed development and readily available bulk services. He will also design the proposed infrastructure.
- 4) A SAHRA Specialist has been appointed to determine the possible impact of the development on Archaeological and Cultural features.
- 5) A Paleontological specialist was appointed to determine the impact of the proposed development on the fossils that might be found on site.
- 6) A Fauna and Flora Habitat specialist has been appointed to determine the impact of the proposed development on the Fauna and Flora of the area.
- 7) A Wetland Specialist was appointed to assess the status of the canal/drainage line that intersects the site.
- 8) An Aviation Specialist was appointed to assess the impact of the proposed development on the airfield that is located towards the south of the site. His assessment also included a "glint and glare" visual impact assessment to determine if the proposed development will have any negative impacts in this regard.
- 9) An Agricultural Specialist was appointed to assess the agricultural potential of the site.
- 10) An Environmental Screening Process was conducted by the EAP to ensure that all the relevant Environmental Legislation is taken into consideration.
- 11) Desk top studies were conducted and alternatives assessed.
- 12) Site inspections were carried out to verify the outcomes of the desktop studies, and the preferred alternative defined.
- 13) A full Public Participation Process is being followed to obtain inputs from interested and affected parties.
- 14) All the information obtained from the above mentioned processes is being used to assess the Environmental Impact that the proposed development may have on the Environment and vice versa.

- 15) The inputs from Specialists, interested and affected parties, together with the knowledge of the EAP is being used to determine measures to avoid, mitigate and manage potential impacts. These measures are described in the Environmental Management Programme.

### 1.3 SCOPING PHASE

The Scoping phase includes the necessary investigations to assess the suitability of the identified site and its surrounding environment, for the development proposal. The scoping exercise describes the “status quo” of the bio-physical, social, economic and cultural environment, and identifies the anticipated environmental aspects associated with the proposed development. Scoping includes the identification of key interest groups, (both government and non-government), and to establish efficient and effective communication. Identifying and informing Interested and affected parties of the proposed development may have an impact on the focus of the EIA. (S. Cliff, 2015)

The purpose of the Scoping Report is to document the outcome of the Scoping Phase of the project.

This report fulfils the requirement of the EIA Regulations (2014) for the documentation of the scoping phase. The Scoping Report is compiled in accordance with Section 21(3) of NEMA’s 2014 EIA Regulation (GN R. 982) as amended and published in Government Notice R. 326 of 7 April 2017. Table 1 below provides a summary of the legislative requirements in terms of a Scoping Report as stipulated in Section 21(3) of the EIA Regulations of December 2014 as amended and published in Government Notice R. 326 of 7 April 2017. Cross-references are provided in terms of the relevant section within this Scoping Report where the NEMA and Scoping Report requirements have been addressed.

**Table 1: Scoping Report content as per Section 21(3) of NEMA’s 2014 EIA Regulations of December 2014 as amended and published in Government Notice R. 326 of 7 April 2017 Appendix 2**

Section of the EIA Regulations, 2014	Description of EIA Regulations Requirements for Scoping Reports	Location in this Scoping report
Appendix 2, section 2 (1)(a)	Details of - (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	Paragraph 2
Appendix 2, section 2 (1)(b)	The location of the activity, including – (i) The 21 digit Surveyor General code of each cadastral land parcel;  (ii) Where available, the physical address and farm name;  (iii) Where the required information in items (i) and (ii) is not available, coordinates of the boundary of the property or properties	Paragraph 4  Paragraph 4  Paragraph 4
Appendix 2, section 2 (1)(c)	A plan which locates the proposed activity or activities applied for, at an appropriate scale, or, if it is – (i) A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or  (ii) On land where the property has not been defined, the coordinates within which the activity is to be undertaken; or  (iii) On land where the property has not been defined, the coordinates	Figure 1 and Figure 2 and 3
Appendix 2, section 2 (1)(d)	A description of the scope of the proposed activity, including – (i) All listed and specified activities triggered;  (ii) A description of the activities to be undertaken, including associated structures and infrastructure.	Paragraph 3  Paragraph 3
Appendix 2, section 2 (1)(e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.	Paragraph 5



Section of the EIA Regulations, 2014	Description of EIA Regulations Requirements for Scoping Reports	Location in this Scoping report
Appendix 2, section 2 (1)(f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.	Paragraph 6
Appendix 2, section 2 (1)(g)	<p>A full description of the process followed to reach the proposed preferred activity, site and location within the site, including-</p> <p>(i) Details of all alternatives considered;</p> <p>(ii) Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;</p> <p>(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;</p> <p>(iv) The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</p> <p>(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 the impacts-</p> <p>(aa) can be reversed;</p> <p>(bb) may cause irreplaceable loss of resources; and</p> <p>(cc) can be avoided, managed, or mitigated.</p> <p>(vi) The methodology used in deterring and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;</p> <p>(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 geographic, physical, biological, social, economic, heritage and cultural aspects;</p> <p>(viii) The possible mitigation measures that could be applied and level of residual risk;</p> <p>(ix) The outcome of the site selection matrix;</p> <p>(x) If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and;</p> <p>(xi) A concluding statement indicating the preferred alternatives, including preferred location of the activity.</p>	<p>Paragraph 7</p> <p>Paragraph 10</p> <p>Paragraph 10</p> <p>Paragraph 8</p> <p>Paragraph 9</p> <p>Paragraph 9</p> <p>Paragraph 9</p> <p>Paragraph 9</p> <p>Paragraph 9</p> <p>Paragraph 9</p> <p>Paragraph 9</p> <p>Not Applicable</p> <p>Not Applicable</p> <p>Paragraph 11</p>
Appendix 2, section 2 (1)(h)	<p>A plan of study for undertaking the environmental impact assessment process to be undertaken including-</p> <p>(i) A description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;</p> <p>(ii) A description of the aspects to be assessed as part of the environmental impact assessment process;</p> <p>(iii) Aspects to be assessed by specialists;</p> <p>(iv) A description of the proposed method of assessing the environmental aspects, including aspects to be assessed by specialists;</p> <p>(v) A description of the proposed method of assessing duration and significance;</p>	<p>Paragraph 12</p> <p>Paragraph 12.1</p> <p>Paragraph 12.2</p> <p>Paragraph 12.3</p> <p>Paragraph 12.4</p>

Section of the EIA Regulations, 2014	Description of EIA Regulations Requirements for Scoping Reports	Location in this Scoping report
	(vi) An indication of the stages at which the competent authority will be consulted;	Paragraph 12.5
	(vii) Particulars of the public participation process that will be conducted during the environmental impact assessment process;	Paragraph 12.6
	(viii) A description of the tasks that will be undertaken as part of the environmental impact assessment process;	Paragraph 12.7
	(ix) Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	Paragraph 12.8
Appendix 2, section 2 (1)(i)	An undertaking under oath or affirmation by the EAP in relation to- (i) The correctness of the information provided in the report;	Paragraph 13
	(ii) The inclusion of the comments and inputs from stakeholders and interested and affected parties; and	Paragraph 13
	(iii) Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.	Paragraph 13
Appendix 2, section 2 (1)(j)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment.	Paragraph 13
Appendix 2, section 2 (1)(k)	Where applicable, any specific information required by the competent authority.	To be included in final Scoping Report
Appendix 2, section 2 (1)(l)	Any other matter required in terms of section 24(4) (a) and (b) of the Act.	Not Applicable

## 2. DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

AB Enviro Consult (CC) is a registered consultancy, owned and operated as an independent unit by the registered owner and consultant: Prof. A.B. de Villiers

- Mr J.P. De Villiers joined the consultancy during 2004
- Mrs J.E. du Plooy is a consultant since 2001

### EXPERIENCE OF THE CONSULTANCY

Over a period of 25 years (1996-2021) this consultancy has successfully applied for, and obtained positive ROD's and EA's for more than 380 projects. Environmental Control Officer's duties are also performed on various projects.

The company was involved (from 1992-1994) in evaluation of 114 applications for the subdivision of land, 23 applications for resort developments, and 54 applications for business rights for the Department of Agriculture, Conservation and the Environment - North West Province.

The consultancy is qualified to undertake professional studies in waste management and is still involved in the development of waste disposal- (solid and liquid effluent), and emission studies. These studies are

conducted both academically and practically. This work relates to mine waste, domestic waste and effluent as well as to the monitoring of waste disposal. Environmental audits in this respect are undertaken on a regular basis.

## ACADEMIC AND PROFESSIONAL QUALIFICATIONS PROF DE VILLIERS

### Post-Matric Qualifications

YEAR	Qualification	Institution	Field of Study
1968	B.Sc.	PU FOR CHE	Geography, Geology
1970	HONNS. B.Sc.	PU FOR CHE	Soil Science
1974	M.Sc.	PU FOR CHE	Geography
1981	Ph.D.	UOFS	Geography

### PROFESSIONAL QUALIFICATIONS AND REGISTRATIONS

YEAR	Qualification/ Registration	Institution	Field of Study
1986	Professional Natural Scientist	S.A. Council for Natural Scientific Professions	Environmental Science
1994	Quality Auditor	ESKOM	Auditing
1998	Personnel & Verifying Auditor	SAATCA	Environmental Auditing
2006-2017	Environmental Assessment Practitioner	Interim Certification Board EAPSA	Environmental Science

### MEMBERSHIP AND PARTICIPATION IN SOCIETIES, COUNCILS, ETC.

Name of professional societies	YEAR	Capacity
S.A. Geographical Society.	1967-1996	Board Member
Society for Geography	1968-2004	Member
SAGS Western Transvaal	1985-1989 1987-1989 1996	Chairman
Africa Geographical Association	1993-1995	Vice-President.
Society for the Vaal River Catchment	1980-1999	Member
S.A. Society for Photogrammetry, Remote Sensing and Cartography	1984-1996	Member
Dendrological Society	1986-2005	Member
BirdLife South Africa	2003-present	Member
British Geomorphological Research Group	1985-1997	Member
Int Com on Water Resource Systems	1985-1997	Member
Int Com on Continental Erosion	1986-1990	Member
Int Com on Remote Sensing and Data Transmission	1986-1991	Member
Society for S.A. Geographers	1995-2005	Member
SA Photogrammetrical and Geo. Info.	1995-2003	Member
S.A. Association of Geomorphologists	1994-1999	Board Member and member
SADC Mine Dump Study Group	1996-2005	Member

## ACADEMIC AND PROFESSIONAL QUALIFICATIONS MR J.P. DE VILLIERS

<u>YEAR</u>	<u>Qualification</u>	<u>Institution</u>	<u>Field of Study</u>
1993	BA	PU FOR CHE	Geography, Economics
1994	HED	PU FOR CHE	Geography Economics
2006	B.Sc.(Honns) Cum Laude	North-West University	Environmental Management
2007	M.Sc.	North-West University	Geography

## PROFESSIONAL QUALIFICATIONS AND REGISTRATIONS

<u>YEAR</u>	<u>Qualification/ Registration</u>	<u>Institution</u>	<u>Field of Study</u>
2008	Basic Principles of Ecological Rehabilitation and Mine Closure	Centre for Environmental Management (North West University)	Ecological Rehabilitation
2019	Registered as Environmental assessment Practitioner	EAPASA Registration number: 2019/808	

## ACADEMIC AND PROFESSIONAL QUALIFICATIONS MRS J.E. DU PLOOY

<u>YEAR</u>	<u>Qualification</u>	<u>Institution</u>	<u>Field of Study</u>
1999	BA	PU FOR CHE	Geography, Tourism
2000	BA (Honns) Cum Laude	PU FOR CHE	Geography
2003	Masters degree in Environmental Management	PU FOR CHE	Environmental Management
2019	Registered as Environmental assessment Practitioner	EAPASA Registration number: 2019/1573	
2001	Aquabase Intro	AQUABASE	Hydrology
2001	Geomedia Professional	INTERTECH	GIS
2001	Map Info	SPATIAL TECHNOLOGY	GIS

### 3. DESCRIPTION OF THE ACTIVITY

The proposed development will be for the establishment of a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds, two Evaporation ponds and a Manure Composting area in order to treat the manure and the carcasses that will originate from the Sheep Feedlot. The proposed Composting area will trigger listed activities in terms of the Norms and Standards for organic waste composting, 2020 (GN No 561 of 25 June 2021). In terms of this Legislation: “3 (2) The owner of an organic waste composting facility with a capacity to process less than 10 tonnes per day of organic waste must register in terms of clause 3(3) of these Norms and Standards, and align with the requirements of applicable integrated waste management by-laws, and comply with the principle of duty of care as contained in section 28 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).” A separate application for the registration of the composting facility will be submitted with DEDEAT.

Please see Figure 1 below for a copy of the proposed Layout Plan. Please note that the Golf Club that is indicated on the Layout Plan is an existing feature on site and no eradication of indigenous vegetation will take place on this erf. Also note that the blue line on the Layout plan is a furrow that was used (Prior to 1990) to divert water that overflowed from a reservoir that was build in the Groot Brak River towards a farm dam that is situated south west of the proposed development. The dam wall of the reservoir was broken down in the early 1990’s and no water has since flown in this furrow. The servitude that was registered for this furrow has also since been cancelled..

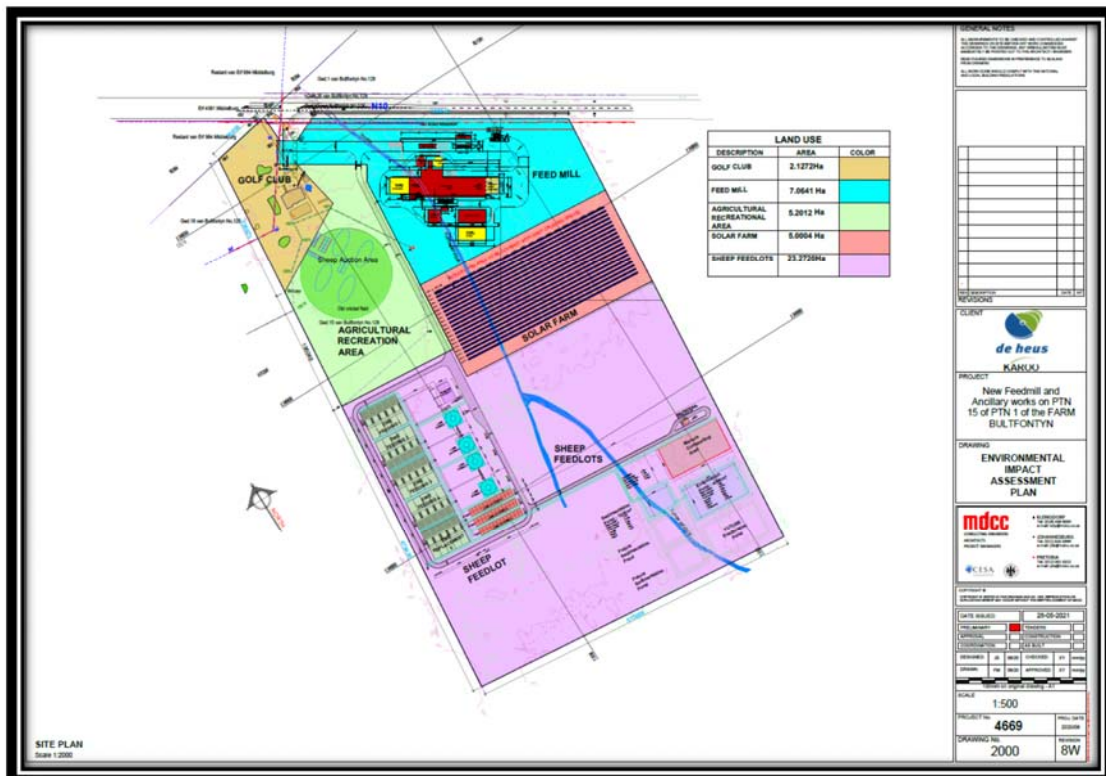


Figure 1: Proposed Layout Plan

The proposed Feed Mill will consist of an Industrial building covering an area of approximately 55m x 170m. This structure will be housing the following activities: Feed mixing, pill making, packaging and ancillary works including grain and feed storage. This area will be a Bio secure area with entrance control. Please see Figure 2 below for a copy of the proposed layout of the Feed Mill.

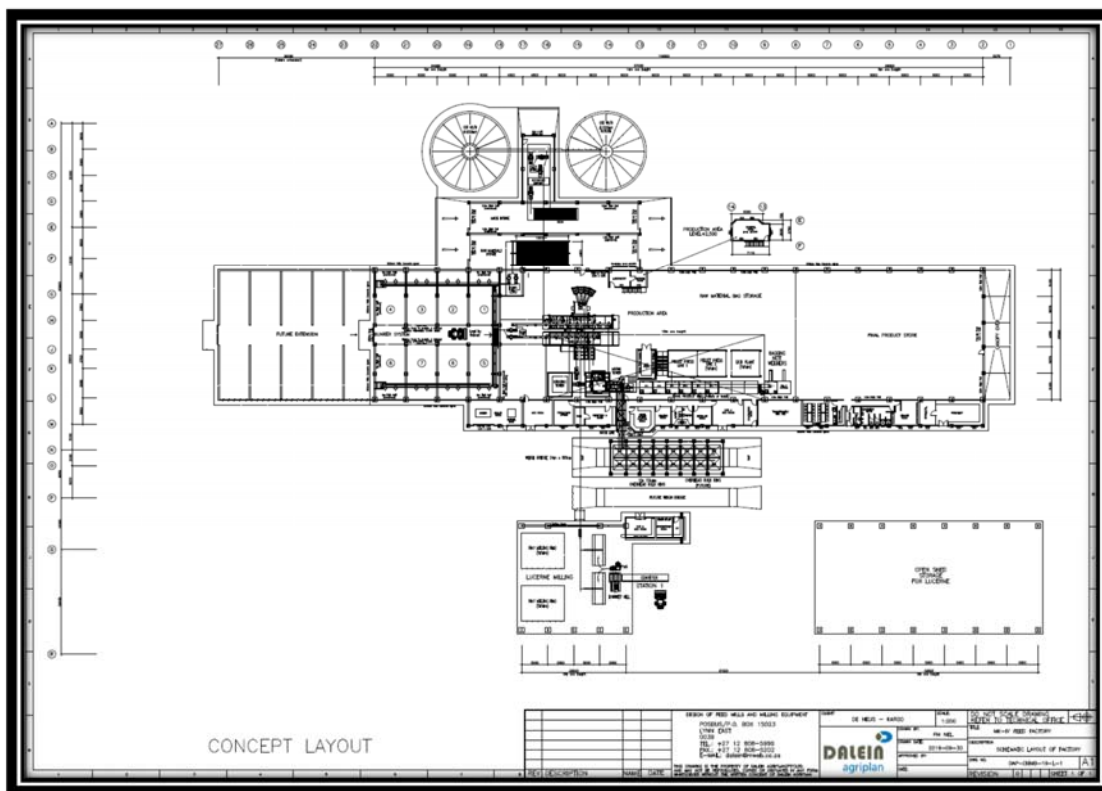


Figure 2: Layout Plan of the Feed Mill

As part of the operations of the Feed Mill, steam will have to be generated. This will be done means of a 2,5 ton, 10 bar coal boiler. The thermal output of the boiler is 1.567 MWA. A sealed bunker for the storage of coal has been designed to ensure that it will not cause any soil or water pollution. See Figure 3 for a copy of the design details for the coal storage area.

It is also proposed to store 23 000 litres of diesel and 800 litres of oil on site for the purpose of refuelling of trucks and machinery. Please see Figure 4 for the storage area designed for the oil and Figure 5 for the design of the proposed diesel tank and bunker.

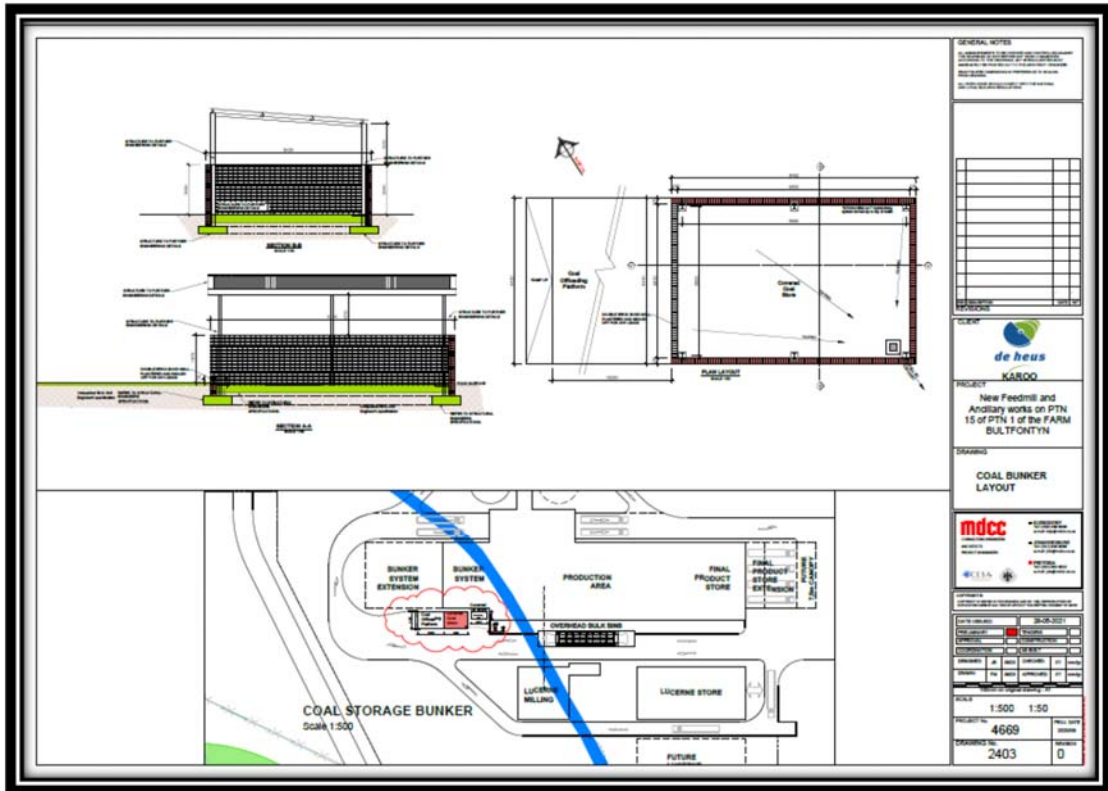


Figure 3: Storage facility for coal.

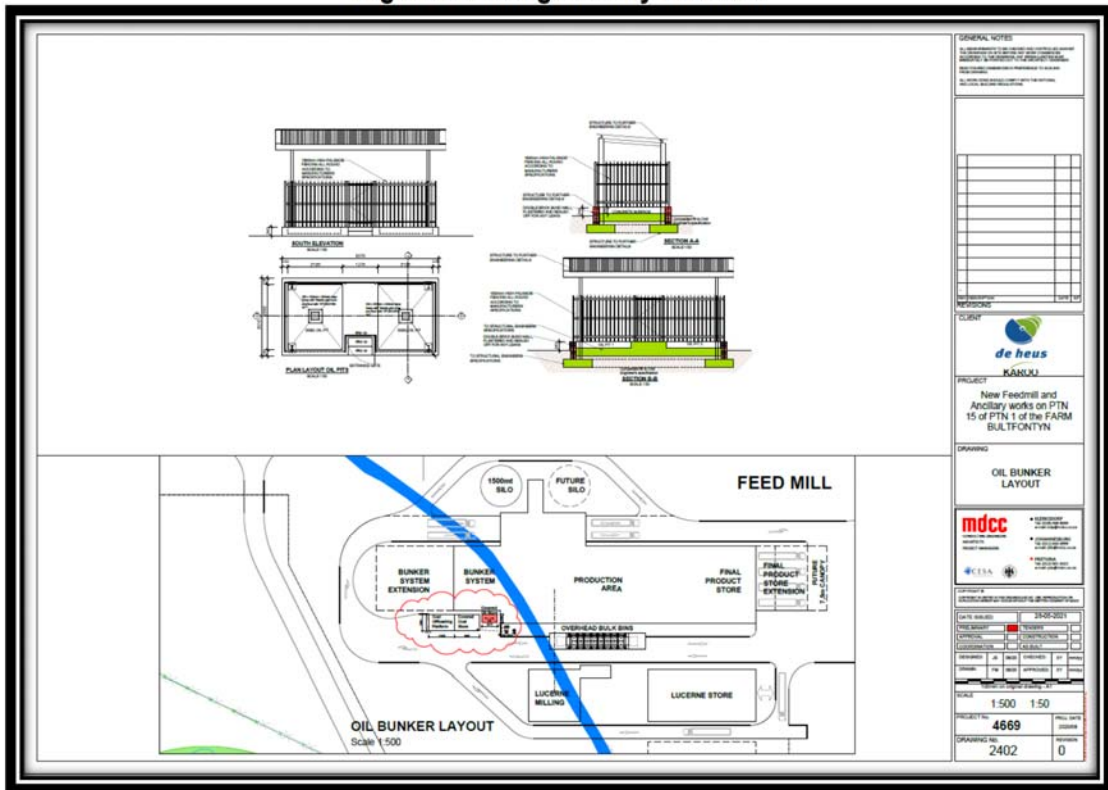


Figure 4: Storage facility for oil.



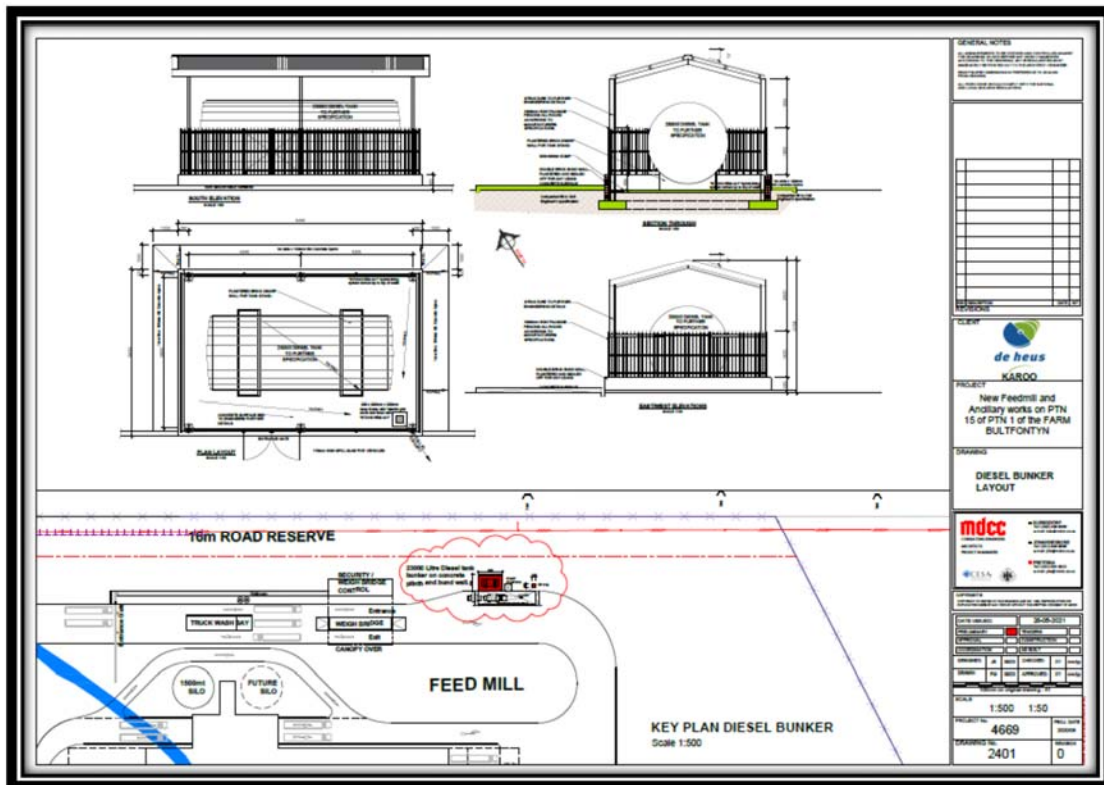


Figure 5: Storage facility for Diesel.

The Agricultural recreational area will be for Animal display and demonstrations, auctions and ancillary activities and will be Open to the public.

The proposed Solar Farm will be constructed to ensure sufficient, sustainable electricity for the development. The PV Solar plant can be described as follows:

- Grid-tied topology connected on the internal electrical network
- 2000kVA (0.8pf) = 2,500kW installed maximum PV output capacity
- PV panels to be used is 550W Monocrystalline (all required approval obtained for this implementation)
- Inverter equipment (DC to AC converting) will be SMA, Fronius or ABB
- Plant will function either on 400V or 11kV
- PV panels will be mounted on steel solar mounting system with casted concrete foundation blocks (see sample image on layout drawing, Figure 6)
- Crusher rock will be used for topsoil underneath the mounted PV panels

The proposed layout is illustrated in figure 6.



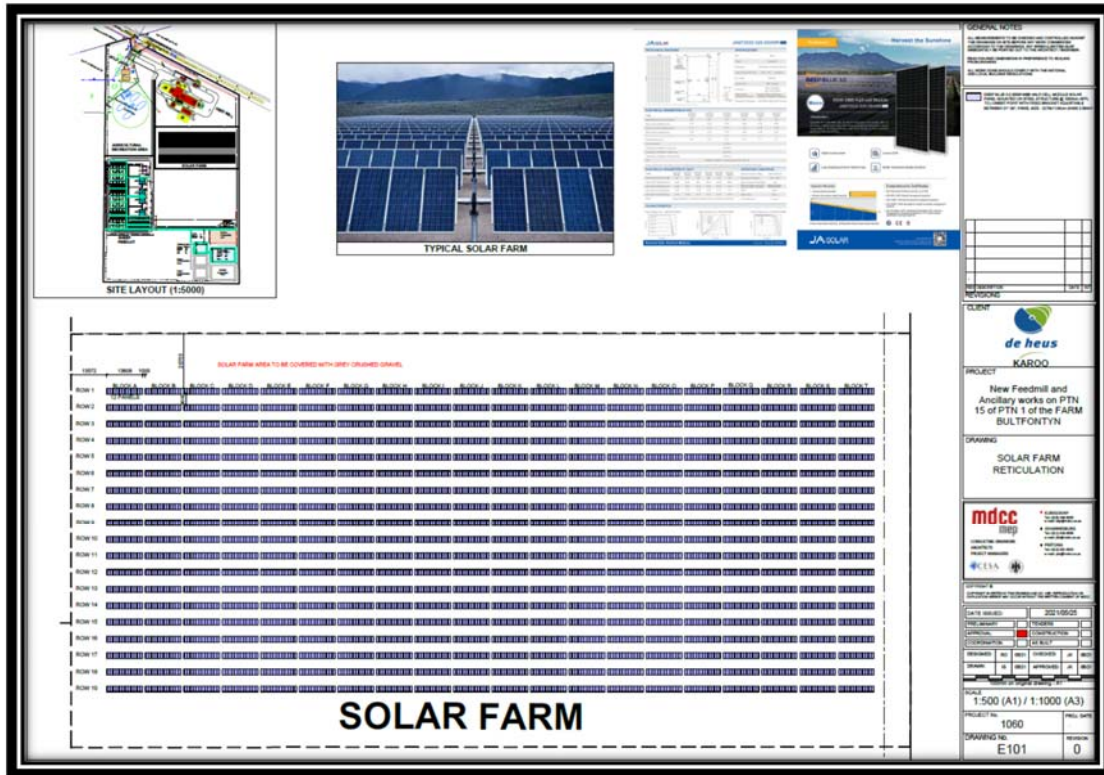


Figure 6: Proposed Layout plan for the Solar Farm.

The Sheep Feedlot will be designed for 10 880 head of sheep. Figure 7 is a copy of the proposed layout plan for the sheep feedlot.

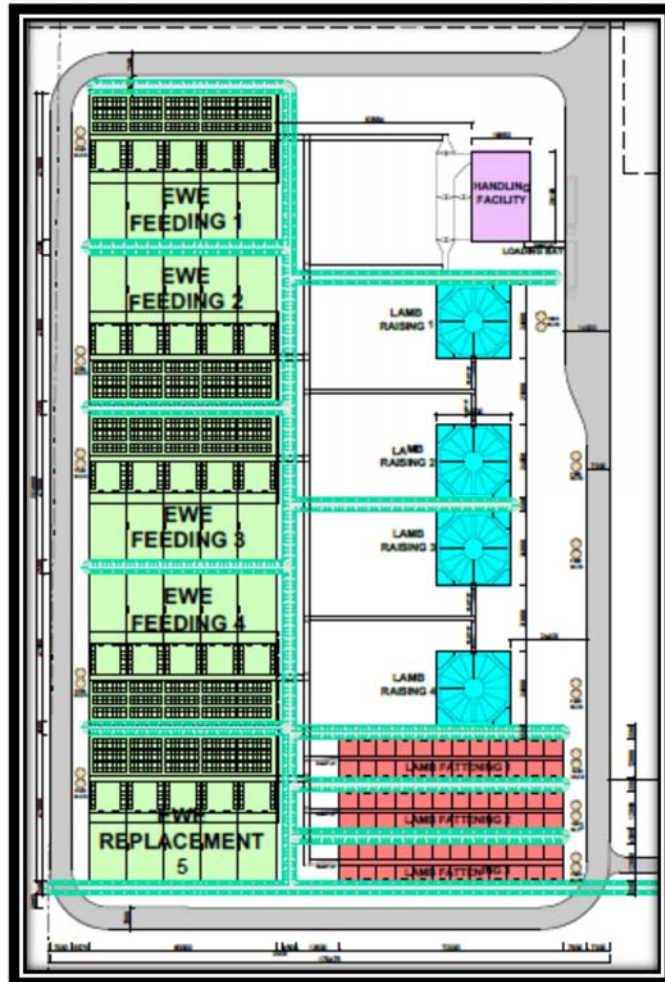


Figure 7: Layout Plan for proposed sheep feedlot.

In order to treat the manure and the carcasses that will originate from the Sheep Feedlot the construction of three Sedimentation ponds, two Evaporation ponds and a Composting area is proposed.

#### Sedimentation ponds

- The purpose of the sedimentation system is to remove settleable solid material from the feedlot runoff and prevent it from entering the evaporation ponds.
- The sedimentation pond is designed to have an overflow weir structure to discharge to the Evaporation pond.
- The sedimentation pond is sized, based on the number of head of sheep the facility will operate at and the peak rainfall (1:20 year return) characteristics of the area.
- The pond will have a volume of 1520m<sup>3</sup>,
- Bank Height 1.0m
- Bank Slopes 1V:3H
- 2.5m
- Length 46m
- Width 40m

- Depth 1.2m
- Constructed using Cut to Fill method, with selected material from site (Excluding Topsoil and Vegetation) Cut to Form the base of the pond and fill to form the side embankments. Each pond to receive a 300mm thick clay liner or Synthetic equivalent to provide a design permeability of less than 0.1mm/d. The Earth embankment shall also have a clay core.

#### Evaporation ponds

- The Evaporation pond is sized based on calculation of the annual water balance (Annual Rainfall versus Evaporation Statistics) and is designed to contain the runoff/ effluent from the feedlot site.
- Only in extreme rainfall events will the pond discharge treated effluent via an overflow spillway, designed to comply with a 1:50 year return.
- The pond will have a volume of 4500m<sup>3</sup>,
- Bank Height 1.0m
- Bank Slopes 1V:3H
- 2.5m
- Length 90m
- Width 55m
- Depth 1.2m
- Free Board 0.375m
- Constructed using Cut to Fill method, with selected material from site (Excluding Topsoil and Vegetation) Cut to Form the base of the pond and fill to form the side embankments. Each pond to receive a 300mm thick clay liner or Synthetic equivalent to provide a design permeability of less than 0.1mm/d. The Earth embankment shall also have a clay core.
- Water from this pond can be utilised for irrigation purposes.

The manure composting area will have a concrete base and will be able to accommodate the composting activities. The area allowed is 100x200m (2ha).

Please see Figure 8 for a copy of the proposed layout plan for the treatment facilities described above and Figure 9 for a flow chart of this facility.

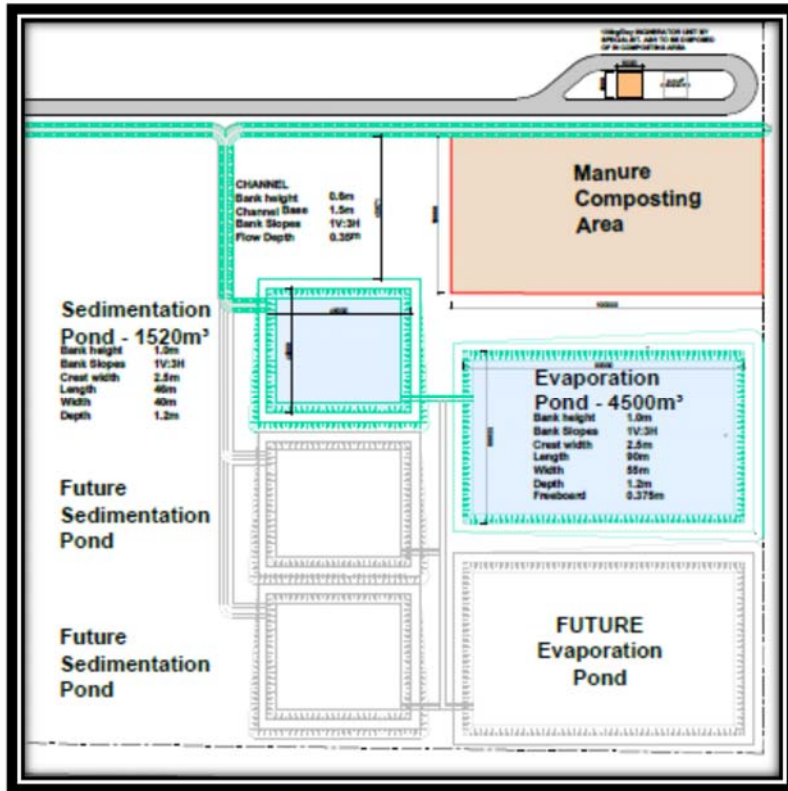


Figure 8: Layout Plan for proposed treatment facilities

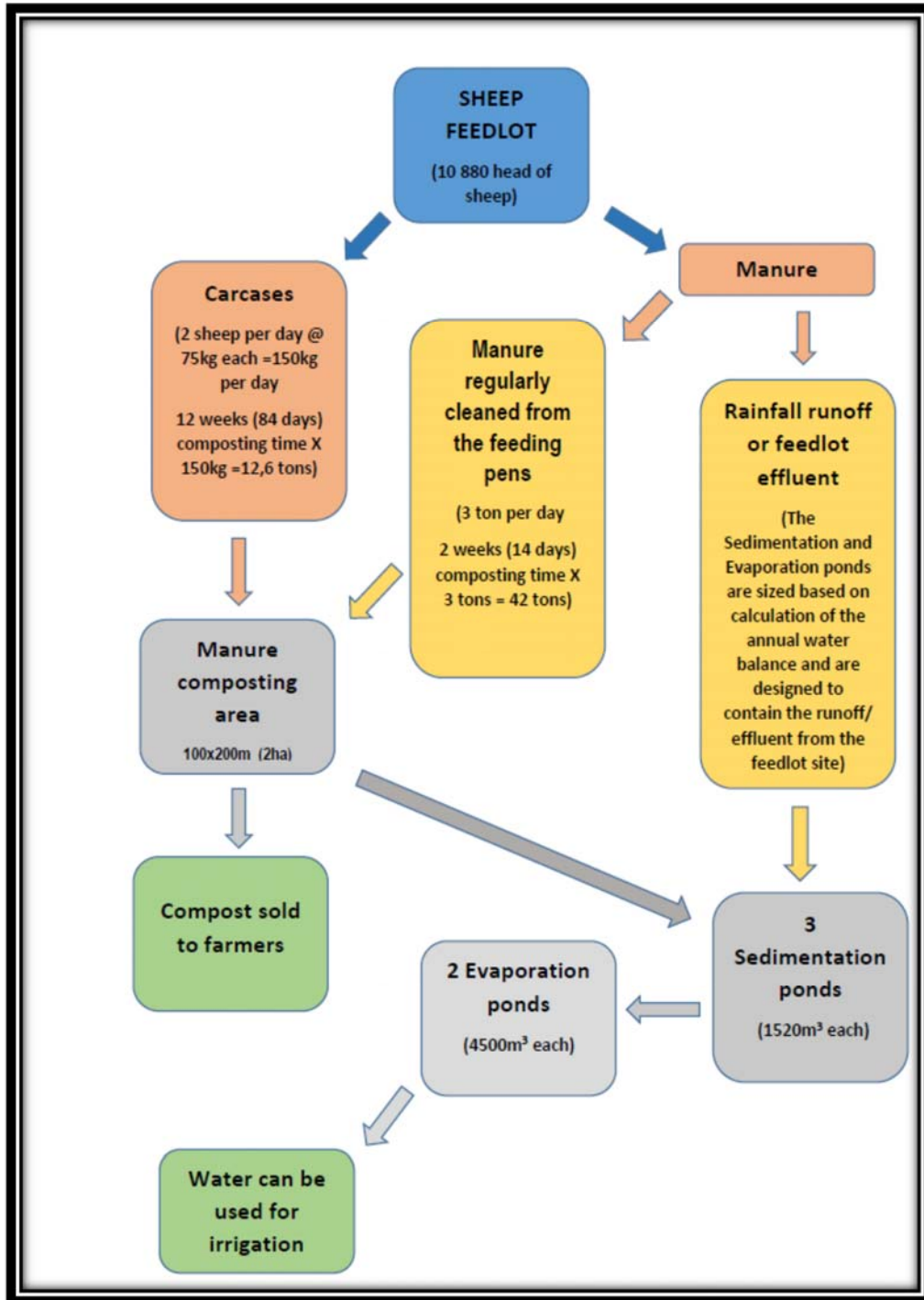


Figure 9: Flow chart for solid waste handling facility.

## CIVIL SERVICES

### BULK WATER SUPPLY

No municipal Bulk Water lines are available to supply the site with its calculated water demand. As part of the development of the site, new borehole/s will be installed to supply the site's water demands. The Geo-hydrologist will

provide a report on Borehole supply capacities, daily run times, and treatment of water (if required). Once more information is available, the layout will be updated to reflect borehole positions and tank positions.

### Pipe routing

The design of the water reticulation network is done to provide water to demand nodes within the site, which will include fire hydrant nodes.

### Hydraulic analysis of the water reticulation network

The water distribution network is analysed by utilizing Civil Designer's Aquanet Software. The appropriate pipe diameters were established by calculating peak draw-off flows from nodes and then adding fire hydrant flow (40 l/s) at each specific location. Water storage tanks will be installed on site to accommodate the water storage requirements. From there the water will be distributed to the network. Pipes are sized to limit flow velocities below 1,5 m/s for peak domestic flow only and 2,2 m/s for fire flow included.

## SEWER DESIGN

### Existing Infrastructure

No Existing municipal Sewerage systems exist for the site. Sewerage generated by the site will discharge into the conventional pipe network and make its way to a new Waste water package plant. The Package plant will be designed to accommodate all the effluent generated from the human populated areas. A specialist company will be approached to provide a turn-key solution for the site. Treated greywater will discharge from the package plant and will be let out into the evaporation pond.

The internal sewer drainage network was designed as a gravity system. The design was done to provide a sewerage connection to each required point with an optimised route to the Waste Water Package Plant.

The sewer reticulation network is hydraulically analysed by utilising Civil Designer software. The appropriate pipe diameter is determined by Civil Designer and adjusted to the minimum requirements of 160mm.

## ROADS AND STORM WATER DESIGN

### Existing Infrastructure

The following existing infrastructure is applicable to this proposed development:

- The N10, which forms the northern boundary of the site has periodic concrete culverts beneath it which assist the movement of stormwater from north to south, in line with the natural topography, these culverts disperse the stormwater on to the lower areas, where evaporation and infiltration to the soil occurs
- There is an existing stormwater drainage ditch which runs north to south across the site, which is abandoned due to changes up stream, it was previously protected by a servitude, which has since been cancelled. This ditch will be filled and closed up.
- Access to the proposed development will be from the N10, from which there is an existing widening of the road and a splay for dedicated traffic to the site.

### Access to site

The internal roads will be private roads, the Roads will be 7m wide and be designed to accommodate slow moving heavy livestock trucks.

➤ The internal roads will be classified as a local distributor, class 4, primarily due to the heavy load requirements. The structural design of the road pavement will be done according to the standards prescribed in the “Guidelines for Human Settlement and Planning” and TRH 14 (Catalogue Specification for Pavements). Provision will be made for the installation of pre-cast concrete kerbs or edge beams on both sides of streets.

The long sectional gradient of the road will be varied, but will be a minimum of 0.5%.

### Storm Water Design Criteria

Stormwater will be accommodated on the surface in the road prism. Shallow earth lined channels will be created to direct stormwater away from the roads and eventually discharge to the sedimentation pond and then the Evaporation Pond.

For the Sheep feedlot area, a special stormwater management plan will be implemented to comply to guidelines.

The following Standard Reference Documents, Codes of Practice, Policies and Guidelines will be used in the design of the stormwater drainage systems:

- TRH 15 – Subsurface Drainage for Roads.
- Guidelines for Human Settlement Planning and Design – (Red Book).
- Guideline for the Provision of Engineering Services in Residential Townships (Blue book).
- DoT Minimum Standards for Civil Engineering Services in Townships Draft
- SANRAL Road Drainage Manual
- SANS 1200 DB : 1989 – Earthworks (Pipe Trenches)
- SANS 1200 GA : 1982 – Concrete (Small Works)
- SANS 1200 GE : 1984 - Precast Concrete (Structural)
- SANS 1200 LB : 1983 – Bedding (Pipes)
- SANS 1200 LE : 1982 - Stormwater Drainage

### General Development Considerations

- Shallow earth lined stormwater channels will be allowed, for ease of maintenance.
- Runoff will be caught in stormwater channels and eventually discharge into the sedimentation pond from where settling occurs and then overflow in to the evaporation pond.
- Periodic Maintenance of the stormwater system will be needed to clean out sludge. The sludge will be transported to the manure composting area where it will be mixed and utilised for compost.

### Connections to existing road and stormwater infrastructure

- New roads of the proposed development will link with existing main surfaced National Road N10
- All stormwater systems will discharge into the new Sedimentation and Evaporation ponds as part of the sheep feedlot design

## SOLID WASTE MANAGEMENT

### Existing Infrastructure

The following existing infrastructure is applicable to this proposed development:

- No existing Solid Waste management exists for the site.

- The site is not serviced by municipal Waste collection services

#### **Feed Mill Production**

The Waste generated by the feed mill will be dumped into skips and transported to the closest municipal waste disposal site, this will be managed by the Clients' operations team and will occur on routine frequency as required.

#### **Sheep Feed lot Production**

Manure effluent will be cleaned out from the feeding pens routinely. Two actions take place in terms of management:

- Manure is manually collected and transported to the Manure Composting Area where it will be aired, dried and process as a by-product from the sheep feedlot.
- In the event of rainfall, the manure will discharge into the Stormwater channels and flow towards the sedimentation pond, where settling will occur and then overflow and enter the evaporation pond.
- The evaporation pond has been sized to accommodate the 1:20 year rainfall return period, and accompanied with high evaporation (Based on S-Pan) values, will only overflow on rare occurrences.
- Waste generated by the Sheep Feedlots will be managed by the Clients' operations team and will occur on routine frequency as required.

#### **4. DESCRIPTION OF THE PROPERTY**

The site is located on the outskirts of Middelburg along the N10 in the direction of Cradock. The site is approximately 42.8266 ha in extent and is located on Portion 15, of Portion 1 of the Farm Bultfontyn, Middelburg, Eastern Cape Province. See Figure 10 for a copy of the locality map. The site is located approximately 4,2 kilometers south east of the City Centre of Middelburg, 1,7 kilometers south of Midros and 2,5 kilometers south east of Kwanonzame. An Airfield is located 1,5 kilometers south of the site. The site falls within an area that is under the jurisdiction of the Inxuba Yethemba Local Municipality and the Chris Hani District Municipality.





Figure 10: Locality Map.

The Middelburg Golf Course is located adjacent and west of the site. See Photograph 1. The remains of a Cricket Oval/field is located close to the Golf Club house. The Cricket Oval/field is demarcated by a soil berm. The Cricket oval was constructed between February 2016 and October 2018 (According to the Google Earth Images) and was never used. See Photograph 2.



Photograph 1: Entrance to the site. Golf course on the right and site on the left. Clubhouse in the background.



Photograph 2: The circle that you can see on Google is in fact an attempt to have established a cricket ground.

The site used to form part of the Golf course as it used to be an 18 hole course and has since been reduced to a 9 hole course. Old structures (Old Golf tees (Photograph 3) and old greens (Photograph 4)) associated with this activity can be seen at various locations on the site.



Photograph 3: Remnants of an old golf tee box.





Photograph 4: Remnants of Old "oil green" that was part of the golf course.

The blue line on the Layout plan is a furrow that was used (Prior to 1990) to divert water that overflowed from a reservoir that was built in the Klein Brak River towards a farm dam that is situated south west of the proposed development. Since the dam wall of the reservoir was broken down in the early 1990's there has been no water in the furrow and this structure has become redundant. The servitude that was registered for this furrow has also since been cancelled. See Photograph 5.



Photograph 5: The canal on site that used to channel water from the Klein Brak River towards a dam located towards the south of the site.



Photograph 6: View towards the north. N10 in the background.



Photograph 7: View towards the north east.





Photograph 8: View towards the east.



Photograph 9: View towards the south east.



Photograph 10: View towards the south.



Photograph 11: View towards the south west.





Photograph 12: View towards the west.



Photograph 13: View towards the North West.

Large bare areas (See Photograph 14) are present where signs of sheet erosion are visible. Signs of excavations (See Photograph 15 and 16) or scraping of extensive areas are noticeable despite a “good rainfall season”. A number of pioneer and alien plant species that are conspicuous may also be reflection of possible “harsh soil conditions” and/or disturbances of the past. The Topographical map of the area identifies these barren areas as Eroded Areas. See Figure 11.



Photograph 14: Excavations on site.



Photograph 15: Barren areas on site.





Photograph 16: Barren areas on site

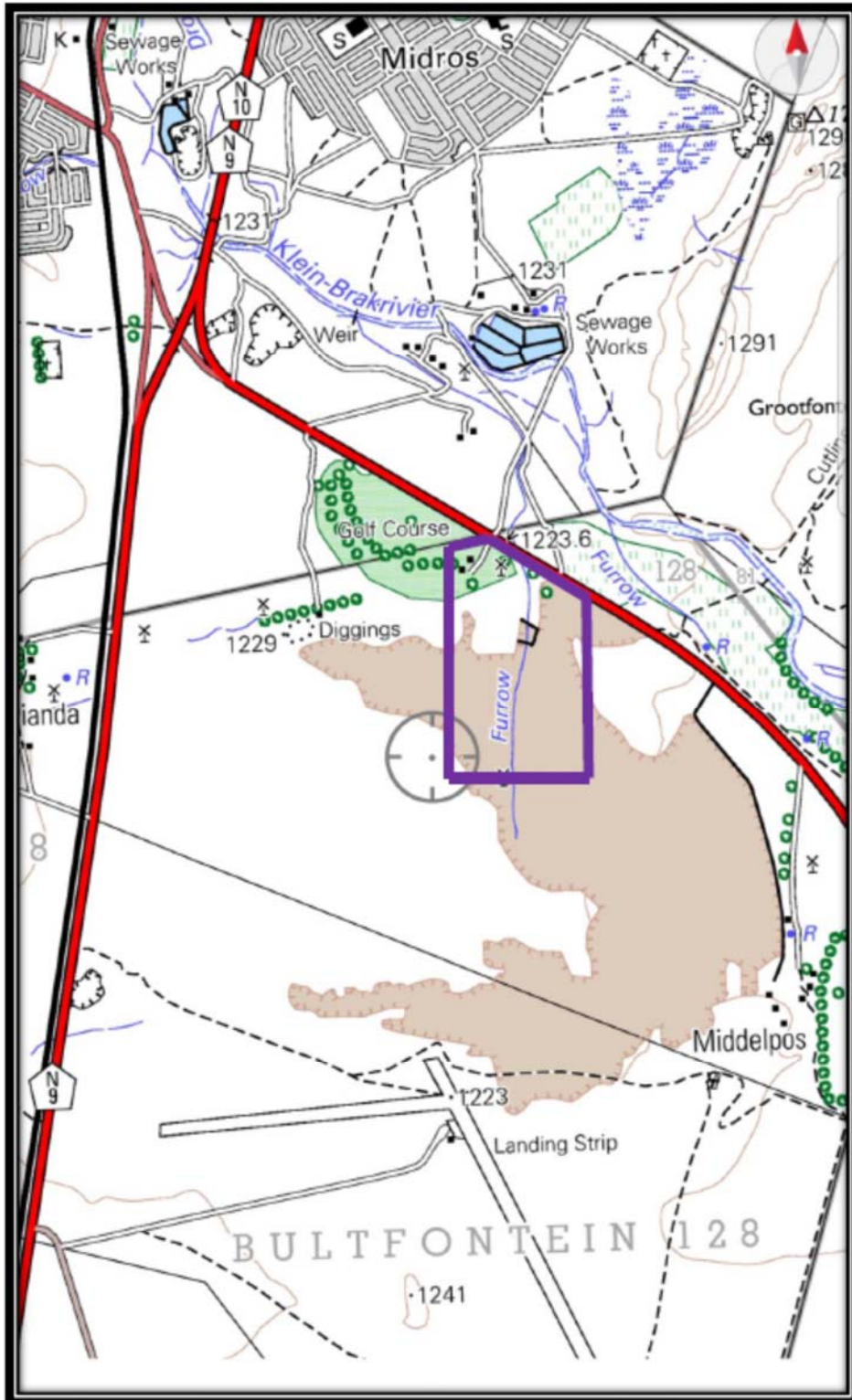


Figure 11(a). 1:50 000 Topographical map (3125CA Middelburg) of the area (purple outline).

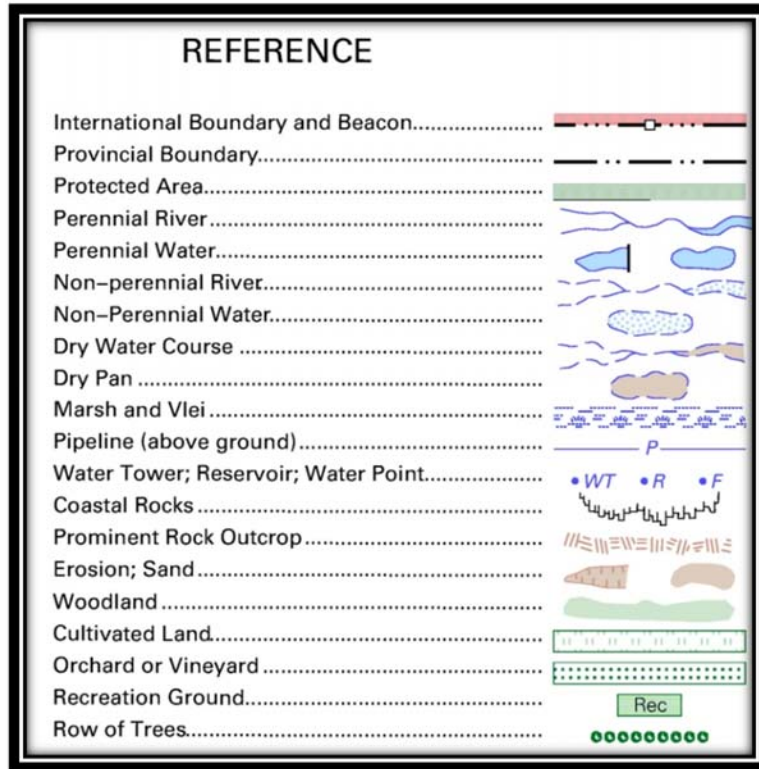


Figure 11(b): Reference for 1:50 000 Topographical map (3125CA Middelburg).

Site Co-ordinates

Latitude (S):

Longitude (E):

Middle point of the site

31°	31'	47.07"	25°	01'	53.27"
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## 5. LEGAL AND OTHER REQUIREMENTS

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
<i>The Bill of Rights, Constitution of South Africa, Constitution Act (Act No. 108 of 1996) Section 27 (1)(b)</i>	The Constitution of the Republic of South Africa is the legal source of all law, including environmental law, in South Africa. The Bill of Rights is fundamental to the Constitution of South Africa and in, section 24 of the Act, it is stated that:  Everyone has the right (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations through reasonable legislative and other	National Government	1994

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	<p>measures that (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</p> <p>Given that environmental management is founded partly on the principles of public participation, Section 195 of the Constitution is of primary relevance:</p> <p>(1) Public administration must be governed by the democratic values and principles enshrined in the constitution, including the following principles: (a) (b) (c) (d) (e) Peoples needs must be responded to, and the public must be encouraged to participate in policymaking. (f) Public administration must be accountable. (g) Transparency must be fostered by providing the public with timely, accessible and accurate information (Government Gazette, 1996).</p>		
<i>National Environmental Management Act No. 107 of 1998 as amended.</i>	<p>NEMA is the guiding legislation that has been considered during the Environmental Impact Assessment process and the compilation of this Scoping Report.</p> <p>The developer must be mindful of the principles, broad liability and implications associated with NEMA and must eliminate or mitigate any potential impacts.</p> <p>The developer must also be mindful of the principles, broad liability and implications of causing damage to the environment.</p> <p>The developer must also comply with the EIA Regulations (2014) (amended 2017) in the terms of the Act which specifies when an environmental authorisation is required and the nature of the EIA process</p>	National & Provincial (DEA And DEDEAT)	27 November 1998
<i>New Regulations 2014 in terms of NEMA</i>	Legislation consulted during the environmental impact assessment process to determine whether any listed activities would be triggered. The Regulations were also consulted to determine inter alia the requirements regarding the contents of Scoping reports and the public participation process that should be followed.	National & Provincial (DEA And DEDEAT)	7 April 2017
<i>National Water Act (36 OF 1998)</i>	National Water Act (NWA), 1998 (Act 36 of 1998) is the primary statute providing the legal basis for water management in South Africa and has to ensure ecological	Department of water and sanitation	1998

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	<p>integrity, economic growth and social equity when managing and using water.</p> <p>The major objectives of the National Water Act are to:</p> <ul style="list-style-type: none"> <li>•Aid in providing basic human needs;</li> <li>•Meet the growing demand of water in a sustainable manner;</li> <li>•Ensure equal access to water and use of water resources;</li> <li>•Protect the quality of water of natural resources;</li> <li>•Ensure integrated management of water resources;</li> <li>•Foster social and economic development; and</li> <li>•Conserve aquatic and related ecosystems.</li> </ul> <p>Section 19 of the National Water Act states that the person responsible for land upon which any activity is or was performed which causes, has caused or is likely to cause, pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring.</p> <p>The NWA is concerned with the overall management, equitable allocation and conservation of water resources in South Africa. To this end, it requires registration of water users and licenses to be obtained for water use except for certain limited instances set out in the Act. These instances include domestic use, certain recreational use, where the use occurs in terms of an existing lawful use or where the Department of Water and Sanitation (DWS) has issued a general authorisation that obviates the need for a permit.</p> <p>Water use for which a permit is required: For the purposes of this Act, water uses for which a permit is required (amongst other), are defined in Section 21 as follows:</p> <ul style="list-style-type: none"> <li>□ Taking water from a water resource.</li> <li>□ Storing water.</li> <li>□ Impeding or diverting the flow of water in a watercourse.</li> <li>□ Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit.</li> <li>□ Disposing of waste in a manner which may detrimentally impact on a water resource.</li> <li>□ Altering the bed, banks, course or characteristics of a watercourse.</li> </ul>		

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
<p><i>National Environmental Management: Biodiversity Act (NEMBA) (ACT NO. 10 OF 2004)</i></p>	<p>The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004), provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith.</p> <p>The Act provides for the management and conservation of South Africa's biodiversity and the protection of species and ecosystems that warrant national protection. The objectives of this Act are to:</p> <p>a) Provide, within the framework of the National Environmental Management Act;</p> <p>b) Manage and conserve of biological diversity within the Republic; and</p> <p>c) Promote the use of indigenous biological resources in a sustainable manner.</p> <p>In terms of Chapter 4 of the Above Act:</p> <p>52. (1) (a) The Minister may, by notice in the Gazette, publish a national list of ecosystems that are threatened and in need of protection.</p> <p>(b) An MEC for environmental affairs in a province may, by notice in the Gazette, publish a provincial list of ecosystems in the province that are threatened and in need of protection.</p> <p>(2) The following categories of ecosystems may be listed in terms of subsection:</p> <p>(a) critically endangered ecosystems, being ecosystems that have undergone severe degradation of ecological structure, function or composition as a result of human intervention and are subject to an extremely high risk of irreversible transformation;</p> <p>(b) endangered ecosystems, being ecosystems that have undergone degradation of ecological structure,</p>	<p>National &amp; Provincial (DEA And DEDEAT)</p>	<p>2004</p>

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	<p>function or composition as a result of human intervention, although they are not critically endangered ecosystems;</p> <p>(c) vulnerable ecosystems, being ecosystems that have a high risk of undergoing significant degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems or endangered ecosystems; and</p> <p>(d) protected ecosystems, being ecosystems that are of high conservation value or of high national or provincial importance, although they are not listed in terms of paragraphs (a), (b) or (c).</p> <p>(3) A list referred to in subsection (1) must describe in sufficient detail the location of each ecosystem on the list. 53 (1) The Minister may, by notice in the Gazette, identify any process or activity in a listed ecosystem as a threatening process.</p> <p>(2) A threatening process, identified in terms of subsection (1) must be regarded as a specified activity contemplated in section 24(2)(b) of the National Environmental Management Act (1998) and a listed ecosystem must be regarded as an area identified for the purpose of that section.</p>		
<p><i>National Environmental Management: Protected Areas Act (ACT NO. 57 OF 2003)</i></p>	<p>This Act aims to provide for a national system of protected areas in South Africa as part of a strategy to manage and conserve its biodiversity. The Protected Areas Act tries to ensure the protection of the entire range of biodiversity, referring to natural landscapes and seascapes. The Act makes express reference to the need to move towards Community Based natural Resource Management (CBNRM) as its objectives include promoting the participation of local communities in the management of protected areas. The purpose of the Act is:</p> <ul style="list-style-type: none"> <li>•To protect ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes and their ecological integrity.</li> <li>•To conserve biodiversity in those areas;</li> <li>•To protect South Africa's rare species;</li> <li>•To protect vulnerable or ecologically sensitive areas;</li> </ul>	<p>National &amp; Provincial</p>	<p>2003</p>

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	<ul style="list-style-type: none"> <li>•To assist in ensuring the sustained supply of environmental goods and services;</li> <li>•To provide for the sustainable use of natural and biological resources;</li> <li>•To create or augment destinations for nature-based tourism;</li> <li>•To manage the interrelationship between natural environmental biodiversity, human settlement and economic development;</li> <li>•To contribute to human, social, cultural, spiritual and economic development;</li> <li>•To rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species.</li> </ul> <p>This Act further stipulates various criteria which must be met before an area can be declared as a special nature reserve, national park, nature reserve and protected environment. It also prescribes a range of procedures, including consultation and public participation procedures which must be followed before any of the kinds of protected areas are declared.</p>		
<p><i>National Heritage Resources Act, Act No. 25 of 1999</i></p>	<p>Legislation consulted during the impact assessment process, to determine the legal requirements relating to the management of heritage resources that are present in and around the site.</p> <p>The protection of archaeological and paleontological resources is the responsibility of a provincial heritage resources authority and all archaeological objects, paleontological material and meteorites are the property of the State. "Any person who discovers archaeological or paleontological objects or material or a meteorite in the course of development must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority".</p>	SAHRA	1999
<p><i>National Environmental Management: Waste Act, Act No. 59 of 2008, DEDEAT together with the List of Waste Activities that Have, or are Likely to Have, a Detrimental Effect on the Environment, GN No. 921 of 29 November 2013 and</i></p>	<p>Legislation consulted to determine whether a waste licence will have to be obtained for the development.</p> <p>The purpose of this Act relates to the proper disposal of waste. The Act also provides for the waste related activities where a Waste Licence is required. This includes the recycling and refining of waste.</p>	National & Provincial (DEA And DEDEAT)	2008



Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
<i>Norms and Standards for organic waste composting, 2020 (GN No 561 of 25 June 2021).</i>	<i>In terms of this Legislation: "3 (2) The owner of an organic waste composting facility with a capacity to process less than 10 tonnes per day of organic waste must register in terms of clause 3(3) of these Norms and Standards, and align with the requirements of applicable integrated waste management by-laws, and comply with the principle of duty of care as contained in section 28 of the National Environmental Management Act, 1998 (Act No. 107 of 1998)."</i>	<i>A separate application for the registration of the composting facility will be submitted with DEDEAT.</i>	June 2021
<i>Hazardous Substances Act (15 of 1973)</i>	This Act provides for the control of substances which may cause injury, ill-health or death by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature. It divides these hazardous substances into groups relating to the degree of danger and provides for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances and products.	National & Provincial (DEA And DEDEAT)	1973
<i>Mineral and Petroleum Resources Development Act (MPRDA), Act 28 of 2002</i>	<p>The Act distinguishes between mining permits and mining rights as follows:</p> <p>Mining Permit: Required where the activity will last less than two years and affects an area of less than 1.5ha in extent (valid for 3 years). In terms of the Act a mining permit requires a submission of an Environmental Management Plan (EMP to DME for approval prior to the onset of activities).</p> <p>Mining Right: Required for larger mining operations (renewable and valid for 30 years). In terms of the Act a mining right requires the submission of an Environmental Management Programme (EMPr) to DME for approval prior to the onset of activities.</p> <p>In light of their limited spatio-temporal extent, borrow pits (for the provision of construction material) and quarry operations would typically require a mining permit.</p> <p>The closure of borrow pits requires the submission of a closure application; this must be submitted within 180 days after ceasing operations. It is important to recognise that the mining right/permit holder's liability persists until such time as a Closure Certificate has been issued by DMR.</p>	Relevant Provincial Authorities.	2002

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	No Borrow pits will be used for this proposed development and as such this Law will not apply to this application.		
<p><i>National Environmental Management: Air Quality Act (Act 39 of 2004) and:</i></p> <p><i>Government Notice 893 in Government Gazette 37054 dated 22 November 2013. Commencement date: 22 November 2013</i></p> <p><i>As amended by:</i></p> <p><i>Government Notice 551 in Government Gazette 38863 dated 12 June 2015. Commencement date: 12 June 2015.</i></p> <p><i>Government Notice 1207 in Government Gazette 42013 dated 31 October 2018. Commencement date: 31 October 2018.</i></p> <p><i>Government Notice 687 in Government Gazette 42472 dated 22 May 2019. Commencement date: 22 May 2019.</i></p> <p><i>Government Notice 421 in Government Gazette 43174 dated 27 March 2020. Commencement date: 27 March 2020.</i></p>	<p>To protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social Development.</p> <p>The following Categories were considered for this application:</p> <p><u>Category 1: Combustion Installations</u>  <u>Subcategory 1.1: Solid Fuel Combustion Installations</u>  <u>Description:</u> Solid fuels combustion installations used primarily for steam raising or electricity generation.  <u>Application:</u> All installations with design capacity equal to or greater than 50 MW heat input per unit, based on the lower calorific value of the fuel used.  <u>Outcome:</u> The proposed development will not trigger this Category, as only a maximum of 2 MW heat inputs per unit will be generated.</p> <p><u>Category 10: Animal Matter Processing</u>  <u>Description:</u> Processes for the rendering cooking, drying, dehydrating, digesting, evaporating or protein concentrating of any animal matter not intended for human consumption.  <u>Application:</u> All installations handling more than 1 ton of raw materials per day.  <u>Outcome:</u> The proposed development will be triggered by the Category, as only a maximum of 150kg per day will be processed.</p>	<p>Relevant Authorities. Provincial</p>	<p>2004</p>
<i>The Conservation of Agricultural Resources Act (Act 43 of 1983)</i>	This Act regulates the flow pattern of runoff water, control of weeds and invader plants.	Relevant Authorities. Provincial	1983
<i>National Veldt and Forest Fire Act (Act 101 of 1998)</i>	Chapter 4 places a duty on owners to prepare and maintain firebreaks.	Relevant Authorities. Provincial	1998
<i>National Forests Act, Act 84 of 1998 (NFA) DEDEAT with GN1602 of December 2016.</i>	During the construction phase of the development certain protected trees may be affected. Licences will have to be obtained from the Minister before the affected trees may be cut, disturbed, damaged or destroyed. GN1602 of December 2016 contains the list of protected trees.	National and Provincial authorities.	1998
<i>Occupational Health and Safety Act (Act 85 of 1993)</i>	To provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery and the protection of persons other than persons at work against hazards to health.	Relevant Authorities. Provincial	1993

The study is conducted in such a way as to comply with the instructions regarding such studies and reports (as contained within the above-mentioned documents).

The following aspects will be dealt with:

#### SCHEDULE

Actions	Timeframe
<b>1. Project Initiation and Scoping Phase</b>	
1.1 Communication with authorities and source and analyse relevant baseline information and undertake site inspections	5 days
1.2 Identify key interested and affected parties (I&APs)	1 day
1.3 Compilation of terms of reference for specialist studies	2 days
1.4 Commission specialist studies	1 day
1.5 Compile Environmental Application Form for the project and submit to the authorities	Once the Environmental Application form has been submitted, the scoping report which has been subject to public participation (30 days) needs to be submitted within 44 days
1.6 Compile draft Scoping Report (SR) and make available to the public for a 30 day commenting period	5 days for compilation and 30 days for commenting period
1.7 Prepare an Information Sheet (summary of the draft SR) and distribute to I&APs	1 day
1.8 Compile and publish media notices (for the EIA) in relevant newspapers	7 days
1.9 Compile and place poster/s along the boundary of the site	1 day
1.10 Receive and address first round of comments from public	3 days
1.11 Should the draft SR require substantial changes, these changes will be incorporated into the final SR and distributed	The competent authority must within 43 days of receipt of the scoping report accept / refuse the report with or without conditions
1.12 Address comments received on the SR, finalise Scoping Report and submit to authorities	As above
1.13 Compile a Plan of Study for the assessment phase and submit to authorities for approval	As above
<b>The total time allowed for the Scoping phase of the application</b>	<b>87 days</b>
<b>2. Assessment Phase</b>	
2.1 Undertake assessment phase by assessing and evaluating potential impacts identified in the Scoping phase.	5 days
2.2 Review and manage specialist studies required.	Ongoing
2.3 Compile a draft Environmental Impact Report (EIR).	5 days
2.4 Compile a draft Environmental Management Plan for the Construction phase.	Included above
2.5 Compile an Information Sheet (summary of EIR) and distribute to identified I&APs	1 day
2.6 Distribute DEIR to I&APs	1 day
2.7 Allow the identified public to provide comment within a 30 day period on above report.	3 days for compilation and 30 days for commenting period
2.8 Address comments received and finalise EIR	3 days
2.9 Should the draft EIR require substantial changes, these changes will be incorporated into the final EIR and distributed for a 21 day commenting	3 days plus 21 day commenting period
2.10 Finalise EIR and update comments and response table for submission to authorities	5 days

2.11 Submit EIR to authorities for a final decision	1 day (The department requires the submission of the Final EIR within 106 days of the approval of the Scoping report), therefore all information from the client's side must be provided within this timeframe to ensure the application is not withdrawn)
2.12 Once the decision is issued, all I&Ps must be formally informed of the decision	The Competent Authority has 107 days from the date of receipt of the EIR and EMPr to determine the application
Total number of days allowed for the compilation and consideration of the EIR	213 (may require additional 50 days public participation and consideration)
TOTAL AMOUNT OF DAYS:	300-350 days

## 6. NEED AND DESIRABILITY

The National Development 2030 mentions that South Africa can eliminate poverty and reduce inequality by 2030 and this will require change, hard work, leadership and unity. Its goal is to improve the life chances of all South Africans, but particularly those young people who presently live in poverty. In the past, we expected government to do things for us. What South Africa needs is for all of us to be active citizens and to work together – government, business, communities – so that people have what they need to live the lives they would like.

The White Paper on Local Government<sup>1</sup> (1998) introduces the concept of “developmental local government” which is defined as: “Local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs, and improve the quality of their lives.” However the same document makes it clear that:

*“Local Government is not directly responsible for creating jobs. Rather, it is responsible for taking active steps to ensure that the overall economic and social conditions of the locality are conducive to the creation of employment opportunities.”*

The Chris Hani District Municipality developed and adopted a District Development Agenda that focuses on the development of all its Six Local Municipalities through the identification of competitive advantages of its local municipalities. This was later translated into an Agro Industrial Plan that has been used as a spring board to the proposed Special Economic Zone.

The Chris Hani Regional Development Strategy provides focused areas around which resources can be leveraged and mobilised in order to contribute to the broad overall objective of ensuring that all people in the district are able to benefit from the economy. The Competitive Advantage therefore for the district points to the broadly defined agricultural sector as the one with the most potential to contribute to job creation, promoting of livelihoods opportunities and contributing to sustained social and economic growth and development.

Whilst crop production and agro-processing sector remain important areas of intervention, the present cost of transport to high volume markets will most likely render local production uncompetitive until substantial economies of scale and consistent quality can be achieved.

Value chain integration implies looking at all the components of a particular sector and subsector and identifying what can be done or put in place to add value to what already exists, and in doing so, promote job creation and provide more livelihood opportunities.

While the districts’ agricultural potential is obvious, primary agricultural projects have had a minimal impact on unemployment. This situation necessitates strategies to increase value-added production by exploiting opportunities that exist along the various crop and livestock value chains. (Chris Hani District Municipality 2021-2022 Draft IDP)

Agriculture is one of the main economic sectors within the area. Agricultural activities can be sub-divided into two groups – crop farming and livestock farming. The Applicant has identified gaps in the value chain for both of these economic sectors being Lucerne (Crop farming) and sheep (Livestock farming). It is the intension of the applicant to add value to both of these identified agricultural sectors and in doing so, create jobs and infrastructure. The increased employment in the area during both the construction and operational phase will also result in increased expenditure, which, in addition, will mean that more than just the proposed jobs required for the proposed development will be created due to economic spin-offs that will result.

### Feed Mill

Feed mixing, pill making, packaging and ancillary works including grain and feed storage will form part of this operation. Lucerne that is produced extensively in the area and will be used to produce feed, thus adding value to primary products that are produced in the region. Maize that is also produced in the region will also be incorporated into the production process and a limited amount of this produce will also be value added. At full production the Feed Mill will produce 9 000 tons of feed per month and will generate 100 employment opportunities.

#### Agricultural recreational area.

This part of the proposed development will be for Animal display and demonstrations, auctions and ancillary activities and will be Open to the public, thus providing a platform for the people of the region to sell and display their animals and to come together as a community.

#### Solar Farm

Greenhouse gases (GHG), including CO<sub>2</sub> emissions are associated with the conventional provision of energy services and are a major cause of climate change. Globally, coal is the second largest primary energy source used worldwide (preceded by oil), and the first source for power generation. In terms of electricity generation or supply, South Africa is highly dependent on coal-fired power plants and therefore energy supply is carbon dioxide-intensive.

Renewable energy sources play a role in providing energy services in a sustainable manner, and in particular in mitigating climate change. Sustainable energy can be defined as energy which provides affordable, accessible and reliable energy services that meet economic, social and environmental needs within the overall developmental context of society, while recognising equitable distribution in meeting those needs. Sustainable energy is an element of sustainable development which is defined as development that meets the present needs and goals of the population without compromising the ability of future generations to meet theirs. On the overall sustainable development is underpinned by economic development (growth efficiency), social development (culture, heritage, poverty, and empowerment) and environmental development (pollution and natural resources).

The government of South Africa considers the use of renewable energy as a contribution to sustainable development. Sustainable development also implies the provision of electricity and other modern fuels to the commercial and industrial sectors to promote their economic competitiveness and future prosperity. (Department of Environmental Affairs (2015). EIA Guideline for Renewable Energy Projects. Department of Environmental Affairs, Pretoria, South Africa)

With the current situation of unreliable electricity provision in the Country, the Applicant has opted for the option of providing his own Electricity, thus ensuring a steady flow of electricity for his operations. In providing off-grid, renewable Electricity, the Applicant is also decreasing his Ecological footprint as he will not be using Electricity that has been generated from unrenewable energy sources.

#### Sheep Feedlot

The Sheep Feedlot will be designed for 10 880 head of sheep. Currently, only 24 sheep can be raised on the entire development site, as the area is very dry. The intensification of the Agricultural potential of the site is a huge advantage as the production capacity of the site will be raised from 24 to 10 880 head of sheep. This operation will also result in an additional 10 employment opportunities that will be generated.

#### Treatment Facilities

In order to treat the manure and the carcasses that will originate from the Sheep Feedlot the construction of three Sedimentation ponds, two Evaporation ponds and a Manure Composting area is proposed. The need for these activities lies in the fact that in order to ensure that the proposed development does not cause any harm to the Environment, potential pollution has to be curbed. The purpose of the sedimentation system is to remove settleable solid material from the feedlot

runoff and prevent it from entering the evaporation ponds. The Evaporation pond is sized based on calculation of the annual water balance (Annual Rainfall versus Evaporation Statistics) and is designed to contain the runoff/ effluent from the feedlot site.

The manure composting area will have a concrete base and will be able to accommodate the composting activities. The composting facility will generate additional income as the compost will be sold, thus ensuring that a potential source of pollution has been processed to a usable product.

Consistent with national priorities, environmental authorities must support *"increased economic growth and promote social inclusion"*, whilst ensuring that such growth is *"ecologically sustainable"*. In the National Spatial Development Perspective (NSDP) it is highlighted that, to achieve the goal of stimulating sustainable economic activities and to create long-term employment opportunities, it is required that spending on economic infrastructure is focused in priority areas with potential for economic development, with development to serve the broader societies' needs equitably.

## 7. ALTERNATIVES

One of the objectives of an EIA is to investigate alternatives to the proposed project. The IEM procedure stipulates that the environmental investigation needs to consider feasible alternatives for any proposed development. Therefore, a number of possible proposals or alternatives for accomplishing the same objectives should be identified and investigated. In order to ensure that the proposed development enables sustainable development, feasible alternatives must be explored (S. Cliff, 2015).

The identification, description, evaluation and comparison of alternatives are important for ensuring a sound environmental scoping process. Alternatives should be considered as a norm within the Environmental Process (S. Cliff, 2015).

There are two types of alternatives: Fundamental Alternatives and Incremental Alternatives.

### 7.1 Fundamental Alternatives

Fundamental alternatives are developments that are totally different from the proposed project description and usually include the following:

- Alternative property or location where it is proposed to undertake the activity.
- Alternative type of activity to be undertaken.
- Alternative technology to be used in the activity.

### 7.2 Incremental Alternatives

Incremental alternatives relate to modifications or variations to the design of a project that provide different options to reduce or minimise environmental impacts. There are several incremental alternatives that can be considered with respect to the proposed development, including:

- Alternative design or layout of the activity.
- Alternative operational aspects of the activity.

### 7.3 No-Go alternative

The EIA process is obligated to assess the status quo (i.e. the “No-Go” option). The No-Go alternative provides the assessment with a baseline against which predicted impacts resulting from the proposed development may be compared. A “No-Go” alternative has been assessed for the proposed development.

### 7.4 Alternative operational aspects of the activity

#### 7.4.1 Sheep Feed lot Mortality – Biomass Waste Disposal

A predicted mortality rate of 2 sheep / day should be considered whereby each sheep could have a maximum estimated mass of 75kg. Therefore, an anticipated mass of 150kg / day will be considered when selecting a desired disposal process.

Alternatives are being investigated based on these predictions and the following options can be considered for the carcass disposal:

##### 7.4.1.1 Manure Composting (Alternative 1)

Carcasses will be disposed into the manure composting area, whereby it will take approximately 5-6 months to decompose, per carcass, with respect to mass.

##### Advantages

Composting adds value to the carcass as it can be sold as compost.

##### 7.4.1.2 Incineration plant (Alternative 2)

The incineration process neutralises the danger of possible ground water pollution and converts the post-incineration residue into a sterile, easily disposable by-product which can be re-used.

The incineration units will be sized based on the above-mentioned mortality rate requirement for the site. The units are powered by either Diesel or Gas. In this instance, the viable option would be to adopt a diesel-operated unit due to the proposed diesel tank bunker facility located in the feed mill area of the site, and for efficient access. The stored diesel would be pumped into smaller tanks and transported via trucks to the Incineration facility, located near the manure composting area of the site.

##### Disadvantages

The incineration process causes air pollution and a licence will have to be obtained for this process. It will also require long-term external auditing that will render this option not viable in the long run.

##### 7.4.1.3 Mortality pit (Alternative 3)

A mortality pit entails the construction of a sealed container (normally an underground bunker) that the carcasses are disposed in.

##### Disadvantages

It is envisaged that with a feedlot of this scale, the mortality pit will not be viable, as it will have to have a very large capacity.

#### 7.4.1.4 No-go Alternative

The No-go Alternative has been considered for the proposed development as a hole. Should this Alternative be implemented the status quo will prevail and none of the advantages as listed in the “Need and desirability” section of this report will realise.



## 8. DESCRIPTION OF THE ENVIRONMENT THAT MAY BE AFFECTED BY THE PROJECT

### 8.1 BIO-PHYSICAL ASPECTS

#### 8.1.1 GEOLOGY AND SOIL

Referral to the geological map (1992 sheet 3124 Middelburg; 1:250 000 series) indicates that the entire area is underlain by rocks of the Karoo Supergroup comprising sedimentary rocks of the Permian Balfour Formation of the Adelaide Subgroup of the Beaufort Group, which comprises mainly mudrock and sandstone (Figure 12), and in turn are overlain by Quaternary calcrete and alluvial sediments.

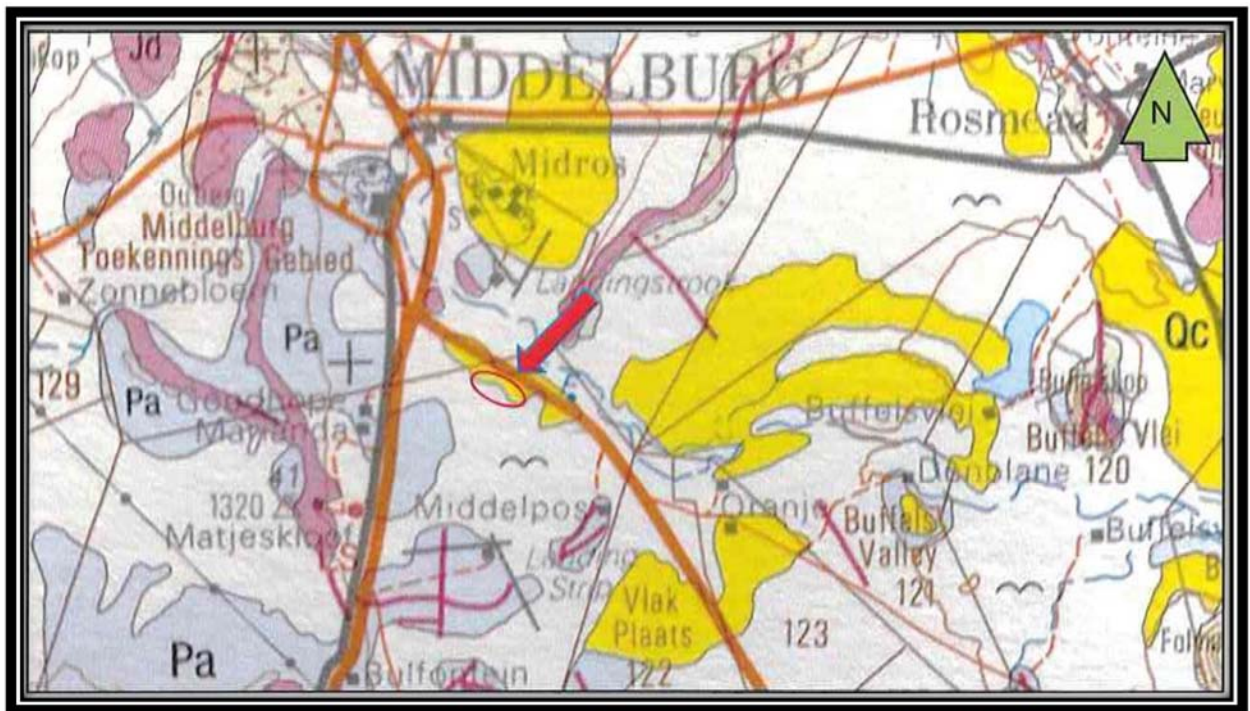



Figure 12: Extract from the 1:25 000 scale geological map 3124 Middelburg

According to the 1:250 000 scale geological map 3124 Middelburg, the site is underlain by calcrete (symbol *Qc* in dark yellow), and alluvium and colluvium (symbol  in light yellow). Other geological formations around the site but not shown to directly underly the site include *Jd* in purple (intrusive dolerite formations), and *Pa* in light blue (red, purple and grey mudstone with subordinate sandstone).

According to the geo-technical study that was conducted by Southern Geotechnical Engineering, the site is underlain by a relatively uniform soil profile. All test pits were stopped within transported soils (pedogenic, colluvium and alluvium). None of the test pits encountered residual soils or bedrock formations. The following soil layers were identified within the test pit excavations:

#### TOPSOIL WITH PLANT ROOTS:

Encountered at all 12 test pits as a thinnish surface layer.  
Layer thickness: Min. 0.1m; Average 0.33m; Max. 0.4m.

Typically described as: *Dry to slightly moist, pale orange brown, loose to medium dense, cracked, slightly voided, clayey SAND containing fine plant and grass roots.*

#### **COLLUVIUM:**

Encountered at 6 of the 12 test pits as a relatively thick, near surface soil layer.

Layer thickness: Min. 1.5m; Average 2.3m; Max.2.6m.

Typically described as: *Dry to slightly moist, pale light orange to pinkish brown slightly blotched off white, loose, voided, fine, slightly silty fine sand with occasional soft calcareous nodules and gravels.*

#### **PEDOGENIC CCALCRETE):**

Encountered at 4 of the 12 test pits as a relatively thick, near surface soil layer.

Layer thickness: Min. 1.0m; Average 2.2m; Max. More than 2.5m.

Typically described as: *Dry to slightly moist, pale light orange to reddish brown blotched off white, medium dense to dense with depth, soft, calcareous gravels and small nodules in a fine sandy matrix.*

#### **LACUSTRINE DEPOSITS:**

Coinciding with the 'pad' areas.

Encountered at 3 of the 12 test pits from surface (DH 05, DH 11 and DH 12).

Layer thickness extends from surface to maximum depth reach of TLB and deeper.

Typically described as: *Dry to slightly moist, pale light orange brown, slightly blotched off white, 'firm to 'stiff, silty/sandy clay with some soft calcareous nodules and gravels;*

#### **ALLUVIUM:**

Encountered at 2 of the 12 test pits at depth (bases of Test Pits DH 06 and DH 09), underlying colluvium and pedogenic soils. At Test pit DH 02 alluvium was encountered as two thin 'lenses' of granular material.

Min. depth to 1.1m (thin 'lens'); Max. depth to 4.0m.

Typically encountered as either loosely packed rounded pebbles and cobbles in a coarse, clean sandy matrix (DH02 and DH06), or a clean sand (DH 09).

### **8.1.2 TOPOGRAPHY**

The topography of the study area is flat with no rocky outcrops, ridges or hills. The highest elevation on site is found in the north-west at 1 231 meters above sea level and the lowest elevation is located along the eastern boundary at 1 225 meters above sea level. Remnants of a partially completed cricket pitch is situated towards the north-west while an old furrow runs through the center of the site, from north to south. The remainder of the study area is almost devoid of structural development, apart from a few old golf tees, golf greens, broken up concrete slabs, partially backfilled excavations and disturbed surfaces associated with old golf fairways.

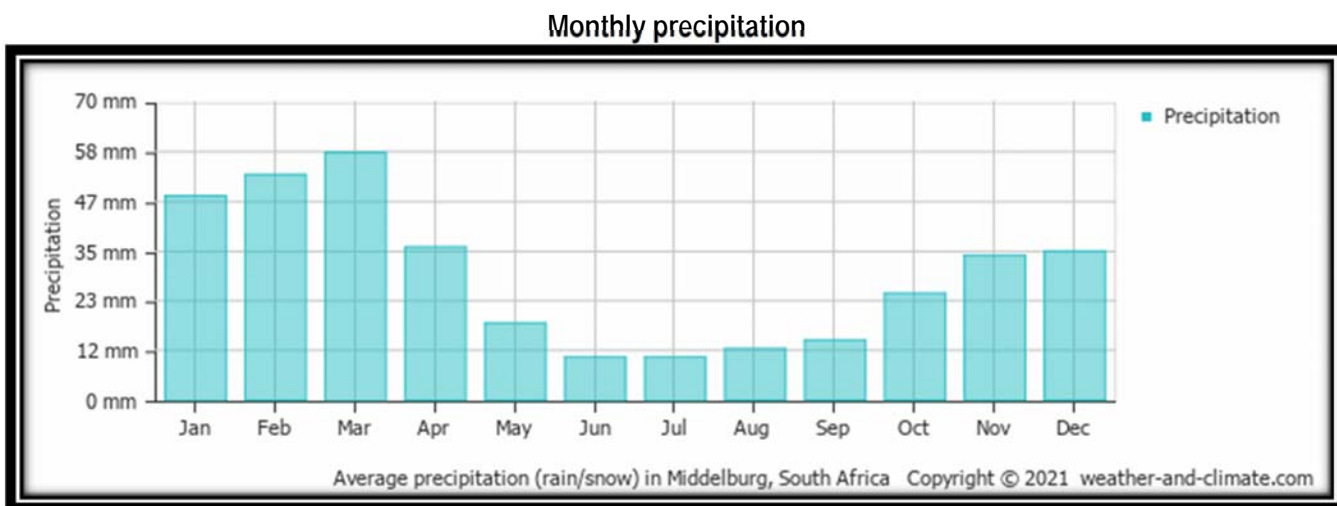
A detailed site survey have been carried out to establish levels. The Engineering report and the Layout plan will address issues regarding drainage of the site.

### **8.1.3. CLIMATE**

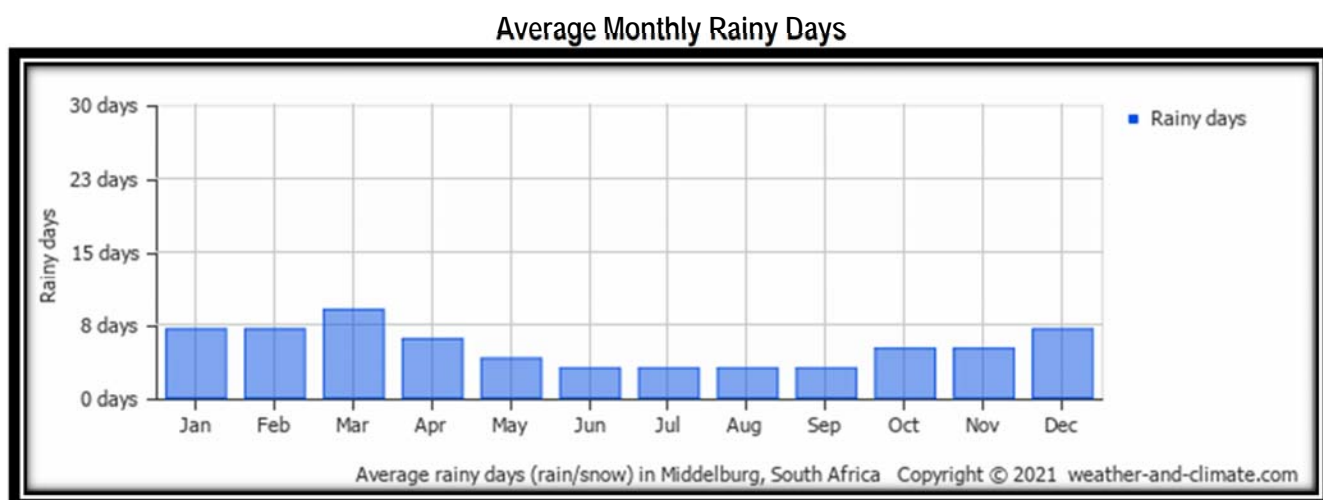
The prevailing climate in Middelburg is known as a local steppe climate. There is not much rainfall in Middelburg all year long. The Köppen-Geiger climate classification is BSk. The average annual temperature is 15.9 °C. About 461 mm of precipitation falls annually. In the discussion of this variable, certain aspects of rainfall, humidity, temperature and monthly Hours of sunshine that can influence the project will be highlighted.

### 8.1.3.1. Rainfall

Middelburg has dry periods in May, June, July, August, September and October. On average, March is the wettest month while, on average, July is the driest month. The average amount of annual precipitation is: 353.0 mm.



Source: 2010-2021 World Weather & Climate Information (<https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,middelburg,South-Africa.>)  
(Date visited: 12/07/2021)

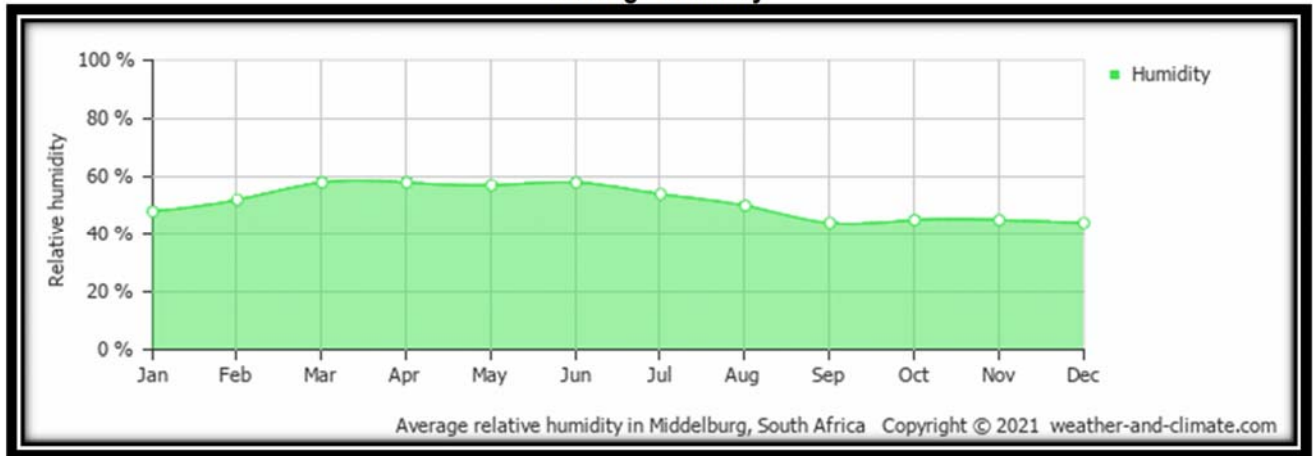


Source: 2010-2021 World Weather & Climate Information (<https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,middelburg,South-Africa.>)  
(Date visited: 12/07/2021)

On average, March is the rainiest and August has the least rainy days. The average annual amount of rainy days is: 62.0 days;

On average, April is the most humid and September is the least humid month. The average annual percentage of humidity is: 51.0%.

### Average humidity

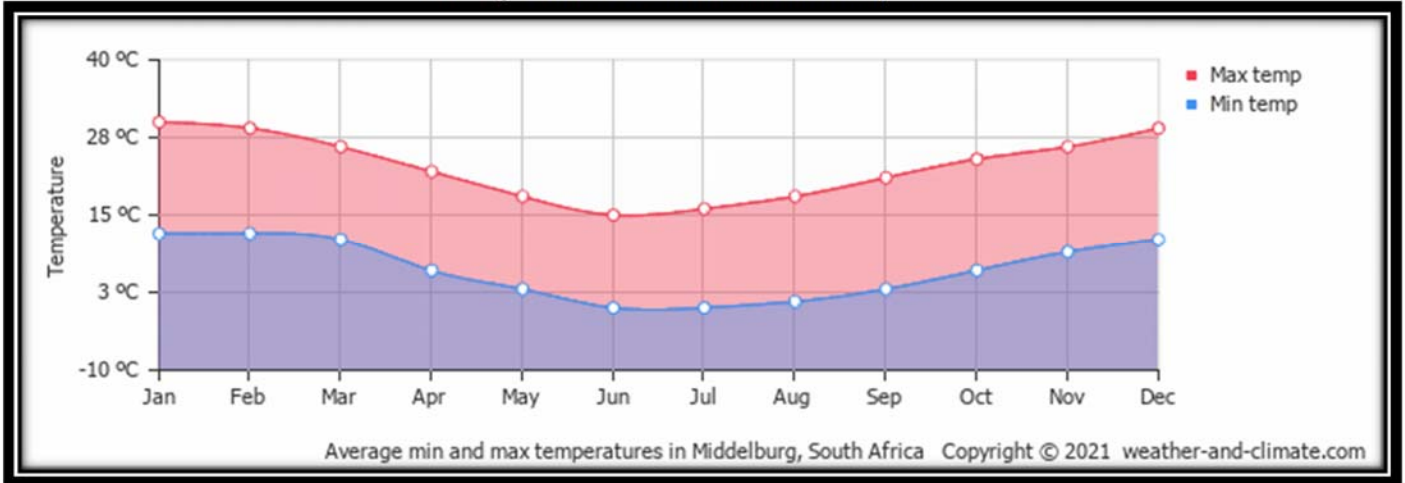


Source: 2010-2021 World Weather & Climate Information (<https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,middelburg,South-Africa.>)  
(Date visited: 12/07/2021)

### 8.1.3.2. Temperature

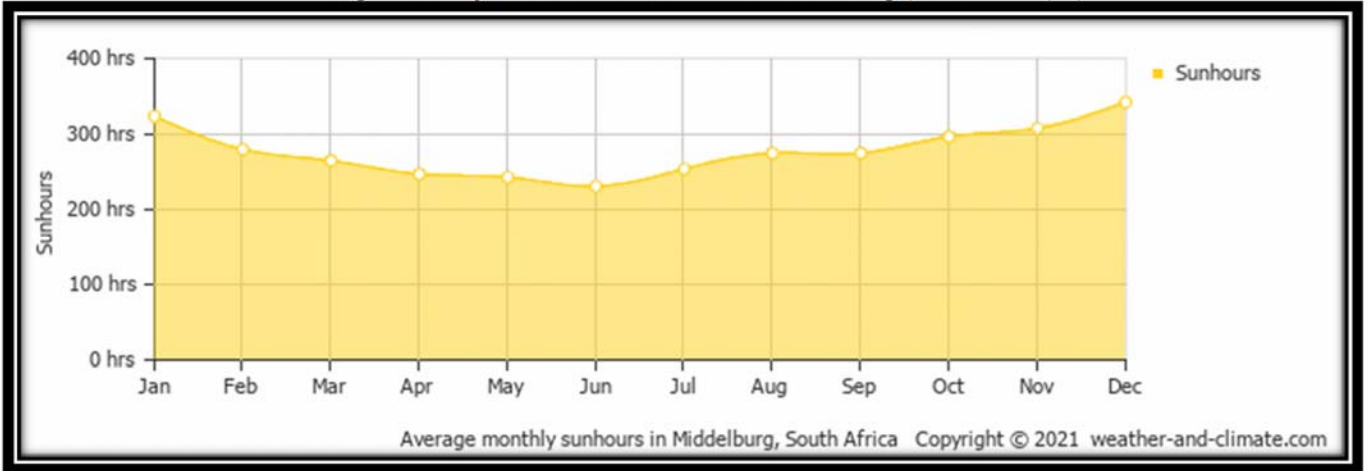
The warmest months are January, February and December. On average, the warmest month is January and the coolest month is June. The average annual maximum temperature is: 23.0° Celsius and the average annual minimum temperature is: 6.0° Celsius.

### Average minimum and maximum temperature



Source: 2010-2021 World Weather & Climate Information (<https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,middelburg,South-Africa.>)  
(Date visited: 12/07/2021)

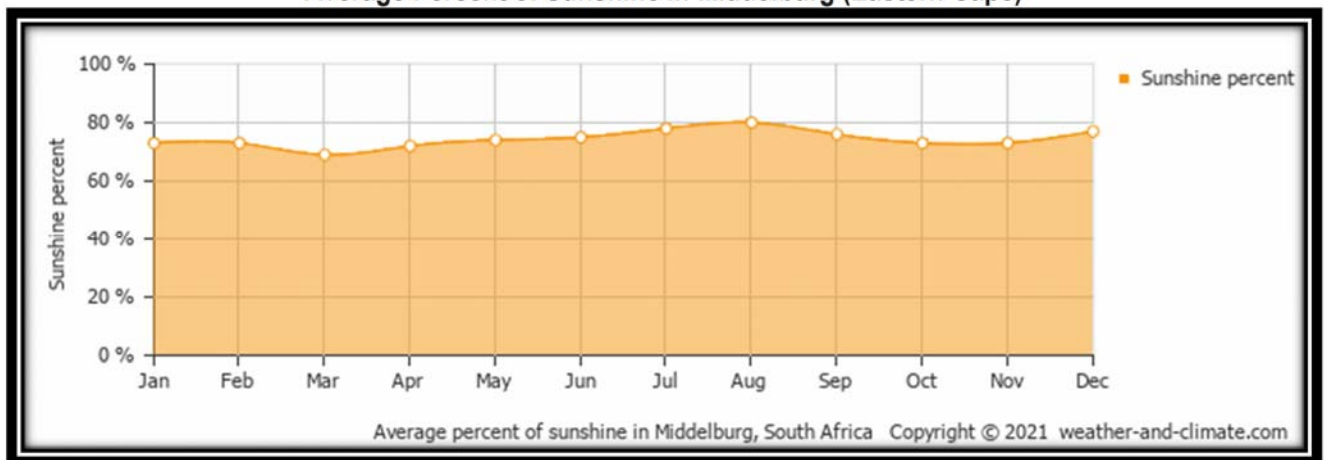
### Average Monthly Hours of Sunshine in Middelburg (Eastern Cape)



Source: 2010-2021 World Weather & Climate Information (<https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,middelburg,South-Africa.>)  
(Date visited: 12/07/2021)

- On average, December is the most sunny.
- On average, June has the lowest amount of sunshine

### Average Percent of Sunshine In Middelburg (Eastern Cape)



Source: 2010-2021 World Weather & Climate Information (<https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,middelburg,South-Africa.>)  
(Date visited: 12/07/2021)

- On average, August is the most sunny.
- On average, March has the lowest amount of sunshine.

### Climate Change

According to: WIREs Climate Change 2014, 5605-620. Doi:10.1002/wcc.295: "Climate change is a key concern within South Africa. Mean annual temperatures have increased by at least 1.5 times the observed global average of 0.65°C over the past five decades and extreme rainfall events have increased in frequency. These changes are likely to continue. Climate change

poses a significant threat to South Africa's water resources, food security, health, infrastructure, as well as its ecosystem services and biodiversity. Considering South Africa's high levels of poverty and inequality, these impacts pose critical challenges for national development. In relation to water, impact studies for the water resources sector have begun to look beyond changes in streamflow to changes in the timing of flows and the partitioning of streamflow into base flows and stormflows, reservoir yields, and extreme hydrological events. Spatially the eastern seaboard and central interior of the country are likely to experience increases in water runoff. Higher frequencies of flooding and drought events are projected for the future. Complexities of the hydrological cycle, influences of land use and management and the linkages to society, health, and the economy indicate far higher levels of complexity in the water resources sector than in other sectors. What has emerged is that land uses that currently have significant impacts on catchment water resources will place proportionally greater demands on the catchment's water resources if the climate were to become drier. The influence of climate change on water quality is an emerging research field in South Africa, with assessments limited to water temperature and non-point source nitrogen and phosphorus movement. A critical interaction that has not been explored is between changes in water quality and quantity and the combined impacts, such changes might have impact on various types of water use, e.g., irrigation, domestic consumption, or aquatic ecosystems support".

Water availability and demand has been calculated by the consulting Civil Engineers, to enable a sustainable development.

#### 8.1.4. SURFACE DRAINAGE

The area lies within the drainage basin of the Klein-Brakrivier that is located approximately 350m north of the site. Site is part of the Fish to Tsitsikamma Water Management Area (WMA 15). The site is not part of a Freshwater Ecosystem Priority Area (FEPA) and also not part of a wetland cluster (Nel *et al.*, 2011a, 2011b). Wetlands such as floodplain wetlands, channelled valley-bottom wetlands, unchannelled valley-bottom wetlands, depressions, seeps and wetland flats appear to be absent at the site. No wetlands are found at the site and plate flow is the dominant drainage pattern.

There is a furrow that was used (Prior to 1990) to divert water that overflowed from a reservoir that was build in the Klein Brak River towards a farm dam that is situated south west of the proposed development. Since the dam wall of the reservoir was broken down in the early 1990's there has been no water in the furrow and this structure has become redundant. The servitude that was registered for this furrow has also since been cancelled.

Large bare areas are present where signs of sheet erosion are visible. Signs of excavations or scraping of extensive areas are noticeable, despite substantial rainfall of the summer season. A number of pioneer and alien plant species that are conspicuous may also be reflection of possible "harsh soil conditions" and/or disturbances of the past. The 1:50 000 Topographical map of the area indicates that these areas are "eroded areas".

#### 8.1.5. GROUND WATER

No groundwater was encountered during the geo-technical investigation and as such the depth to the permanent ground water level is unknown. However, it is considered unlikely that any groundwater will be encountered to a minimum depth of 3.0m to 4.0m below current ground levels. Test pit excavation DH 09 also did not encounter groundwater in the upper 4.0m of the soil profile.

#### 8.1.6. FAUNA AND FLORA HABITAT

Site is part of the Nama-Karoo Biome which is represented by the Eastern Upper Karoo vegetation type (Mucina & Rutherford 2006).



To serve as local context for the landscape and vegetation at the site an outline of the Eastern Upper Karoo (NKu 4) from Mucina and Rutherford (2006) follows.

#### NKu 4 Eastern Upper Karoo

**Distribution:** Eastern Upper Karoo is present in parts of the Northern Cape Province, Eastern Cape Province and Western Cape Province. Eastern Upper Karoo is located between the towns of Carnarvon and Loxton in the west, De Aar, Petrusville and Venterstad in the north, Burgersdorp, Hofmeyr and Cradock in the east and the Great Escarpment and the Sneeuberge-Coetzeeberge mountain chain in the south. Altitude varies mostly between 1000 – 1700 m (Mucina & Rutherford, 2006).

**Vegetation and landscape features:** Flats and gently sloping plains (interspersed with hills and rocky areas of Upper Karoo Hardeveld in the west, Besemkaree Koppies Shrubland in the northeast and Tarkastad Montane Shrubland in the southeast), dominated by dwarf microphyllus shrubs, with “white” grasses of the genera *Aristida* and *Eragrostis* (these become prominent especially in the early autumn months after good summer rains). The grass cover increases along a gradient from southwest to northeast (Mucina & Rutherford, 2006).

**Geology and soils:** Mudstones and sandstones of the Beaufort Group (including both Adelaide and Tarkastad Subgroups) supporting duplex soils with prisma-cutanic and/or pedocutanic diagnostic horizons dominant (Da land type) as well as some shallow Glenrosa and Mispah soils (Fb and Fc land types). In places, less prominent Jurassic dolerites (Karoo Dolerite Suite) are also found (Mucina & Rutherford, 2006).

**Climate:** Rainfall takes place mainly in autumn and summer, peaking in March. Mean Annual Precipitation (MAP) ranges from about 180 mm in the west to 430 mm in the east. Incidence of frost is relatively high, but ranging widely from <30 days (in the lower-altitude Cradock area) to >80 days of frost per year (bordering the Upper Karoo Hardeveld on the Compassberg and mountains immediately to the west) (Mucina & Rutherford, 2006).

**Important taxa.** Tall shrubs: *Lycium cinereum*, *Lycium horridum*, *Lycium oxycarpum*. Low shrubs: *Chrysocoma ciliata*, *Eriosephalus ericoides* subsp. *ericoides*, *Eriosephalus spinescens*, *Pentzia globosa*, *Pentzia incana*, *Phymaspermum parvifolium*, *Salsola calluna*, *Aptosimum procumbens*, *Felicia muricata*, *Gnidia polycephala*, *Helichrysum dregeanum*, *Helichrysum lucilioides*, *Limeum aethiopicum*, *Nenax microphylla*, *Osteospermum leptolobum*, *Plinthus karoocicus*, *Pteronia glauca*, *Rosenia humilis*, *Selago geniculata*, *Selago saxatilis*. Succulent shrubs: *Euphorbia hypogaea*, *Ruschia intricata*. Herbs: *Indigofera alternans*, *Pelargonium minimum*, *Tribulus terrestris*. Geophytic herbs: *Moraea pallida*, *Moraea polystachya*, *Syringodea bifucata*, *Syringodea concolor*. Succulent herbs: *Psicaulon coriarium*, *Tridentea jucunda*, *Tridentia virescens*. Graminoids: *Aristida congesta*, *Aristida diffusa*, *Cynodon incompletus*, *Eragrostis bergiana*, *Eragrostis bicolor*, *Eragrostis lehmanniana*, *Eragrostis obtusa*, *Sporobolus fimbriatus*, *Stipagrostis ciliata*, *Tragus koelerioides*, *Aristida adscensionis*, *Chloris virgata*, *Cyperus usitatus*, *Digitaria eriantha*, *Enneapogon desvauxii*, *Enneapogon scoparius*, *Eragrostis curvula*, *Fingerhuthia africana*, *Heteropogon contortus*, *Sporobolus ludwigii*, *Sporobolus tenellus*, *Stipagrostis obtusa*, *Themeda triandra* and *Tragus berteronianus*.

**Note:** Though some plant species of the above listed vegetation types are present at the site, not necessarily all of the plant species listed above are present at the site.

Large parts of vegetation at the site have been transformed or modified. Remaining vegetation is mainly karroid with few individual trees. Exotic trees or alien invasive trees occur at the golf course section with its associated infrastructure as well as at some other parts of the site. The alien invasive succulent *Cylindropuntia imbricata* occurs at some parts of the site.

Fairly large covers of the alien invasive herb *Atriplex lindleyi* are conspicuous at areas where the soil have been exposed in the past. Tall shrubs include the indigenous *Lycium cinereum*, *Lycium horridum* and *Hertia pallens* as well as the exotic *Atriplex nummularia*. Low shrubs include *Salsola tuberculata*, *Salsola calluna*, *Eriosephalus ericoides* subsp. *ericoides*, *Pentzia incana*, *Chrysocoma ciliata*, *Aptosimum spinescens*, *Aptosimum procumbens*, *Ruschia intricata*, *Osteospermum leptolobum*, *Pteronia glauca* and *Rosenia humilis*. Conspicuous indigenous grass species at the site are *Eragrostis lehmanniana*, *Aristida congesta*, *Eragrostis obtusa*, *Tragus berteronianus*, *Enneapogon desvauxii* and *Stipagrostis uniplumis*. Few indigenous trees are found at the site which include *Searsia lancea* and *Vachellia karroo*.

Alien invasive tree species at the site include *Schinus molle*, *Eucalyptus camaldulensis*, *Agave americana* and *Ligustrum lucidum*.

Some of the alien invasive weed species at hirtherto bare ground or ecologically disturbed areas at the site are *Salsola kali*, *Argemone ochroleuca*, *Chenopodium album*, *Alternanthera pungens*, *Datura ferox* and *Senecio inaequidens*.

Old furrows which do not appear to have a significant function currently are present at the site.

Large bare areas are present where signs of sheet erosion are visible. Signs of excavations or scraping of extensive areas are noticeable despite a “good rainy season”. A number of pioneer and alien plant species that are conspicuous may also be reflection of possible “harsh soil conditions” and/or disturbances of the past.

Rocky ridges and wetlands appear to be absent at the site.

Site specific indications of sensitivity from the SANBI EIA Screening Tool for relative plant species theme sensitivity indicates a low sensitivity for the entire site.

The indications of sensitivity from the SANBI EIA Screening Tool for relative animal species theme sensitivity indicates a very high sensitivity for the entire site. This very high sensitivity indication is owing to the distribution range of the bird species *Neotis ludwigii* (Ludwig’s Bustard). Ludwig’s Bustard is a large bird and a nomad and partial migrant. Though Ludwig’s Bustard roams over large areas and a visit by this large bird to the site cannot be totally excluded, the site does not appear to be a habitat of particular importance to this bird species. The local animal theme sensitivity of the specific site is probably low. Indications of sensitivity from the SANBI EIA Screening Tool for relative terrestrial biodiversity indicates a low sensitivity for the entire site.

A low sensitivity from the SANBI EIA Screening Tool for relative aquatic biodiversity is indicated.

The findings of the habitat survey at the site also suggest that a low sensitivity for the biodiversity themes at the site is likely. No Threatened or Near Threatened plant or animal species appear to be resident at the site. No other plant or animal species of particular conservation concern appear to be present at the site.

The scope for the site to be part of a corridor of particular conservation importance is small.

The vegetation type at the site is Eastern Upper Karoo (NKu 4) which is not listed as threatened according to the National List of Threatened Ecosystems (2011).

Ecological sensitivity at most of the is currently low and at some parts, medium. See Figure 13. Following the mitigations which will be upheld and planned footprint for development all the impact risks listed above are moderate or low. Establishment of exotic weeds should be monitored and exotic weeds at the site should be eradicated. A declared invader such as the mesquite tree (*Prosopis* species), should not be planted or allowed to spread from adjacent areas to the proposed footprint.



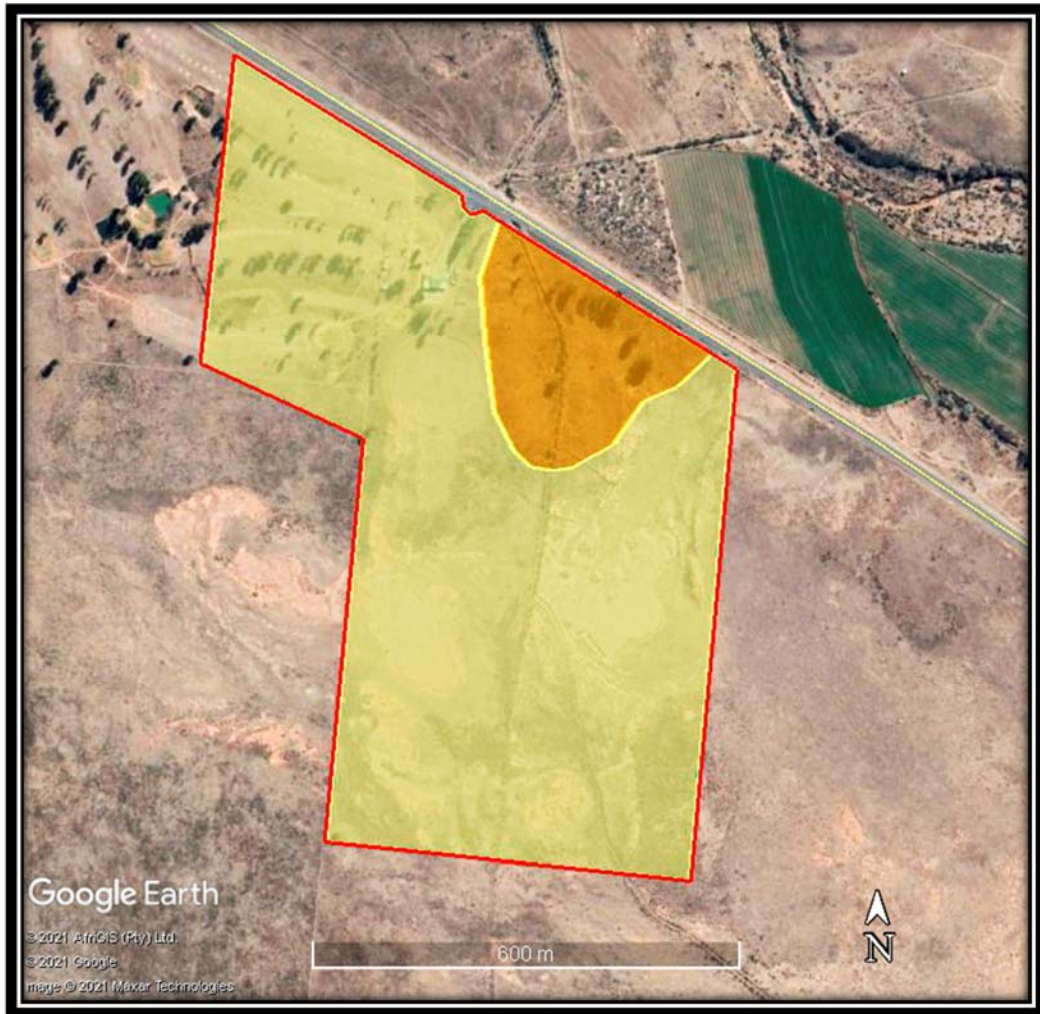





Figure 13: Indications of ecological sensitivity at the site.

- |   |                                  |                        |
|---|----------------------------------|------------------------|
|  | Red outline                      | Boundaries of the site |
|  | Light yellow outline and shading | Low Sensitivity        |
|  | Orange outline and shading       | Medium-low Sensitivity |

## 8.2. SOCIO ECONOMIC FACTORS

### 8.2.1. SOCIAL AMENITIES

The National Development 2030 mentions that South Africa can eliminate poverty and reduce inequality by 2030 and this will require change, hard work, leadership and unity. Its goal is to improve the life chances of all South Africans, but particularly those young people who presently live in poverty. The plan asks for a major change in how government in general go about their lives. In the past, we expected government to do things for us. What South Africa needs is for all of us to be active

citizens and to work together – government, business, communities – so that people have what they need to live the lives they would like.

The White Paper on Local Government<sup>1</sup> (1998) introduces the concept of “developmental local government” which is defined as: “Local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs, and improve the quality of their lives.” However, the same document makes it clear that:

*“Local Government is not directly responsible for creating jobs. Rather, it is responsible for taking active steps to ensure that the overall economic and social conditions of the locality are conducive to the creation of employment opportunities.”*

The Chris Hani District Municipality developed and adopted a District Development Agenda that focuses on the development of all its Six Local Municipalities through the identification of competitive advantages of its local municipalities. This was later translated into an Agro Industrial Plan that has been used as a springboard to the proposed Special Economic Zone.

The Chris Hani Regional Development Strategy provides focused areas around which resources can be leveraged and mobilised in order to contribute to the broad overall objective of ensuring that all people in the district are able to benefit from the economy. The Competitive Advantage therefore for the district points to the broadly defined agricultural sector as the one with the most potential to contribute to job creation, promoting of livelihoods opportunities and contributing to sustained social and economic growth and development.

Whilst crop production and agro-processing sector remain important areas of intervention, the present cost of transport to high volume markets will most likely render local production uncompetitive until substantial economies of scale and consistent quality can be achieved.

Value chain integration implies looking at all the components of a particular sector and subsector and identifying what can be done or put in place to add value to what already exists, and in doing so, promote job creation and provide more livelihood opportunities.

While the districts’ agricultural potential is obvious, primary agricultural projects have had a minimal impact on unemployment. This situation necessitates strategies to increase value-added production by exploiting opportunities that exist along the various crop and livestock value chains. (Chris Hani District Municipality 2021-2022 Draft IDP)

Agriculture is one of the main economic sectors within the area. Agricultural activities can be sub-divided into two groups – crop farming and livestock farming. The Applicant has identified gaps in the value chain for both of these economic sectors being Lucerne (Crop farming) and sheep (Livestock farming). It is the intension of the applicant to add value to both of these identified agricultural sectors and in doing so, create jobs and infrastructure. The increased employment in the area during both the construction and operational phase will also result in increased expenditure, which, in addition, will mean that more than just the proposed jobs required for the proposed development will be created due to economic spin-offs that will result.

#### Feed Mill

Feed mixing, pill making, packaging and ancillary works including grain and feed storage will form part of this operation. Lucerne that is produced extensively in the area and will be used to produce feed, thus adding value to primary products that are produced in the region. Maize that is also produced in the region will also be incorporated into the production process and a limited amount of this produce will also be value added. At full production the Feed Mill will produce 9 000 tons of feed per month and will generate 100 employment opportunities.

### Agricultural recreational area.

This part of the proposed development will be for Animal display and demonstrations, auctions and ancillary activities and will be Open to the public, thus providing a platform for the people of the region to sell and display their animals and to come together as a community.

### Solar Farm

Greenhouse gases (GHG), including CO<sub>2</sub> emissions are associated with the conventional provision of energy services and are a major cause of climate change. Globally, coal is the second largest primary energy source used worldwide (preceded by oil), and the first source for power generation. In terms of electricity generation or supply, South Africa is highly dependent on coal-fired power plants and therefore energy supply is carbon dioxide-intensive.

Renewable energy sources play a role in providing energy services in a sustainable manner, and in particular in mitigating climate change. Sustainable energy can be defined as energy that provides affordable, accessible and reliable energy services that meet economic, social and environmental needs within the overall developmental context of society, while recognising equitable distribution in meeting those needs. Sustainable energy is an element of sustainable development that is defined as development that meets the present needs and goals of the population without compromising the ability of future generations to meet theirs. On the overall sustainable development is underpinned by economic development (growth efficiency), social development (culture, heritage, poverty, and empowerment) and environmental development (pollution and natural resources).

The government of South Africa considers the use of renewable energy as a contribution to sustainable development. Sustainable development also implies the provision of electricity and other modern fuels to the commercial and industrial sectors to promote their economic competitiveness and future prosperity. (Department of Environmental Affairs (2015). EIA Guideline for Renewable Energy Projects. Department of Environmental Affairs, Pretoria, South Africa)

With the current situation of unreliable electricity provision in the Country, the Applicant has opted for the option of providing his own Electricity, thus ensuring a steady flow of electricity for his operations. In providing off-grid, renewable Electricity, the Applicant is also decreasing his Ecological footprint as he will not be using Electricity that has been generated from unrenewable energy sources.

### Sheep Feedlot

The Sheep Feedlot will be designed for 10 880 head of sheep. Currently, only 24 sheep can be raised on the entire development site, as the area is very dry. The intensification of the Agricultural potential of the site is a huge advantage as the production capacity of the site will be raised from 24 to 10 880 head of sheep. This operation will also result in an additional 10 employment opportunities that will be generated.

### Treatment Facilities

In order to treat the manure and the carcasses that will originate from the Sheep Feedlot the construction of three Sedimentation ponds, two Evaporation ponds and a Manure Composting area is proposed. The need for these activities lies in the fact that in order to ensure that the proposed development does not cause any harm to the Environment, potential pollution has to be curbed. The purpose of the sedimentation system is to remove settleable solid material from the feedlot runoff and prevent it from entering the evaporation ponds. The Evaporation pond is sized based on calculation of the annual water balance (Annual Rainfall versus Evaporation Statistics) and is designed to contain the runoff/ effluent from the feedlot site.

The manure composting area will have a concrete base and will be able to accommodate the composting activities. The composting facility will generate additional income as the compost will be sold, thus ensuring that a potential source of pollution has been processed to a usable product.

Consistent with national priorities, environmental authorities must support *"increased economic growth and promote social inclusion"*, whilst ensuring that such growth is *"ecologically sustainable"*. In the National Spatial Development Perspective (NSDP) it is highlighted that, to achieve the goal of stimulating sustainable economic activities and to create long-term employment opportunities, it is required that spending on economic infrastructure is focused in priority areas with potential for economic development, with development to serve the broader societies' needs equitably

During the construction phase, temporary employment will be created. The increased employment in the area during the construction phase will also result in increased expenditure, which, in addition, will mean that more than just the proposed jobs required for the construction on the site will be created due to economic spin-offs that will result.

### 8.2.2. AIR QUALITY

The extent and toxicity of emissions is not necessarily a concise indicator of contributions to ground-level air pollution concentrations or of risks to health and the environment. Such contributions are also a function of the height of emission, temporal variations in the release of pollutants, and the proximity of the source to the people or the environment affected by exposure to the pollutant (such as, for instance, children, or the elderly, or people who are ill, or others who may be particularly sensitive receptors to a specific pollutant above a certain concentration). If an industry is operating close to a school or hospital or centre for the elderly, the potential exposure (in combination with the other contributing factors) is high.

Three factors govern the significance of household fuel-burning emissions:

- (i) the low level of emissions (that is, their height above the ground is generally about 3 m, within people's breathing zone);
- (ii) the simultaneous occurrence of peak emissions (during the coldest months of winter and in the early mornings and throughout the evenings) and poor atmospheric dispersion (stable atmosphere with low wind speeds, with the possible development of temperature inversions); and
- (iii) the release of such emissions within high human exposure areas, given that such emissions generally occur in dense, low-income settlements where population density is high (in addition, the pollution is not only outdoors, but frequently indoors as well, due to poor ventilation, so it affects the whole family).

The significance of vehicle emissions as contributors to air-pollutant concentrations and health risks is similarly increased by the low level (close to the ground) of the emissions, and their proximity to highly populated areas – on highways, for example, with emissions being particularly high when traffic is congested. Vehicle emissions tend to peak early in the morning and in the evenings, when the potential for atmospheric dispersion is reduced (for example, wind speeds are generally low in the early mornings and evenings, reducing their potential for dispersing pollution).

Given the high volumes of pollutants emitted from fuel-burning within the industrial and power-generation sectors, their contribution to ambient concentrations and public health risks is often lower than might be expected. This is because these sources are generally characterized by constant releases, relatively high above ground level, and further away from residential settlements than are household fuel-burning and vehicle emissions.

Ranking the significance of different sources of pollution on the basis of the total emissions for which each source is responsible would, for example, place industrial emissions above household fuel-burning. If the aim is to reduce impacts on human health, however, then household fuel-burning would need to be targeted as a top priority (Scorgie et al., 2004d).

Historically, air pollution control in South Africa has primarily emphasized the implementation of 'command and control' measures in the industrial sector. The shift from source-based control, to the management of the air that people breathe, emphasizes the importance of targeting a wider range of sources and using more flexible and varied approaches. It means paying greater attention to ambient air quality, as it is more important (and more cost-effective, in many cases) to make sure that the ambient air complies with air quality standards. This approach ensures that human and environmental health is protected and that the cumulative impact of pollution from a number of sources is addressed.

Approaches adopted or considered for future implementation have included: regulation (for example, the use of Atmospheric Emission Licences for Listed Activities); market instruments (such as atmospheric user-charges and pollution taxes); the potential for voluntary agreements, education and awareness raising; and emissions trading. International experience shows that adopting a mix of instruments and interventions is more effective than using a single instrument to improve air quality across various types of source. Although direct regulation remains important in controlling industrial sources, there is evidence that specifying emission limits is more effective than specifying the use of particular technologies, so as to give companies flexibility in selecting the method of achieving success that suits them best. This approach is advocated as being more cost-effective and more likely to stimulate technological advances in pollution control methods and production processes.

For large point sources (that is, sources of pollution that are concentrated on one site, but that have large, constant volumes of many types of pollution) that are few in number, instruments such as emissions trading have been advocated as an effective way to manage pollutant emissions and reduce the costs of compliance.

Implementing an efficient social protection system to alleviate poverty is central to maintaining conditions that facilitate not only economic growth but also environmental sustainability. Many South African households – including those with access to electricity – use coal, wood, and paraffin, due to the relative cost-effectiveness of such fuels for heating (that is, space heating) and cooking purposes.

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Air pollution as a result of steam generation will be a given. The proposed generation of steam falls below the threshold as described in the Air Quality Act (Act 39 of 2004) and no further action will be required for this variable. In addition to the above, it should be noted that the project will however create a certain amount of dust during the construction phase. If proper dust



suppression measures are implemented this variable will have very little impact (low in intensity and significance during the construction phase).

### 8.2.3. NOISE

Increased noise pollution as a result of the operational activities of the feed mill and the sheep feedlot will occur. The proposed development is located more than 2 kilometres away from the nearest residential development. In addition the ambient noise created by the N10 that is located adjacent to site has already disturbed the “rural” character of the area. It is also a fact that a certain amount of noise will be generated during the construction phase of the project. Noise levels should however rarely exceed the allowable limits.

### 8.2.4. ARCHAEOLOGY AND CULTURAL SITES

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls. A number of archaeological & recent historical sites and features were identified and recorded in the study area during the assessment. The most extensive and significant of these are a number of open-air Stone Age sites with scatters of stone tools and associated material. Some recent historical features recorded include the remnants of an aqueduct (indicated on the 1957 map of Portion 15 of the farm) and possibly associated features and a Cricket field (oval). See Figure 14.

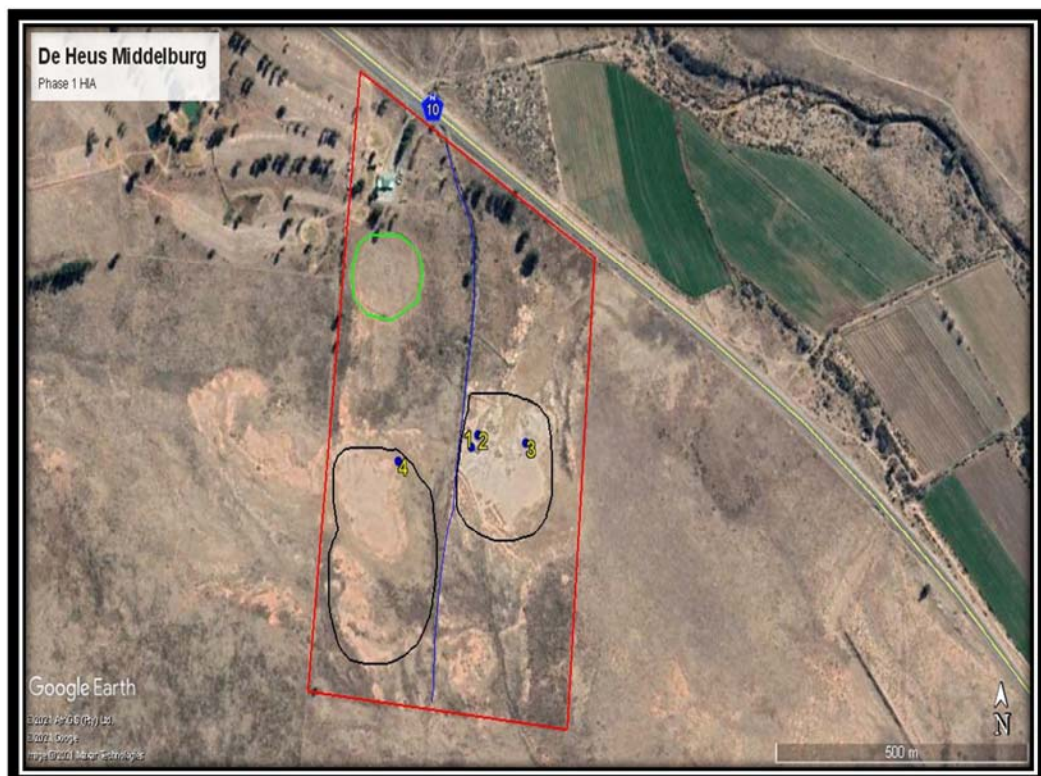


Figure 14: The distribution of sites in the assessment area. The blue line indicates the water furrow; the green polygon is the Cricket Oval; Site 2 is the cement & brick foundation remains associated with the golf course. The sheet erosion areas in the black polygons show the extent of the areas where the Stone Age open-air scatters were found (Google Earth 2021).

The 1st site is the remains of the old Cricket Oval/field (This is infact a new cricket ground that was never completed) close to the Golf Club. The site is demarcated by a soil berm. The site is not deemed as historically significant.

The 2nd site recorded is this water furrow. The Phase 1 assessment is seen as sufficient enough documentation. The site used to form part of the Golf course as it used to be an 18 hole course and has since been reduced to a 9 hole course. The structures referred to as site 3 are in all probability old structures associated with this activity (Old tee boxes?). They are nearly completely demolished and the Phase 1 assessment is seen as sufficient enough documentation.

The most significant sites and finds in the area are the open-air scatters of Stone Age material. These sites are characterized by fairly dense scatters of MSA & LSA flakes, cores, flake tools such as blades, scrapers and more formal tools such as points. A scatter of ostrich egg shell fragments was also recorded in one area. These open-air scatters are located in two large sheet erosion areas. The size and density of these Stone Age scatters make these sites highly significant from an Archaeological perspective. It is therefore recommended that Phase 2 Archaeological Mitigation measures be implemented before the development commences and the sites are destroyed.

The following is recommended:

1. Detailed mapping of the Stone Age scatters of material
2. Surface sampling of representative material from these scatters in order to determine their age and typology. This material will then have to be curated by a recognized institution such as the McGregor Museum in Kimberley
3. A permit from SAHRA will be required from SAHRA to conduct this Phase 2 work

#### 8.2.5 PALAEONTOLOGY

The entire study area is underlain by mudrocks of the Permian Balfour Formation of the Adelaide Subgroup of the Beaufort Group of the Karoo Supergroup and more superficially by Quaternary calcrete and alluvial deposits. The rocks of the Beaufort Group are renowned for their wealth of fossil tetrapods, and there is a slight, but unlikely, possibility that the overlying alluvial deposits could contain fossils.

The sedimentary rocks of the Permian Beaufort Group, which are not exposed in the study area, are renowned for their wealth of fossil tetrapods, particularly therapsids, and also plants of the *Glossopteris* flora. These rocks of the Karoo Supergroup are completely covered by unconsolidated Quaternary sediments. The Quaternary deposits could host much younger fossils but this is extremely unlikely.

Collections of fossils from the Beaufort Group are present in the collections of the Evolutionary Studies Institute (ESI), at the University of the Witwatersrand, the Council for Geoscience in Pretoria, National Museum in Bloemfontein, Ditsong Museum in Pretoria, and Iziko Museum in Cape Town.

As the Permian Beaufort Group are overlain by Quaternary calcrete and alluvial deposits and are not exposed in the study area it is highly unlikely that palaeontological heritage will be affected by the proposed development. The overlying Quaternary sediments are not consolidated and it is very unlikely that any fossils will be present.

This desktop study has indicated that no fossils are exposed, and if deep excavations are undertaken as a result of development it could expose fossil vertebrates, and plants in the rocks of the Beaufort Group and could create an opportunity for further study. It is thus recommended that, if in the unlikely event that fossils are exposed in the Permian Beaufort Group or Quaternary sediments, during the proposed development a qualified palaeontologist must be contacted to assess the exposure for fossils so that the necessary rescue operations are implemented.

## 8.2.6 CIVIL AVIATION

The site is rated as a “High” sensitivity site for the civil aviation theme. This is mainly due to its close proximity to the Middelburg (Cape) Aerodrome (FAMC) at location Ref. Point: S31.547259 ,E25.029453. In accordance with the Government Gazette No. 43110 a specialist assessment was performed in order to ensure the level of impact on civil aviation installations. After an assessment performed by a radio frequency and radar specialist the site was rated as a “Low” sensitivity site for the civil aviation theme. Therefore according to the Government Gazette No. 43110 no further assessment requirements are identified. Initial Screening tool result: “High” Sensitivity site related to the impact on civil aviation installations.

The site marked in light blue in the figures below is 1.5km due north of Middelburg (Cape) Aerodrome (FAMC). The runways of the Middelburg (Cape) Aerodrome (FAMC) is indicated in green in the figures below. Indicated in red with inside the development area is the location of the solar plant.



Figure 15: Proposed development site in respect to the Middelburg (Cape) Aerodrome (FAMC)

The highest planned structure on the development site will fall well below the obstacle identification surfaces area and not cause any obstacle complications for the Middelburg (Cape) Aerodrome (FAMC). The proposed development site is 1.5km due north of Middelburg (Cape) Aerodrome (FAMC) and falls within the Inner Horizontal Surface with a limitation on the height of the maximum structure on the development site to be below 40meters in height. See Figure 16 below.



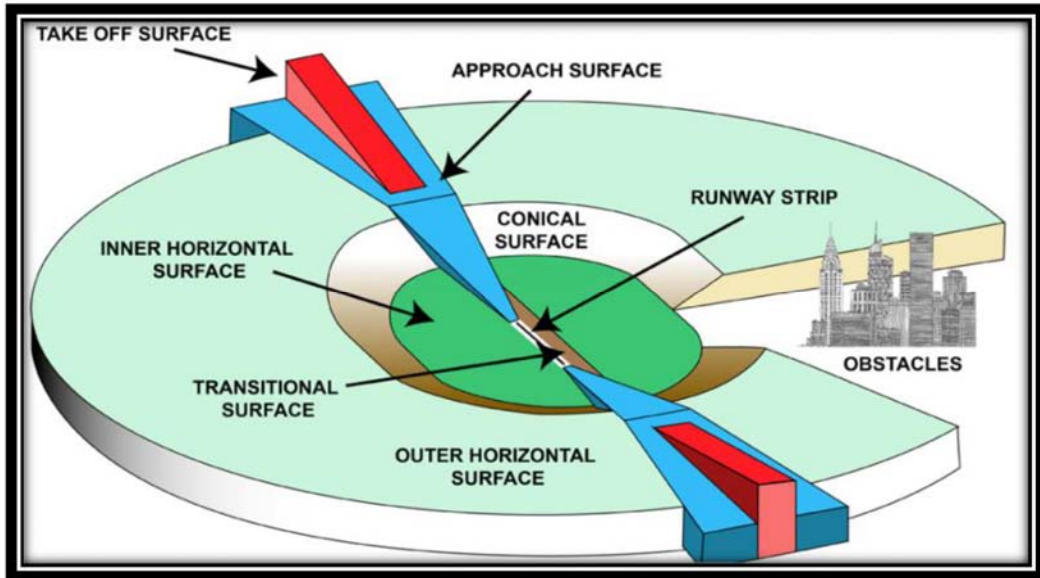


Figure 16: Obstacle identification surfaces

Radio frequency propagation prediction modelling was performed in order to assess the degree of interference from the proposed development site on any type of electromagnetic radio waves transmitting devices that could be deployed at the Middelburg (Cape) Aerodrome (FAMC). The Middelburg (Cape) Aerodrome (FAMC) runways are indicated by the green lines in the images below and the proposed development site is indicated in light blue.

The Middelburg (Cape) Aerodrome (FAMC) currently do not have a radar system. For possible future radar installations the proposed development site will have a very low influence on an airport radar. This is due to the height of the development area in regards to the runway level. The area is very flat and the development is more or less on the same level as the runway. This low level together with angle of the radar antenna and the distance from the runway will result in very low interference on the radar. The interference will be so low together with clutter map adjustments that the interference from the proposed development site is negligible.

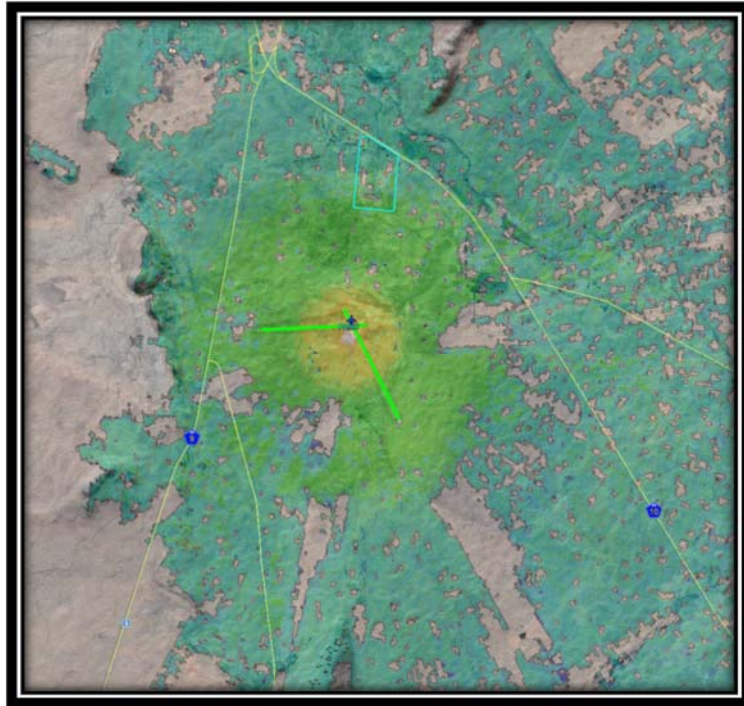


Figure 17: RF propagation from FAMC – Plot 2

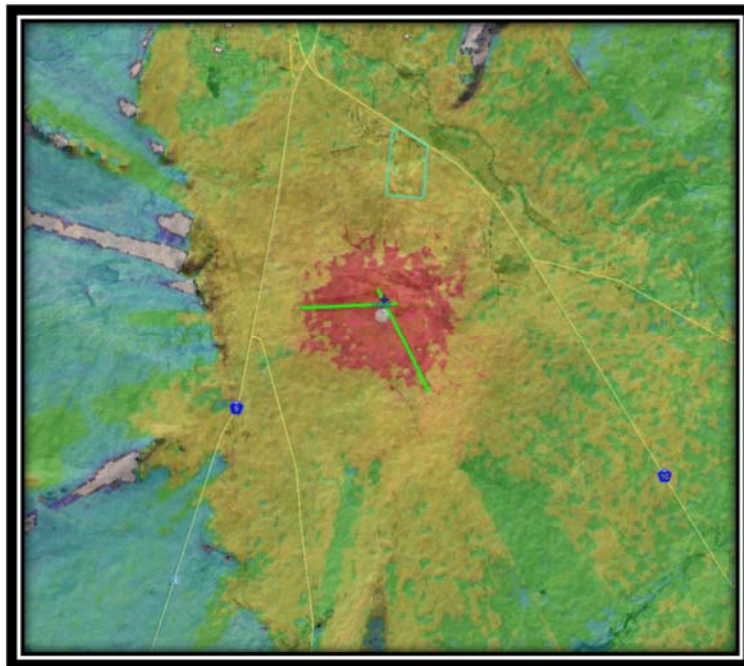


Figure 18: RF propagation from FAMC – Plot 1

The proposed development site do not fall in the takeoff and approach flight path of the RF signal lobes as used by precision landing systems for the Middelburg (Cape) Aerodrome (FAMC). Although there are no precision landing systems currently deployed, it can be seen in the image below that should there be precision landing systems deployed in the future the RF signal focus area of the precision landing systems fall well outside the proposed development.

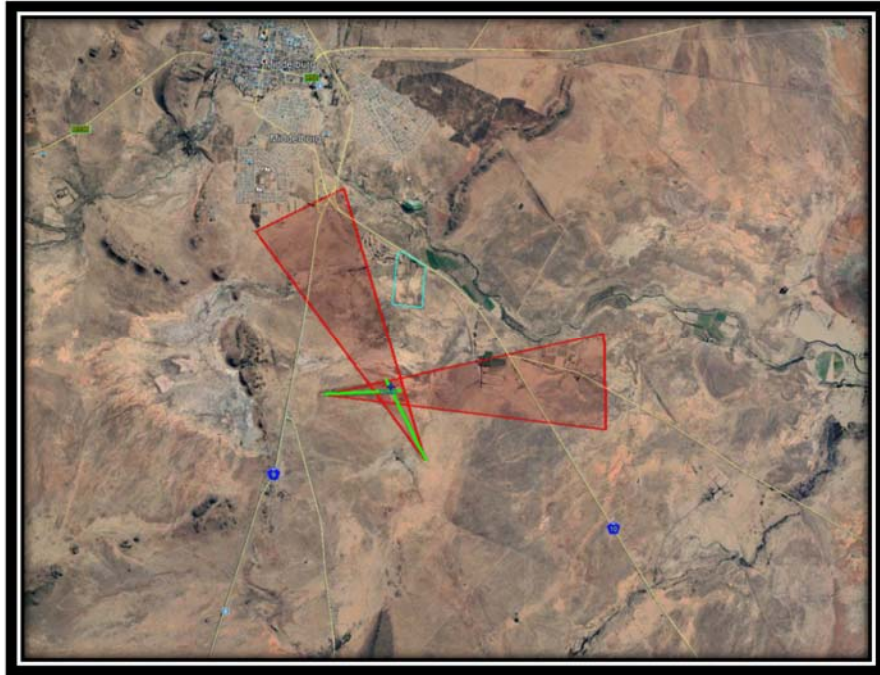


Figure 19: RF propagation from FAMC for advance landing systems

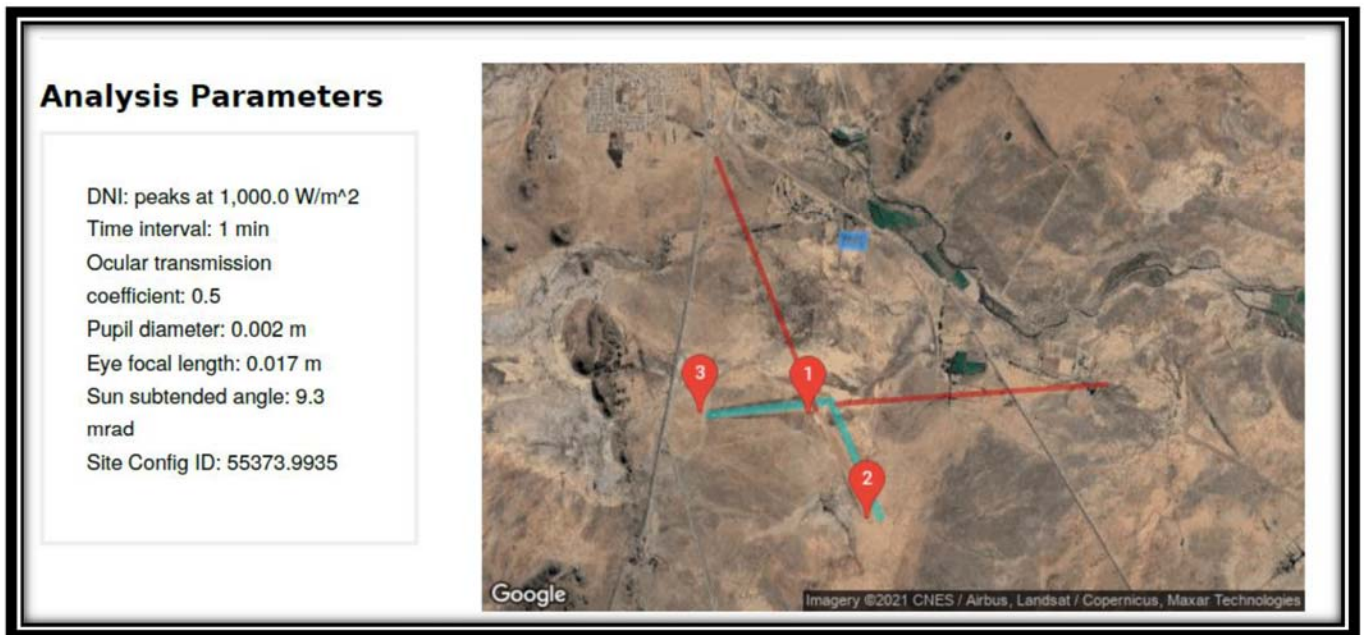
#### Glint and Glare

A Glint and glare analysis was performed on the influence of the planned solar plant. The reason for this is that the PV glare can be hazardous for pilots, motorists, and other observers.

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration

Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.



After the assessment, the Development has been rated as a “Low” sensitivity site for the civil aviation theme because of the following main reasons.

1. The highest planned structure on the development site will fall within the obstacle identification surfaces area and not cause any obstacle problems for the Middelburg (Cape) Aerodrome (FAMC).
2. The site also will cause low radar interference. Radar is a detection system that uses radio waves to determine the range, angle, or velocity of objects. A radar system consists of a transmitter producing electromagnetic radio waves. These electromagnetic radio waves reflect off the object and return to the receiver, giving information about the object's location and speed. Because the Development site is not in line with the approach and departure flight paths and the maximum height of the buildings is low relative to the radar the interference from the proposed development site will be negligible.
3. The proposed development site do not fall in the takeoff and approach flight path of the RF signal lobes as used by precision landing systems for the Middelburg (Cape) Aerodrome (FAMC).
4. A Glint and glare analysis show no "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles. PV glare can be hazardous for pilots, motorists, and other observers. There is also no glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
5. The site will also have negligible interfere with any ground to air communication, any airport radio direction finding equipment as well as any radio transmitting beacons

### 8.2.6 AGRICULTURAL POTENTIAL

The sensitivity of a site is determined by the screening tool of the Department of Environment. According to the screening tool, the site has a medium sensitivity. More detailed analyses, however, found that this assessment is incorrect and for the following reasons:



- 1) Middelburg is in the Karoo Region that has an arid climate, it has a low and erratic rainfall and high summer temperatures. Crop production is not practiced unless it is under irrigation.
- 2) There is no irrigated cropping on the site and no water license as far as we are aware.
- 3) The soils are mostly moderately deep and deep Clovelly soils that are arable but with no irrigation water available, has low arable potential.

The development proposed will remain agriculture but will intensify the agricultural activities. Instead of degraded barren land, it will be converted to include a feed mill, agricultural recreation area, solar farm and sheep feedlot. The conclusion is that the land has a low agricultural sensitivity.



Figure 20: Surrounding land uses (Bing map) indicating that irrigated land is the only cultivated land

Figure 21 is the Land Cover map of DALRRD that clearly indicates that the only cropping that takes place is under irrigation. The implication is: no water, no commercial cropping.

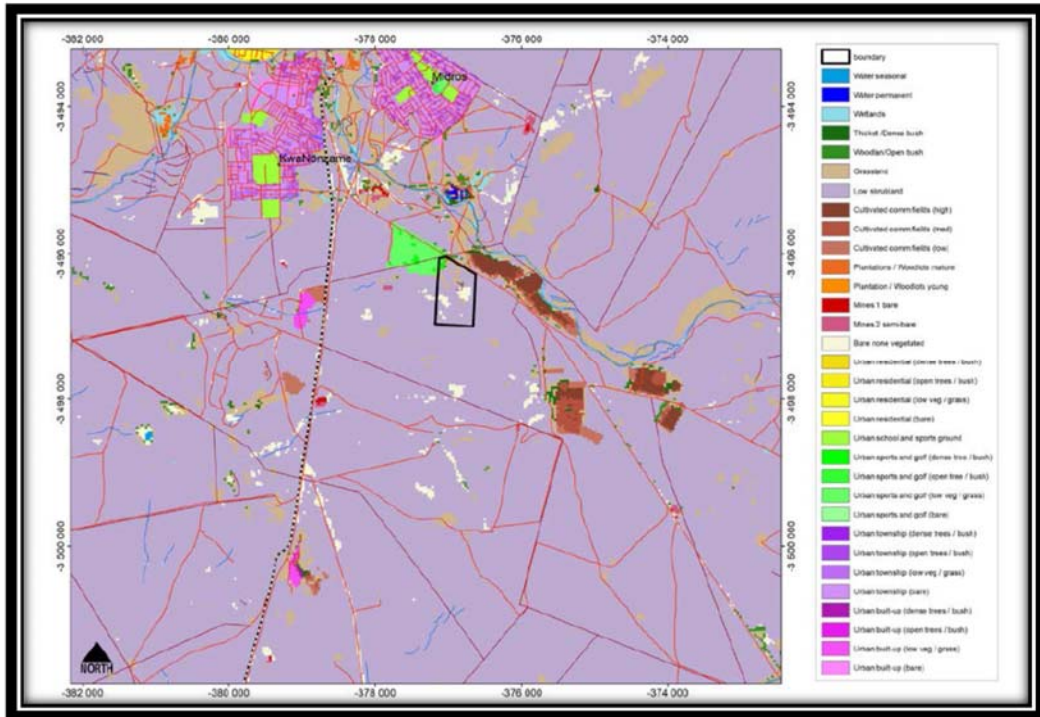


Figure 21: Land cover map (DALRRD)

The Agricultural Specialist concluded: *“It is our professional view that no high potential land will be lost and that the development proposed will only benefit farming as a land use and as an industry.”*

## 9. ENVIRONMENTAL IMPACT ASSESSMENT

### 9.1 ASSESSMENT CRITERIA

Impacts were rated using the following methodology:

Nature of the potential impact		Description of the effect, and the affected aspect of the environment
Duration (time scale)	Short term	Up to 5 years
	Medium term	6 – 15 years
	Long term	More than 15 years
Extent (area)	Local	Confined to study area and its immediate surroundings
	Regional	Region (cadastral, catchment, topographic)
	National	Nationally (The country)
	International	Neighboring countries and the rest of the world.
Magnitude (Intensity)	Low	Site-specific and wider natural and/or social functions and processes are negligibly altered. ((A low intensity impact will not affect the natural, cultural, or social functions of the environment).
	Medium	Site-specific and wider natural and/or social functions and processes continue albeit in a modified way. (Medium scale impact will alter the different functions slightly).

Nature of the potential impact		Description of the effect, and the affected aspect of the environment
	High	Site-specific and wider natural and/or social functions and processes are severely altered. (A High intensity impact will influence these functions to such an extent that it will temporarily or permanently cease to exist).
Probability	Improbable	Possibility of occurrence is very low. (Such an impact will have a very slight possibility to materialise, because of design or experience).
	Possible	There is a possibility that the impact will occur
	Probable	It is most likely that the impact will occur
	Definite	The impact will definitely occur
Significance	Insignificant	Impact is negligible and will not have an influence on the decision regarding the proposed activity (No mitigation is necessary)
	Very Low	Impact is very small and should not have any meaningful influence on the decision regarding the proposed activity (No mitigation is necessary)
	Low	The impact may not have a meaningful influence on the decision regarding the proposed activity (No mitigation is necessary)
	Medium	The impact should influence the decision regarding the proposed activity (The project can only be carried through if certain mitigatory steps are taken)
	High	The impact will influence the decision regarding the proposed activity
	Very High	The proposed activity should only be approved under special circumstances
Reversibility	Low	There is little chance of correcting the adverse impact
	Medium	There is a moderate chance of correcting the adverse impact
	High	There is a high chance in correcting the adverse impact
Risk	Low	Assessing a risk involves an analysis of the consequences and likelihood of a hazard being realized. In decision-making, low-consequence / low-probability risks (green) are typically perceived as acceptable and therefore only require monitoring.
	Medium	Other risks (amber) may require structured risk assessment to better understand the features that contribute most to the risk. These features may be candidates for management
	High	High-consequence / high-probability risks (red) are perceived as unacceptable and a strategy is required to manage the risk.

Attributes associated with the alternatives were assessed and is outlined below:

### **Geographical attributes**

The Geographical attributes of an area relates to the characteristics of a particular region, area or place. It influences the determination of site alternatives as it relates to the location of a site in relation to relevant features in the area.

### **Physical attributes**

Physical attributes of an area relates to the processes and patterns in the natural environment. For the purpose of this assessment, the following processes and patterns have been investigated. Geology, soil, topography and landforms, climate and meteorology, surface water and ground water.

### **Biological attributes**

Biological attributes for the purpose of this study includes the distribution of species and ecosystems in geographic space and through geological time. Organisms and biological communities often vary in a regular fashion along geographic gradients of latitude, elevation, isolation and habitat area. The two main branches assessed will be:

Phytogeography is the branch of biogeography that studies the distribution of plants.

Zoogeography is the branch that studies distribution of animals.

### **Social attributes**

Social attributes is closely related to social theory in general and sociology in particular, dealing with the relation of social phenomena and its spatial components.

### **Economic attributes**

Economic attributes includes the location, distribution and spatial organization of economic activities and also takes into account social, cultural, and institutional factors in the spatial economy of the development.

### **Heritage attributes**

The broad generic term Cultural Heritage Resources refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of paleontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

### **Cultural attributes**

Cultural attributes relates to the specific characteristics such as language, religion, ethnic and racial identity, and cultural history & traditions of people. These attributes influences family life, education, economic and political structures, and, of course, business practices.

It should be noted that the above mentioned attributes do not occur in isolation and it is not uncommon for an identified impact to overlap with two or more of these attributes. Also note, not all risks require comprehensive and detailed assessment. Solid problem formulation should allow decision-makers to evaluate the extent of subsequent analysis required. The level of effort put into assessing each risk should be proportionate to its significance and priority in relation to other risks, as well as its complexity, by reference to the likely impacts. Consideration should be given to stakeholders' perceptions of the nature of the risk.



ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING					
Environmental Attribute	Potential impacts and risks	Assessment criteria	Assessment rating (With mitigation)	Proposed mitigation	Assessment rating (Without mitigation)
<i>DIRECT IMPACTS:</i>					
Geographical Physical Social Economic	40,537 hectares of indigenous vegetation will be eradicated in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot.	Duration	Long term	Obtain the necessary environmental authorization for the development.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Low		Low
		Reversibility	Low		Low
		Risk	Low		Medium
	Manure Composting (Alternative 1)  Carcasses will be disposed into the manure composting area, whereby it will take approximately 5-6 months to decompose, per carcass, with respect to mass.	Duration	Long term	Conduct a Fauna and Flora Habitat survey to determine the sensitivity of the area.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Medium		High
		Reversibility	Low		Low
		Risk	Low		Medium
	The sheep feedlot will generate waste in the form of manure and the carcasses.	Duration	Long term	Implement the mitigation measures as described in the Environmental Management Plan.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Medium		High
		Reversibility	Low		Low
		Risk	Low		Medium
70 ton of coal, 23 cubic meters of diesel and 0,8 cubic meters of oil will be stored on site.	Duration	Long term	Composting adds value to the carcass as it can be sold as compost.	Long term	
	Extent	Local		Local	
	Magnitude (Intensity)	High		High	
	Probability	Definite		Definite	
	Significance	Medium		High	
	Reversibility	Low		Low	
	Risk	Low		Medium	
A Solar farm will form part of this proposed development and will have an impact on the airfield that is located 1,2 kilometres towards the south.	Duration	Long term	Plan for the construction of a waste storage and treatment facility, comprising of three Sedimentation ponds, two Evaporation ponds and a Manure Composting area in order to treat the manure and the carcasses that will originate from the Sheep Feedlot.	Long term	
	Extent	Local		Local	
	Magnitude (Intensity)	High		High	
	Probability	Definite		Definite	
	Significance	Medium		Medium	
	Reversibility	Low		Low	
	Risk	Low		Medium	
	Duration	Long term	Obtain the necessary Environmental Authorization for the operation of this facility.  As this facility will have an Operational component, an Engineer will have to prepare method statement for this phase of the proposed development. The developer should also budget for the continues internal Audits and the Annual External Audit.	Long term	
	Extent	Local		Local	
	Magnitude (Intensity)	High		High	
	Probability	Definite		Definite	
	Significance	Medium		Medium	
	Reversibility	Low		Low	
	Risk	Low		Medium	
	Duration	Long term	Plan for the construction and operation of facilities and infrastructure to ensure safe storage and handling of these products.	Long term	
	Extent	Local		Local	
	Magnitude (Intensity)	High		High	
	Probability	Definite		Definite	
	Significance	Medium		Medium	
	Reversibility	Low		Low	
	Risk	Low		Medium	
	Duration	Long term	It is a fact that the proposed development will have a definite visual impact. It is not envisaged that this aspect will have a significant impact as it is not located on a ridge or a mountain. The area has been used as		
	Extent	Local			
	Magnitude (Intensity)	High			
	Significance	Medium			

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING					
Environmental Attribute	Potential impacts and risks	Assessment criteria	Assessment rating (With mitigation)	Proposed mitigation	Assessment rating (Without mitigation)
		Reversibility	Low	a golf course in the past and is by no means pristine.	Medium
		Risk	Low		
	Services (water, sewer, roads, storm water, electricity and solid waste removal) will be needed for the sustainable implementation of the proposed development.	Duration	Long term	Plan for the provision of services for the development. Appoint a Civil Engineer to assess the availability and design of services to ensure a sustainable development.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Low		Low
		Risk	Low		Medium
	Disturbed surfaces can lead to erosion and dust pollution.	Duration	Short term	Plan to rehabilitate disturbed surfaces which can lead to erosion and dust pollution. Prepare method statements to this effect.  Start the rehabilitation of disturbed surfaces as soon as possible. Spray bare surfaces with water to prevent dust pollution.	Medium term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Foreign and invader plant species are likely to invade disturbed areas.	Duration	Short term	Start the extermination of any invasive species as soon as possible and maintain the eradication programme.	Medium term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	The proposed development can cause pollution of surface and underground water.	Duration	Short term	Plan for the provision and maintenance of infrastructure to prevent pollution of surface and underground water.  Provide portable ablution facilities that will not cause pollution during the construction phase. (There should be 1 Chemical toilet for every 30 workers on site.)	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
Reversibility		High	High		
Risk		Low	Medium		
The proposed development can have an impact on the soil and geology.	Duration	Long term	Plan to manage possible impacts that the project can have on the soil and geology.  Properly plan the construction phase in such a manner that impacts on the soil and geology of the area can be minimised.	Long term	
	Extent	Local		Local	
	Magnitude (Intensity)	Low		Medium	
	Probability	Definite		Definite	
	Significance	Medium		Medium	
	Reversibility	High		High	
	Risk	Low		Medium	

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING					
Environmental Attribute	Potential impacts and risks	Assessment criteria	Assessment rating (With mitigation)	Proposed mitigation	Assessment rating (Without mitigation)
				The findings of the Geotechnical Engineer must be incorporated into the design of the project.	
	Excavations on site will pose a danger as it can collapse on people or on equipment and people- especially small children who may fall into it.	Duration	Short term	Plan to safeguard open excavations in order to alleviate the danger of collapse on people or on equipment and people- especially small children who may fall into it. Ensure that excavations are dug according to specifications as prescribed by the Civil Engineer. Ensure that open excavations are demarcated as required by the Occupational Health and Safety Act.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
<i>Indirect impacts:</i>					
Geographical Physical Social Economic	Dust will be generated during the construction phase and could impact on the surrounding area.	Duration	Short term	Plan to control dust generation from the proposed project which could impact on the surrounding area.  Spray water on open surfaces to ensure that dust does not cause air pollution during construction.  Start the rehabilitation of disturbed surfaces as soon as possible	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Spills of lubricants / oils and diesel can take place on bare soil.	Duration	Short term	Plan and compile method statements to implement measures for the prevention and or handling of spills of lubricants / oils that can take place on bare soil.  Prevent spills of lubricants/oils that can take place on bare soil. This will include the use of drip trays for vehicles that are standing for more than 24 hours.  Ensure that all construction vehicles are in good working order and not leaking oil and or fuel.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Waste materials such as glass, plastic, metal or paper may present a possible pollution hazard	Duration	Long term	Plan to provide method statements on the handling of waste materials such as glass, plastic, metal or paper which may present a possible pollution hazard  Implement the management plan to ensure that:	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING					
Environmental Attribute	Potential impacts and risks	Assessment criteria	Assessment rating (With mitigation)	Proposed mitigation	Assessment rating (Without mitigation)
	Increased employment opportunities.	Risk	Low	All construction rubble is disposed of in a safe and environmentally acceptable manner. NO concrete, gravel or other rubbish will be allowed to remain on site after the construction phase.  All cement is housed as to prevent spills (due to rain and or handling errors).  NO glass, plastic, metal, or paper shall be allowed to pollute the area.	Medium
		Duration	Long term	Plan to create new employment opportunities.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium	Plan to use local labour to ensure local skills development will take place.	Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium	Ensure compliance with the requirements of the Occupational Health and Safety Act and the Employment Equity Act.	Medium
		Risk	Low		Medium
<i>Cumulative impacts:</i>					
Geographical Physical Social Economic	Air pollution as a result of steam generation.	Duration	Long term	The proposed generation of steam falls below the threshold as described in the Air Quality Act (Act 39 of 2004).	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium		Medium
		Risk	Low		Low
		Extent	Local		Local
	Increased noise pollution as a result of the operational activities of the feed mill and the sheep feedlot.	Duration	Long term	The proposed development is located more than 2 kilometres away from the nearest residential development. In addition the ambient noise created by the N10 that is located adjacent to site has already disturbed the "rural" character of the area.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium		Medium
		Risk	Low		Low
		Extent	Local		Local
	Increased need for services (solid waste, bulk water supply water, sewage, electricity and storm water).	Duration	Long term	Plan to ensure that the services (solid waste, bulk water supply water, sewage, electricity and storm water) are designed and constructed in such a manner that it will not cause Environmental degradation.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High	High	
		Reversibility	High	High	
		Risk	Low	Appoint a Civil Engineer to assess the availability and design of services to ensure a sustainable development.	Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING					
Environmental Attribute	Potential impacts and risks	Assessment criteria	Assessment rating (With mitigation)	Proposed mitigation	Assessment rating (Without mitigation)
				Ensure that the development is constructed as planned.	
	Increase in traffic volumes that will result from the proposed development	Duration	Long term	Plan for the increase in traffic volumes that will result from the proposed development. The Town and Regional Planner will have to design the layout of the development in such a way that accessibility will not become a problem. Appoint a Traffic engineer to assess the traffic volumes and existing road network and determine whether upgrades are necessary	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		High
		Reversibility	Low		Low
		Risk			Medium
	Loss of indigenous vegetation and Agricultural land.	Duration	Long term	No mitigation measures possible.  The Agricultural potential is considered Low and the area is not pristine as it has been used as a Golf course in the past.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Low		Low
		Reversibility	Low		Low
		Risk			Low

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)						
ALTERNATIVE 2: INCINERATION PLANT						
Environmental Attribute	Potential impacts and risks	Assessment criteria	Assessment rating (With mitigation)	Proposed mitigation	Assessment rating (Without mitigation)	
<i>DIRECT IMPACTS:</i>						
Geographical Physical Social Economic	The incineration process neutralises the danger of possible ground water pollution and converts the post-incineration residue into a sterile, easily disposable by-product which can be re-used.  The incineration units will be sized based on the above-mentioned mortality rate requirement for the site. The units are powered by either Diesel or Gas. In this instance, the viable option would be to adopt a diesel-operated unit due to the proposed diesel tank bunker facility located in the feed mill area of the site, and for efficient access. The stored diesel would be pumped into smaller tanks and transported via trucks to the Incineration facility, located near the manure composting area of the site	Duration	Long term	<u>Disadvantages</u> The incineration process causes air pollution and an a licence will have to be obtained for this process. It will also require long-term external auditing that will render this option not viable in the long run.  It is proposed as a mitigation measure not to proceed with this option and to rather implement Alternative 1.	Long term	
		Extent	Local		Local	
		Magnitude (Intensity)	High		High	
		Probability	Definite		Definite	
		Significance	Medium		Medium	
		Reversibility	Low		Low	
		Risk			Low	Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 3 MORTALITY PIT					
Environmental Attribute	Potential impacts and risks	Assessment criteria	Assessment rating (With mitigation)	Proposed mitigation	Assessment rating (Without mitigation)
<i>DIRECT IMPACTS:</i>					
Geographical Physical Social Economic	A mortality pit entails the construction of a sealed container (normally an underground bunker) that the carcasses are disposed in.	Duration	Long term	Disadvantages It is envisaged that with a feedlot of this scale, the mortality pit will not be viable, as it will have to have a very large capacity.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite	It is proposed as a mitigation measure not to proceed with this option and to rather implement Alternative 1.	Definite
		Significance	Medium		Medium
		Reversibility	Low		Low
		Risk	Low		Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 4: (No-Go Option)					
Environmental Attribute	Potential impacts and risks	Assessment criteria	Assessment rating (With mitigation)	Proposed mitigation	Assessment rating (Without mitigation)
<i>DIRECT IMPACTS:</i>					
Geographical Physical Social Economic Cultural	No indigenous vegetation will be removed.	Duration	Long term	No mitigation measures required.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	Low		Low
		Risk	Medium		Medium
<i>Indirect impacts:</i>					
Geographical Physical Social Economic Cultural	No new employment opportunities will be created during the planning and design phase.  No skills enhancement will take place  If this option is implemented, the projected boost to the local and regional economy will not take place.	Extent	Local	Ensure that the development is constructed and operated as planned.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium		Medium
		Risk	High		High
		<i>Cumulative impacts:</i>			
Geographical Physical Social Economic Cultural	If this option is implemented, the projected boost to the local and regional economy will not take place.  No new employment opportunities will be created. No improvement to local skills development will take place. No broadened Tax base for the Local Municipality.	Extent	Local	Ensure that the development is constructed and operated as planned.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	High		High
		Risk	Medium		Medium



**ENVIRONMENTAL IMPACT ASSESSMENT (Construction phase)**

**ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING**

Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute
<i>DIRECT IMPACTS:</i>					
Geographical Physical Social Economic	40,537 hectares of indigenous vegetation will be eradicated in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot.	Duration	Long term	Obtain the necessary environmental authorization for the development.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Low		Low
		Risk	Low		Medium
	Services (water, sewer, roads, storm water, electricity and solid waste removal) will be needed for the sustainable implementation of the proposed development.	Duration	Long term	Construct the infrastructure in accordance with the designs.  Obtain the necessary environmental authorization for the development. Obtain the necessary Water Use Licenses.  Implement the mitigation measures as described in the Environmental Management plan.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Medium		High
		Reversibility	Low		Low
		Risk	Low		Medium
	Un-rehabilitated, disturbed surfaces can lead to erosion and dust pollution.	Duration	Short term	Start the rehabilitation of disturbed surfaces as soon as possible.  Spray bare surfaces with water to prevent dust pollution.	Medium term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
Foreign plant species are likely to invade disturbed areas.	Duration	Short term	Start the extermination of any invasive species as soon as possible and maintain the eradication programme.	Medium term	
	Extent	Local		Local	
	Magnitude (Intensity)	Low		Low	
	Probability	Definite		Definite	
	Significance	Medium		Medium	
	Reversibility	High		High	
	Risk	Low		Medium	
Poorly planned ablution facilities for construction workers may cause pollution of surface and underground water.	Duration	Short term	Provide portable ablution facilities that will not cause pollution during the construction phase.	Short term	
	Extent	Local		Local	
	Magnitude (Intensity)	Medium		Medium	
	Probability	Definite		Definite	

**ENVIRONMENTAL IMPACT ASSESSMENT (Construction phase)**

**ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING**

Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	The proposed project can impact on the soil and geology.	Duration	Long term	Implement the findings of the Geo-Technical Engineer.  Prevent spills of lubricants/oils that can take place on bare soil. This will include the use of drip trays for vehicles that are standing for more than 24 hours.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	The vegetation of the area will be removed during the construction phase, which will destroy floral and faunal habitats.	Duration	Short term	Start with the rehabilitation of vegetation to minimize the negative effects of the removal of plants.  The rule must be to minimize the disturbance of animal life by keeping the footprint as small as possible.  No snares may be set.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Open excavations can be dangerous as they can either collapse on people or on equipment and people- especially small children, can fall into them.	Duration	Short term	Ensure that the excavations are dug according to specifications as prescribed by the Civil Engineer.  Ensure that open excavations are demarcated as required by the Occupational Health and Safety Act.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
Significance		Medium	Medium		
Reversibility		High	High		
Risk		Low	Medium		
<i>Indirect impacts:</i>					
Geographical Physical Social Economic	Dust generation from the proposed project could impact on the surrounding area.	Duration	Short term	Spray water on open surfaces to ensure that dust does not cause air pollution during construction.  Start the rehabilitation of disturbed surfaces as soon as possible	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Spills of lubricants / oils can take place on bare soil.	Duration	Short term	Prevent spills of lubricants/oils that can take place on bare soil. This will include the use of drip trays for vehicles	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable

**ENVIRONMENTAL IMPACT ASSESSMENT (Construction phase)**

**ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING**

Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute	
		Significance	Medium	that are standing for more than 24 hours.	Medium	
		Reversibility	High			High
		Risk	Low		Ensure that all construction vehicles are in good working order and not leaking oil and or fuel. No vehicles may be serviced on site.	Medium
	Waste materials such as glass, plastic, metal or paper present a possible pollution hazard	Duration	Short term	Implement the management plan to ensure that: All construction rubble is disposed of in a safe and environmentally acceptable manner. NO concrete, gravel or other rubbish will be allowed to remain on site after the construction phase.  All cement is housed as to prevent spills (due to rain and or handling errors).  NO glass, plastic, metal, or paper shall be allowed to pollute the area.	Short term	
		Extent	Local		Local	
		Magnitude (Intensity)	Low		Low	
		Probability	Probable		Probable	
		Significance	Medium		Medium	
		Reversibility	High		High	
		Risk	Low		Medium	
	Non-compliance to the relevant legislation may cause social and environmental problems.	Duration	Short term	Ensure that contractors (construction phase) abide by all the requirements of the Occupational Health and Safety Act.  Ensure that all contractors are aware of the consequences of non-compliance to the relevant legislation regarding the above-mentioned act as well as with regard to the environment (acts, regulations, and special guidelines).	Long term	
		Extent	Local		Local	
		Magnitude (Intensity)	Medium		Medium	
		Probability	Probable		Probable	
		Significance	Medium		Medium	
		Reversibility	High		High	
		Risk	Low		Medium	
	New employment opportunities will be created. Local skills development will take place.	Duration	Long term	No mitigation measures needed apart from the fact that contractors will have to ensure that they abide to the requirements of the	Long term	
		Extent	Local		Local	
		Magnitude (Intensity)	Medium		Medium	
		Probability	Definite		Definite	
		Significance	Medium		Medium	

ENVIRONMENTAL IMPACT ASSESSMENT (Construction phase)					
ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING					
Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute	Environmental Attribute
		Reversibility	Medium	Occupational Health and Safety Act and the Employment Equity Act.	Medium
		Risk	Low		Medium
Cumulative impacts:					
Geographical Physical Social Economic	Enhancement of the social well-being of the local communities as a result of increased employment opportunities.	Duration	Long term	Ensure that the development is constructed as planned.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium		Medium
		Risk	Low		Medium
	Solid waste: The proposed development will add additional solid waste into the existing waste stream of the Municipality.  Sewage: The proposed development will add additional sewage.  Water supply: The proposed development will add pressure to the water supply.	Duration	Long term	Ensure that the development is constructed as planned by the Civil Engineer.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	High		High
		Risk	Low		Medium
	Traffic: The proposed development will result in an increase in traffic in the immediate surroundings of the proposed development.	Duration	Long term	Ensure that the development is constructed as planned by the Town and Regional Planner and findings of the Traffic Engineer for upgrading the accesses are implemented	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		High
		Reversibility	Low		Low
		Risk	Medium		Medium
	Indigenous vegetation will be removed and Agricultural Land will be lost.	Duration	Long term	No mitigation measures possible.  The Agricultural potential is considered Low and the area is not pristine as it has been used as a Golf course in the past.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	Low		Low
		Risk	Medium		Medium
		Extent	Local		Local

ENVIRONMENTAL IMPACT ASSESSMENT (Operational Phase)					
ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING					
Environmental Attribute	Environmental Attribute	Environmental Attribute	Assessment rating (With mitigation)	Proposed mitigation	Assessment rating (Without mitigation)
DIRECT IMPACTS:					
Geographical		Duration	Long term		Long term

**ENVIRONMENTAL IMPACT ASSESSMENT (Operational Phase)**

**ALTERNATIVE 1: PROPOSAL AND MANURE COMPOSTING**

Environmental Attribute	Environmental Attribute	Environmental Attribute	Assessment rating (With mitigation)	Proposed mitigation	Assessment rating (Without mitigation)
Physical Social Economic Cultural	Poorly maintained and serviced infrastructure may cause environmental problems.	Extent	Local	It will be the responsibility of the Applicant to maintain the infrastructure and to ensure that the storage and treatment facilities are operated as prescribed by the Engineer and in the EMPr.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium- high		High
		Reversibility	High		Medium
		Risk	Low		High
	The waste storage and treatment facility, comprising of three Sedimentation ponds, two Evaporation ponds and a Manure Composting area in order to treat the manure and the carcasses that will originate from the Sheep Feedlot will have an operational component.	Duration	Long term	Ensure that the operation of this facility takes place in accordance with the methods as was designed by the Engineer.  Ensure that the continues internal Audits and the Annual External Audit takes place in order to monitor performance.  Implement the measures as described in the EMPr.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium- high		High
		Reversibility	High		Medium
		Risk	Low		High
<i>Indirect impacts:</i>					
Geographical Physical Social Economic Cultural	Lack of rehabilitation may cause problems	Duration	Long term	It will be the responsibility of the Applicant to ensure that the rehabilitation plan is implemented	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium- high		High
		Reversibility	High		Medium
		Risk	Low		High
<i>Cumulative impacts:</i>					
Geographical Physical Social Economic Cultural	Enhancement of the social well-being of the local communities.	Duration	Long term	Continue to make use of Local Labour to ensure that the Economic spinoffs that will be generated is kept in the area.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	High		High
		Risk	Low		Medium
Geographical Physical Social Economic Cultural	<u>Broadened tax base:</u> The proposed development will generate more income for the Local Municipality.	Duration	Long term	No mitigation measures required.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	High		High
		Risk	Medium		Medium

10. PUBLIC PARTICIPATION.

10.1 ADVERTISEMENT AND NOTICE

Publication name	Hartland Nuus	
Date published	19/08/2021	
Site notice 1 position	31°31'31.15"S	25° 1'53.99"E
Date placed	19/08/2021	

PROOF OF SITE NOTICE





2
Donderdag / Thursday 19 Augustus / August 2021

**DOODSBERIG / DEATH NOTICE**

Met liefdevolle hertoginge aan Maria Botha Gebore 01 Mei 1929, sag heengegaan op Maandag 16 Augustus 2021.

Privaat gedenkdienst word by Huis Oloewerjane gehou op Vrydag 20 Augustus 2021 om 11:00.

Verasing Privaat. Dienste gelewer deur Life After Life Funerals 042 2433 142 Somerset-Oos

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**KENNISGEWING / NOTICE**

ACVV Somerset-Oos nooi alle belangstellendes uit na hul Jaarvergadering op 24 Augustus 2021 om 09:30 by die ACVV-kantoor.

**INTEGRATED ENVIRONMENTAL IMPACT ASSESSMENT PROCESS (EIR AND SCOPING)**

Notice is hereby given of an Integrated Environmental Impact Assessment Process to be conducted. This process will be undertaken in terms of Section 24(9) and 44 made under section 24(5) of the National Environmental Management Act (Act No. 107 of 1998) (Amended Regulations 07 April 2017) and the National Environmental Management: Waste Act, 1998 (Act No. 59 of 2008) and the Schedule contained in Government Notice 921, published on 29 November 2013 in terms of section 19 of NEMWA. The proposed project is classified as, and will be conducted - in terms of NEMA: Government Notice No. R.327 of 2017 (Government Notice No. R.327 Listing Notice 1; Activity no 1(f) & 4(i)(a)); (Government Notice No. R.325 Listing Notice 2; Activity no 15) and in terms of NEMWA: Government Notice Regulation 921 of November 2013; Category A; (Activities 1 & 12) This advertisement complies with the instructions regarding such notices, National Environmental Management Act (Act No. 107 of 1998, as amended) (Amended Regulations promulgated on 17 April 2017) (Government Notice No. R.325 of 2017) (Regulation 412(c)(4)). The competent authority is the Eastern Cape department of Economic development, Environmental Affairs & Tourism. Notice is hereby also given in terms of section 41(4) of the National Water Act (Act 36 of 1998) (NWA) of the De Hous project intent to apply for a Water use licence. This application is for the use in terms of Sections 21 of the NWA for the (21(a)) abstraction of water from a ground water resource, via borehole. Additionally, run-off from site will be collected in an evaporation pond on site a 21 (g) - disposing of waste in a manner which may detrimentally impact a water resource.

**PROJECT NAME:**

Integrated Environmental Impact Assessment for the proposed clearance of 40.537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Insaba Ixethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.


**PROJECT DESCRIPTION:**

Clearance of 40.537 hectares of indigenous vegetation in order to establish a Feed Mill (feed mixing, pill making and packaging), Agricultural Recreation Area (animal display / demonstrations / auctions), Solar Farm (to supply electricity for the development) and Sheep Feedlot (10 880 sheep). The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds in order to treat run-off storm water that will originate from the Sheep Feedlot.

**CLIENT:**  
De Hous (Pty) Ltd

**CONSULTANT AND CONTACT PERSON:**  
Mr. J.P. De Villiers of AB Enviro Consult cc.  
7 Louis Leipoldt Street, Potchefstroom, 2531  
Tel: 083 5488 105  
Fax: 018 293 0671  
E-mail: jp@abenviro.co.za

Parties wishing to formally object to and / or comment on the proposed development are requested to forward their objections and comments (with reasons) to AB Enviro Consult, no later than 30 days after the date of this advertisement. An electronic copy of the draft Scoping Report is also available from AB Enviro Consult on request.



**SAAM BEREIK ONS MEER  
TOGETHER WE ACHIEVE MORE**

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**SYBOKHAARMARKVERSLAG - MOHAIR MARKET REPORT**

**MARKANALISE**

Die eerste Sybokhaarveiling van die 2021 Winter seisoen het vandag op 17 Augustus 2021 in Port Elizabeth plaasgevind met goeie mededinging tussen aankopers. Omdat perenniese Rind- en skaapveilinge baie op die veiling aangebied is met goeie komposisie uitkomst. Die veilingers het ook 'n fokus op die prys gehad. Klambeibokhaar stig met 8% met 'n marktempo van R295.78/kg en 100% is verkoop. Jongstokke stig met 2% met 'n marktempo van R281.47/kg en 'n marktempo van 95%. 'n grootstokke stig met 2% met 'n marktempo van R288.84/kg en 100% verkoop. Stok grootstokke stig met 1% gevolg met 'n marktempo van R201.05/kg. Dit het die kleinste verkoop op 95.8% te staan gebly met 'n marktempo van R124.52/kg met 8.3% teer is. OVK saamveelkings lotte het verskeie goed verkoop met die hoogste prys in Klambeibokhaar-afsettings R233/kg en R233/kg. Dit was ook die hoogste prys in die stig op die veiling gegee.

**MARKVOORSITTING**

Die voorstelling vir die volgende veiling is dat prys op huidige vlakke swaart voort te verhandel, alhoewel die volgende veiling 'n groot aanbidding is. Die tweede veiling van 2021 Winter seisoen word op die 19 September 2021 in Port Elizabeth gehou. So blyng deur OVK van Heerde, OVK, Suid-Afrikaanse.

OVK bied voorafke op veiel met by ons gelewer word, soos produksieskema's. Skakel gesis die OVK Veielkantoor in Port Elizabeth of 'n Tegniek Veielbehoorte vir meer inligting. Vind ook meer uit oor die opwindende nuwe Kommissiestruktuur op veiel besoek deur OVK. Produksie word ook herinner aan die klagteklare van OVK, waar beide beboen word met 23.9 sent vir elke kilogram veiel met deur OVK besoek word.

**17 Augustus 2021 / 17 August 2021**

Sommer Klambeibokke / Summer Kids (23 - 27 j)		Winter Klambeibokke / Winter Kids (24 - 30 j)			
OVK PURCAPE BN	R129.00/kg	24.2 j	OVK BN	R630.00/kg	24.4 j
PN STEINBERG, GRAAFF-RENET	R100.00/kg	21.9 j	OVK PURCAPE BN	R630.00/kg	24.2 j
OVK BN	R195.10/kg	22.8 j	BEITFONTEIN REEDS, BOWENET-GOEDKAS	R610.00/kg	25.5 j
OVK PURCAPE BN	R195.10/kg	20.8 j	OVK PURCAPE BN	R614.10/kg	25.7 j
OVK BN	R192.20/kg	23.2 j	OVK BN	R614.00/kg	25.5 j

Winter Jongstokke / Winter Young Goats (27 - 34u)		Grootstokke / Adults (30 - 40 j)			
KORINGDAL BRED, VICTORIA-HEERWEST	R401.00/kg	27.8 j	C WELZEN, STYLLERVILLE	R600.00/kg	39.2 j
KORINGDAL BRED, VICTORIA-HEERWEST	R400.00/kg	27.8 j	OVK BN	R607.00/kg	39.0 j
OVK BN	R470.10/kg	28.9 j	MS SHRES, JANSVILLE	R610.00/kg	39.2 j
OVK PURCAPE BN	R465.00/kg	30.2 j	OVK BN	R600.00/kg	39.9 j
OVK PURCAPE BN	R465.00/kg	28.1 j	OVK BN	R600.00/kg	1.0 j

OVK VESEL | SYBOKHAAR BESTUURDER / MOHAIR MANAGER, Gerrit van Heerde

**LANDMAN**

**Voedingdienste**

Sel: 079 3732 435

**Herkouervoeding in Perspektief**

Vele male bedoel ons goed deur sekere produkte te voer, maar onwetend benadeel ons daardie vertering van ons diere of kan selfs tekorte wat andersins nie bestaan het nie, veroorsaak. Deur nie ag te gee op die tipe voerkalk wat gebruik word nie, kan veroorsaak dat diere op sekere plase van yster (Fe) en koper (Cu) vergiftiging vrek.

Die doel van hierdie skrywe is om die belangrikheid van korrekte voeding te beklemtoon.

\* Skaap het 27mg Fe/kg voer nodig en 450mg/kg voer veroorsaak vergiftiging, terwyl 'n bees 45mg Fe/kg voer benodig en 900mg/kg voer, kan fataal wees. Landman Voedingdienste het die Ca en Fe-oud van geel voerkalk, grys-wit voerkalk, asook dié van melassemeel laat toets. Die Ca en Fe-

**NOTICE IN TERMS OF REGULATION 68 OF THE DEEDS REGISTRIES ACT, 1937**

Notice is hereby given in terms of Regulation 68 of the Deeds Registries Act, 1937, of the intention to apply for the issue of a certified copy of Deed of Transfer Number T110393/1997CTN passed by The executors in the estate of the late Abraham Johannes Petrus Louw, Estate Number 4277/95/3 in favour of JAN BEKKER LOUW, Identity Number 560124 5019 08 8, Married out of

**INTEGRATED ENVIRONMENTAL IMPACT ASSESSMENT PROCESS  
(EIR AND SCOPING)**

Notice is hereby given of an *Integrated Environmental Impact Assessment Process* to be conducted. This process will be undertaken in terms of Section 24(M) and 44 made under section 24(5) of the National Environmental Management Act (Act No. 107 of 1998) (Amended Regulations 07 April 2017) and the National Environmental Management: Waste Act, 1998 (Act No. 59 of 2008) and the Schedule contained in Government Notice 921, published on 29 November 2013 in terms of section 19 of NEMWA. The proposed project is classified as, and will be conducted - in terms of NEMA: Government Notice No. R.327 of 2017 (Government Notice No. R.327 Listing Notice 1; Activity no 1(ii) & 4(ii)(a)); (Government Notice No. R.325 Listing Notice 2: Activity no 15) and in terms of NEM:WA: Government Notice Regulation 921 of November 2013: Category A: (Activities 1 & 12) This advertisement complies with the instructions regarding such notices, National Environmental Management Act (Act No. 107 of 1998, as amended) (Amended Regulations promulgated on 17 April 2017) (Government Notice No. R.326 of 2017) (Regulation 41(2)(c)(d)). The competent authority is the Eastern Cape department of Economic development, Environmental Affairs & Tourism. Notice is hereby also given in terms of section 41(4) of the National Water Act (Act 36 of 1998) (NWA) of the De Heus project intent to apply for a Water use licence. This application is for the use in terms of Sections 21 of the NWA for the (21(a)) abstraction of water from a ground water resource, via borehole. Additionally, run-off from site will be collected in an evaporation pond on site a 21 (g) - disposing of waste in a manner which may detrimentally impact a water resource.

**PROJECT NAME:**

Integrated Environmental Impact Assessment for the proposed clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.

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**CLIENT:**

De Heus (Pty) Ltd

**CONSULTANT AND CONTACT PERSON:**

Mr. J.P. De Villiers of AB Enviro Consult cc,  
7 Louis Leipoldt Street, Potchefstroom, 2531

**Tel:** 083 5488 105

**Fax:** 018 293 0671

**E-mail:** jp@abenviro.co.za

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## 10.2 DETERMINATION OF APPROPRIATE MEASURES

Details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN R.982.

Key stakeholders (other than organs of state) identified in terms of Regulation 40(2)(d) of GN R.982:

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Mr. T. Du Plessis	Farm Middelpoos (neighbour)	0827723221
Mr Stef Schoeman	Farm Hebron	0634012757

PROOF OF NOTIFICATIONS SENT:



### 10.3 AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders. Key stakeholders identified in terms of Regulation 7(1) and (2) and Regulation 40(2) (a)-(c) of GN R.982:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Department of Water and Sanitation				manelim@dws.gov.za	
Eastern Cape Rural development and Agrarian Reform	The MEC: Ms Nonkqubela N Pieters	043 602 5006/7	040 635 0604		Private Bag X0040 Bhisho 5606
North West Department of Biodiversity	Head of Department	018 389 5719/ 5431/ 5688	018 392 4377		Private Bag X2039 Mmabatho 2735
Chris Hani District Municipality	The District Municipal Manager: Mr G Mashiyi	045 808 4600	045 838 1556		Private Bag X7121 Komani 5320
Inxuba Yethemba Local Municipality	The Municipal Manager	048 801 5000	048 881 1421		PO Box 24, Cradock, 5880
Ward 7; Inxuba Yethemba Local Municipality	The Councillor Ada Sammy			Ada.samm y20@gmail .com	
Inxuba Yethemba Local Municipality	Handri Vorster	082324752 4		Handri.vors ter@gmail. com	
Province of the Eastern Cape Transport	Planning Section	043 604 7400			Private Bag X0023 King Williams Town 5601
SANRAL	Ms I Mulder	012 844 8000	012 844 8200		PO Box 415 Pretoria 0001
Civil Aviation Authority	Planning Unit	011 545 1000		Obstacles @caa.co.z a	
Eskom	Mr. Dala	078 795 1188		dalaME@e skom.co.za	
SAHRA				SAHRIS	



PROOF OF NOTIFICATIONS:


## List of REGISTERED LETTERS

### Lys van GEREGISTREERDE BRIEWE

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Name and address of sender:  
 Naam en adres van afsender: **AB ENVIRO CONSULT**  
**7 LOUIS LEIPOLDT STREET**  
**POTCHEFSTROOM**  
**2531**




**Post Office**

Enquiries/Navrae  
Sharecall  
number/nommer  
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No	Name and address of addressee Naam en adres van geadreeseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-Klantskrif <b>REGISTERED LETTER</b> <small>(with an insurance option)</small> RC458541147ZA CUSTOMER COPY 301028R
1	The MEC; Eastern Cape Equalizer & Anti Reform Private Bag Xooqa Bisho, 5806					<b>REGISTERED LETTER</b> <small>(with an insurance option)</small> RC4585411332A CUSTOMER COPY 301028R
2	SMYTH, Mrs. Mabel, PO Box 415 Pictoung 0201					
3	HOOD Biodiversity Eastern Cape Chris Hanu PO Box 9636, Queenstown, 5320					<b>REGISTERED LETTER</b> <small>(with an insurance option)</small> RC4585411552A CUSTOMER COPY 301028R
4	Ken. Eastern Cape Transport Planning Unit Private Bag 10083, King Williams Town, 5300					
5	The Mm Inxuba Yethemba cm, PO Box 24 Cradock, 5850					<b>REGISTERED LETTER</b> <small>(with an insurance option)</small> RC4585411812A CUSTOMER COPY 301028R
6	Chris Hanu DM MC Makhaya Private Bag x7121, Kamma, 5320					<b>REGISTERED LETTER</b> <small>(with an insurance option)</small> RC4585411752A CUSTOMER COPY 301028R
7						
8						
9						
10						
Number of letters posted Getal briewe gepos		Total Totaal	R	R	R	R


Signature of client  
Handtekening van klient: 

Signature of accepting officer  
Handtekening van aanneembeampte: 

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100.00. No compensation is payable without documentary proof.  
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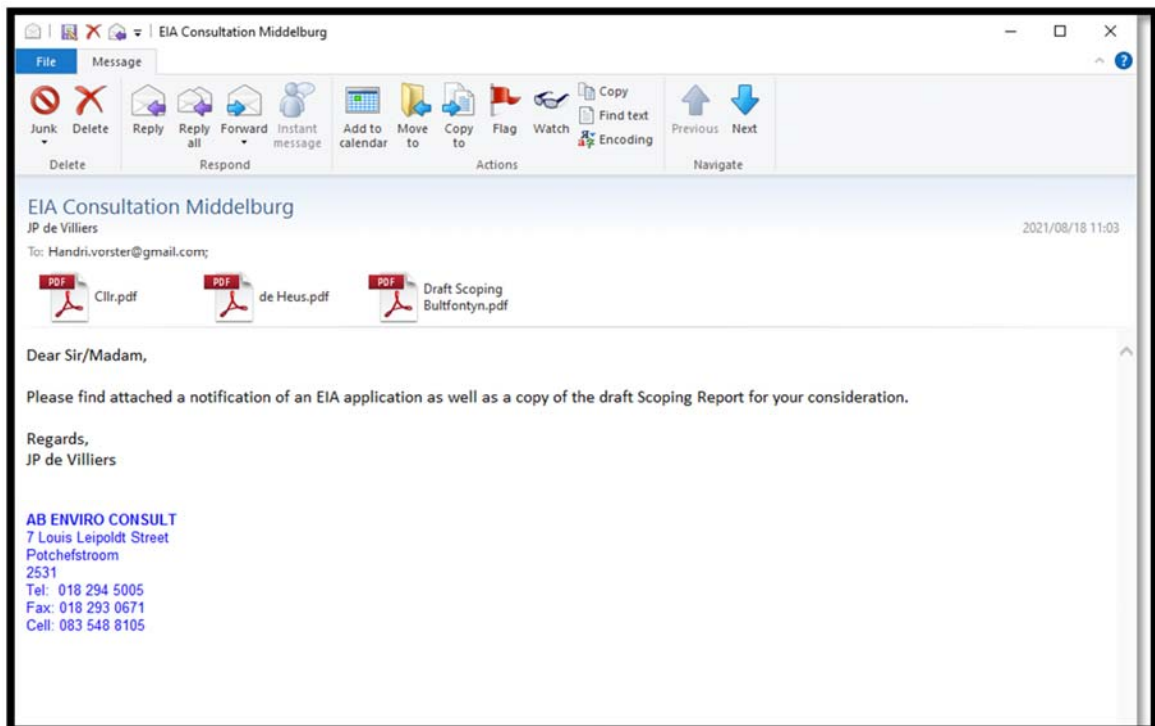
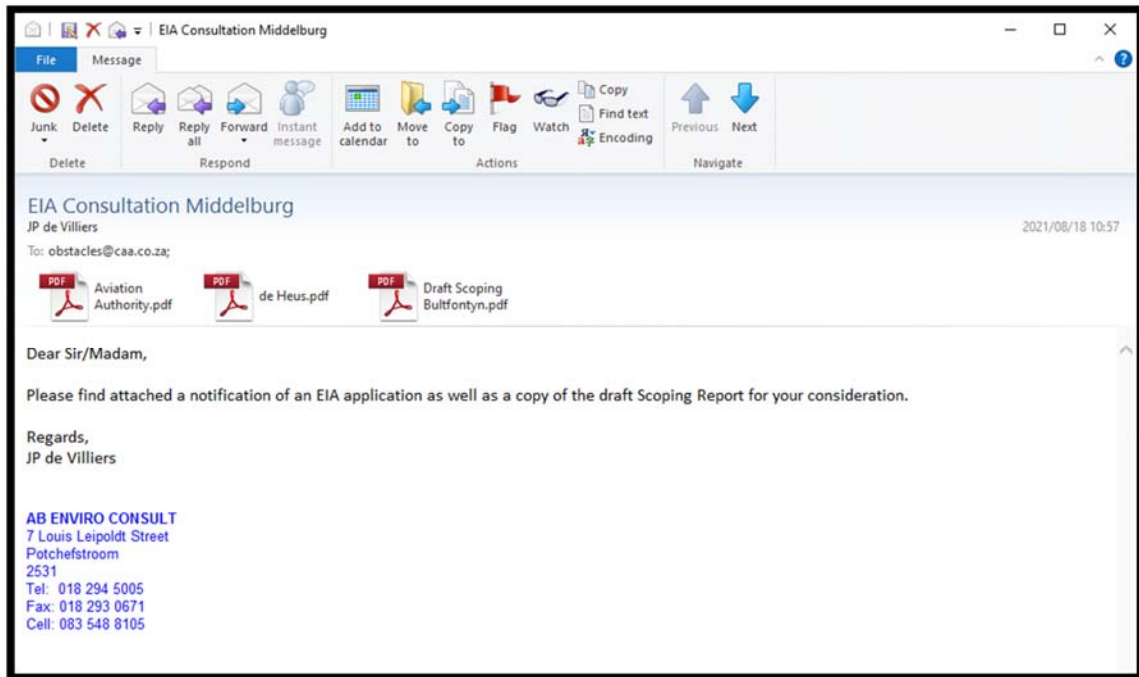
Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100.00. Geen vergoeding is sonder

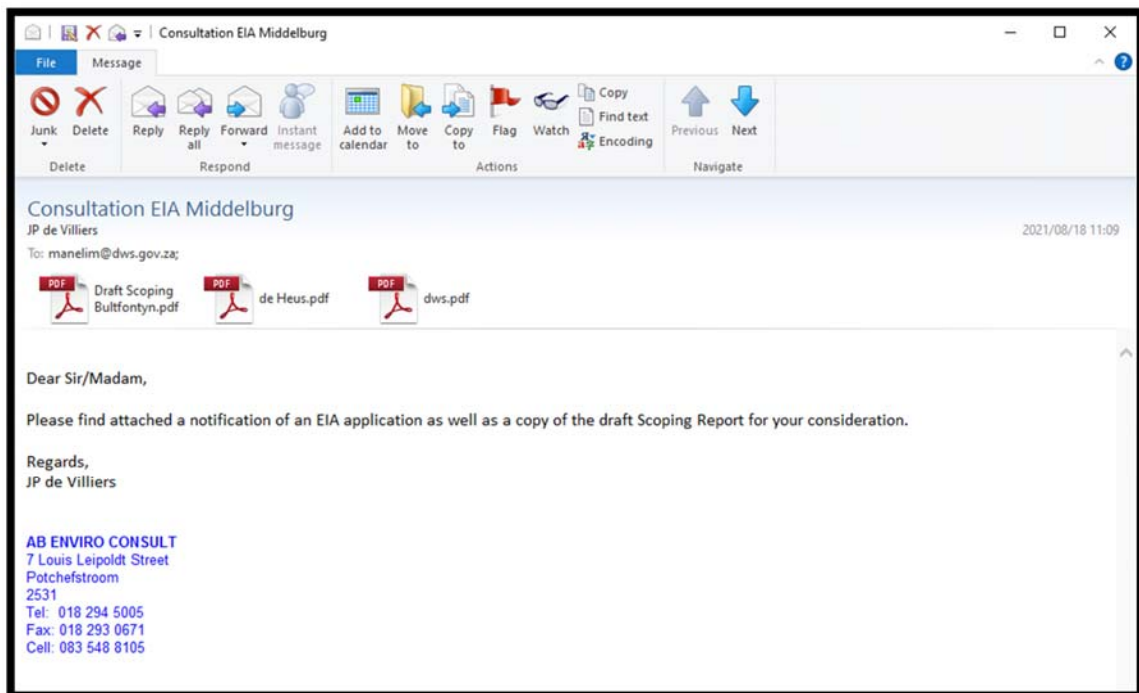
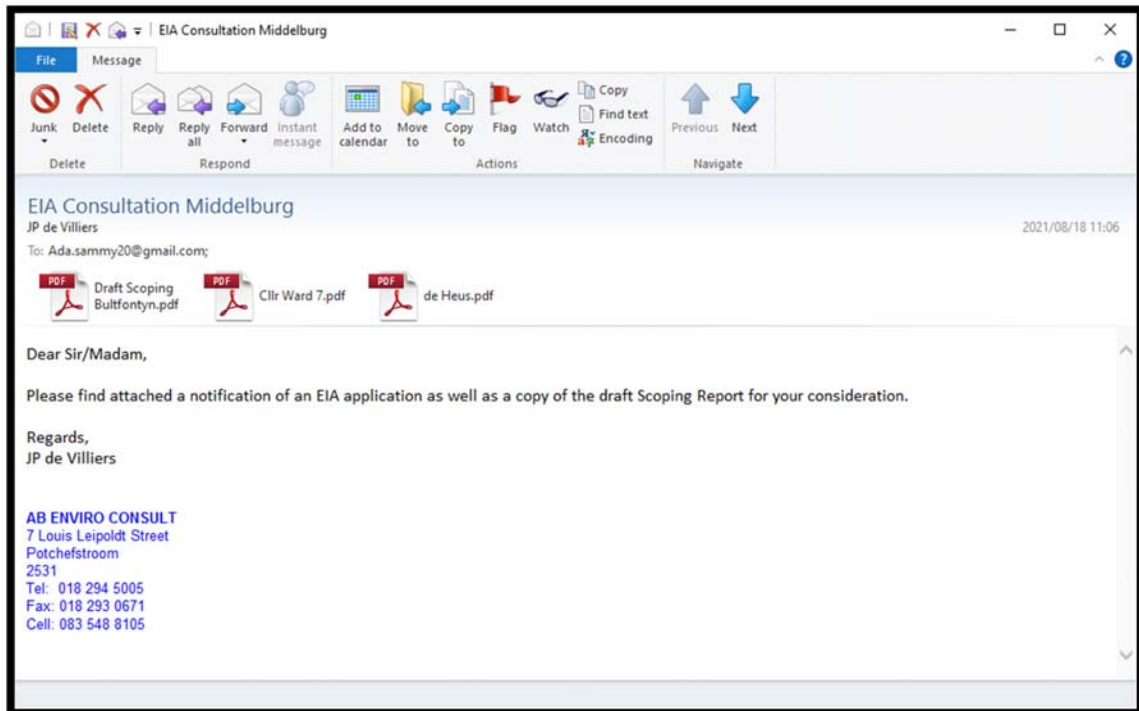
Date stamp

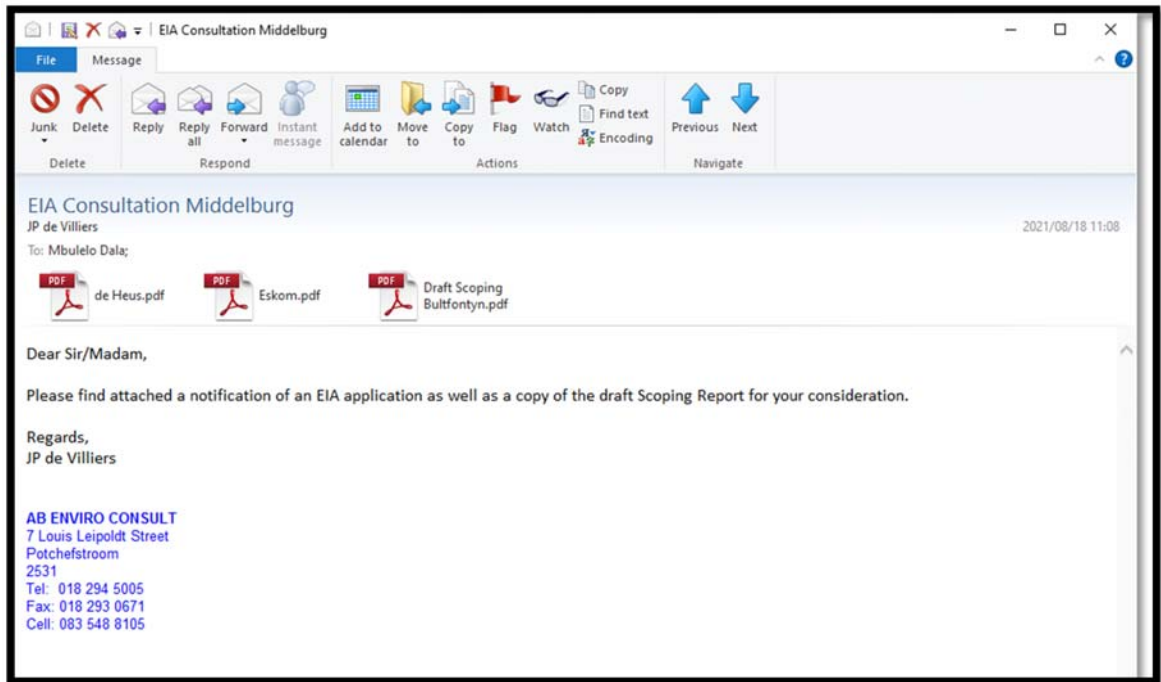


Datumstempel











## AB ENVIRO-CONSULT CC

Reg no. 2000/016653/23

7 Louis Leipoldt Street,  
Potchefstroom, 2531  
Fax: + 27 (18) 293 0671  
Cell: + 27 (83) 5488 105  
Email: [jp@abenviro.co.za](mailto:jp@abenviro.co.za)

19/08/2021

Department of Water and Sanitation  
Region: Eastern Cape  
Mr. M. Maneli  
[manelim@dws.gov.za](mailto:manelim@dws.gov.za)

Dear Sir/Madam

Integrated Environmental Impact Assessment for the proposed clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.

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Attached please find a notification of the proposed development as well as a copy of the draft Scoping report for your comments. We must receive your comments within a period of 30 days from the date of this letter. In the event of your organisation/department not wishing to comment on this matter, it would be appreciated if we could receive written confirmation thereof to enable us to continue with the finalisation of the application.

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Please do not hesitate to contact us should any further information or clarification be required.

Yours sincerely,

PROF. A.B. DE VILLIERS

PROF A B DE VILLIERS (M Sc, Ph D, SACNASP)  
MR.J.P. DE VILLIERS (M Sc, HED, EAP-EAPASA); MRS.J.E. DU PLOOY (M.E.M, EAP-EAPASA)



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19/08/2021

The MEC: Ms Nonkqubela N Pieters  
Eastern Cape Rural development and Agrarian Reform  
Private Bag X0040  
Bhisho  
5606

Dear Sir/Madam

Integrated Environmental Impact Assessment for the proposed clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.

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E-mail: [jp@abenviro.co.za](mailto:jp@abenviro.co.za)

19/08/2021

The HOD: Biodiversity Management  
Regional Manager: Environmental Affairs Dept of Economic Development, Environmental Affairs & Tourism: Chris Hani Region  
P O Box 9636  
Queenstown  
5320

Dear Sir/Madam

Integrated Environmental Impact Assessment for the proposed clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.

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19/08/2021

**SANRAL**  
**Ms. I. Mulder**  
**PO Box 415**  
**Pretoria**  
**0001**

Dear Sir/Madam

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19/08/2021

Province of the Eastern Cape Transport  
Planning Section  
Private Bag X0023  
King Williams Town  
5601

Dear Sir/Madam

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19/08/2021

Chris Hani District Municipality  
The District MM: Mr G Mashiyi  
Private Bag X7121  
Komani  
5320

Dear Sir/Madam

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19/08/2021

The Municipal Manager  
Mr. Xolela Msweli  
Inxuba Yethemba Local Municipality  
PO Box 24,  
Cradock  
5880

Dear Sir/Madam

Integrated Environmental Impact Assessment for the proposed clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.

AB ENVIRO CONSULT was appointed by De Heus PTY (LTD) to submit an application to the Eastern Cape department of Economic development, Environmental Affairs & Tourism for the above mentioned proposed development.

Attached please find a notification of the proposed development as well as a copy of the draft Scoping report for your comments. We must receive your comments within a period of 30 days from the date of this letter. In the event of your organisation/department not wishing to comment on this matter, it would be appreciated if we could receive written confirmation thereof to enable us to continue with the finalisation of the application.

If no response is however received from your Department/organisation within the said time, it will be assumed that your department/organisation does not wish to comment on this matter and the application will be processed further.

Please do not hesitate to contact us should any further information or clarification be required.

Yours sincerely,

PROF. A.B. DE VILLIERS

PROF A B DE VILLIERS (M Sc, Ph D, SACNASP)  
MR.J.P. DE VILLIERS (M Sc, HED, EAP-EAPASA); MRS.J.E. DU PLOOY (M.E.M, EAP-EAPASA)



## AB ENVIRO-CONSULT CC

Reg no. 2000/016653/23

7 Louis Leipoldt Street,  
Potchefstroom, 2531  
Fax: + 27 (18) 293 0671  
Cell: + 27 (83) 5488 105  
E-mail: [jp@abenviro.co.za](mailto:jp@abenviro.co.za)

19/08/2021

The Councillor Ward 7  
Ada Sammy  
Inxuba Yethemba Local Municipality  
[Ada.sammy20@gmail.com](mailto:Ada.sammy20@gmail.com)

Dear Sir/Madam

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Cell: + 27 (83) 5488 105  
E-mail: [jp@abenviro.co.za](mailto:jp@abenviro.co.za)

19/08/2021

The Councillor  
Handri Vorster  
Inxuba Yethemba Local Municipality  
[handri.vorster@gmail.com](mailto:handri.vorster@gmail.com)

Dear Sir/Madam

**Integrated Environmental Impact Assessment for the proposed clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.**

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Fax: + 27 (18) 293 0671  
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19/08/2021

Eskom  
[Mdala@eskom.co.za](mailto:Mdala@eskom.co.za)

Dear Sir/Madam

**Integrated Environmental Impact Assessment for the proposed clearance of 40.537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds and two Evaporation ponds.**

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10.4 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
To Follow	

10.5 COMMENTS AND RESPONSE REPORT

I&AP registered:	Comment received:	Response by the EAP:
To follow	To follow	

## 11. CONCLUDING STATEMENT.

The Applicant, De Heus (PTY) Ltd has appointed AB Enviro Consult CC, an independent environmental consultancy, to undertake an Integrated Environmental Impact Assessment for the proposed clearance of 40,537 hectares of indigenous vegetation in order to establish a Feed Mill, Agricultural Recreation Area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality, Eastern Cape Province. The proposed development will also entail the construction of three Sedimentation ponds, two Evaporation ponds and a Manure Composting area in order to treat the manure and the carcasses that will originate from the Sheep Feedlot.

The regulation and protection of the environment within South Africa occurs mainly through the application of various items of legislation, within the regulatory framework of the Constitution (Act 108 of 1996).

The primary legislation regulation for Environmental Impact Assessments (EIA) within South Africa is the National Environmental Management Act (NEMA, Act 107 of 1998). NEMA makes provision for the Minister of Environmental Affairs to identify activities which may not commence prior to authorisation from either the Minister or the provincial Member of the Executive Council (MEC). In addition, NEMA provides for the formulation of regulations in respect of such authorisations.

The EIA Regulations (2014) (amended 2017) allow for a Basic Assessment process for activities with limited environmental impact (listed in GN R. 327 and GN R.324, as amended in 2017) and a more rigorous two-tiered approach to activities with potentially greater environmental impact (listed in GN R. 325, 2017). This two-tiered approach includes both a Full Scoping and EIA Process.

The proposed development triggers a Full Scoping and EIA Process.

The purpose of this Application is to apply for authorization for the proposed establishment of a Feed Mill, Agricultural recreation area, Solar Farm and Sheep Feedlot on Portion 15 of Portion 1 of the Farm Bultfontyn, Inxuba Yethemba Local Municipality.

Based on the project description, a number of Listed Activities under Category A of the List of Waste Management Activities (GN R 921 of 2013) of the National Environment Management: Waste Act (NEM:WA) (Act No. 59 of 2008) are triggered

*In terms of the NEM:WA List of Waste Management Activities (GN R 921 of 2013), a person who wishes to commence, undertake or conduct a waste management activity listed under Category A, must conduct a basic assessment process set out in the Environmental Impact Assessment Regulations made under section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as part of a waste management licence application contemplated in section 45 read with section 20(b) of this Act.*

As such, a S&EIR process (Please note in this regard that this application is for a combination of the NEMA or NEM:WA activities and that S&EIR process applies for the NEMA Application) including an Environmental Management Programme (EMPr) are required for submission to the Competent Authority, DEDEAT, for the Licencing of the Waste Activities.

The National Development 2030 mentions that South Africa can eliminate poverty and reduce inequality by 2030 and this will require change, hard work, leadership and unity. Its goal is to improve the life chances of all South Africans, but particularly those young people who presently live in poverty. The plan asks for a major change in how government in general go about their lives. In the past, we expected government to do things for us. What South Africa needs is for all of us to be active citizens and to work together – government, business, communities – so that people have what they need to live the lives they would like.

The White Paper on Local Government<sup>1</sup> (1998) introduces the concept of “developmental local government” which is defined as: “Local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs, and improve the quality of their lives.” However the same document makes it clear that:

*“Local Government is not directly responsible for creating jobs. Rather, it is responsible for taking active steps to ensure that the overall economic and social conditions of the locality are conducive to the creation of employment opportunities.”*

The Chris Hani District Municipality developed and adopted a District Development Agenda that focuses on the development of all its Six Local Municipalities through the identification of competitive advantages of its local municipalities. This was later translated into an **Agro Industrial Plan** that has been used as a spring board to the proposed Special Economic Zone.

The Chris Hani Regional Development Strategy provides focused areas around which resources can be leveraged and mobilised in order to contribute to the broad overall objective of ensuring that all people in the district are able to benefit from the economy. The Competitive Advantage therefore for the district points to the broadly defined agricultural sector as the one with the most potential to contribute to job creation, promoting of livelihoods opportunities and contributing to sustained social and economic growth and development.

Whilst crop production and agro-processing sector remain important areas of intervention, the present cost of transport to high volume markets will most likely render local production uncompetitive until substantial economies of scale and consistent quality can be achieved.

**Value chain** integration implies looking at all the components of a particular sector and subsector and identifying what can be done or put in place to add value to what already exists, and in doing so, promote job creation and provide more livelihood opportunities.

While the districts’ agricultural potential is obvious, primary agricultural projects have had a minimal impact on unemployment. This situation necessitates strategies to increase value-added production by exploiting opportunities that exist along the various crop and livestock value chains. (Chris Hani District Municipality 2021-2022 Draft IDP)

Agriculture is one of the main economic sectors within the area. Agricultural activities can be sub-divided into two groups – crop farming and livestock farming. The Applicant has identified gaps in the value chain for both of these economic sectors being Lucerne (Crop farming) and sheep (Livestock farming). It is the intension of the applicant to add value to both of these identified

agricultural sectors and in doing so, create jobs and infrastructure. The increased employment in the area during both the construction and operational phase will also result in increased expenditure, which, in addition, will mean that more than just the proposed jobs required for the proposed development will be created due to economic spin-offs that will result.

#### Feed Mill

Feed mixing, pill making, packaging and ancillary works including grain and feed storage will form part of this operation. Lucerne that is produced extensively in the area and will be used to produce feed, thus adding value to primary products that are produced in the region. Maize that is also produced in the region will also be incorporated into the production process and a limited amount of this produce will also be value added. At full production the Feed Mill will produce 9 000 tons of feed per month and will generate 100 employment opportunities.

#### Agricultural recreational area.

This part of the proposed development will be for Animal display and demonstrations, auctions and ancillary activities and will be Open to the public, thus providing a platform for the people of the region to sell and display their animals and to come together as a community.

#### Solar Farm

Greenhouse gases (GHG), including CO<sub>2</sub> emissions are associated with the conventional provision of energy services and are a major cause of climate change. Globally, coal is the second largest primary energy source used worldwide (preceded by oil), and the first source for power generation. In terms of electricity generation or supply, South Africa is highly dependent on coal-fired power plants and therefore energy supply is carbon dioxide-intensive.

Renewable energy sources play a role in providing energy services in a sustainable manner, and in particular in mitigating climate change. Sustainable energy can be defined as energy which provides affordable, accessible and reliable energy services that meet economic, social and environmental needs within the overall developmental context of society, while recognising equitable distribution in meeting those needs. Sustainable energy is an element of sustainable development which is defined as development that meets the present needs and goals of the population without compromising the ability of future generations to meet theirs. On the overall sustainable development is underpinned by economic development (growth efficiency), social development (culture, heritage, poverty, and empowerment) and environmental development (pollution and natural resources).

The government of South Africa considers the use of renewable energy as a contribution to sustainable development. Sustainable development also implies the provision of electricity and other modern fuels to the commercial and industrial sectors to promote their economic competitiveness and future prosperity. (Department of Environmental Affairs (2015). EIA Guideline for Renewable Energy Projects. Department of Environmental Affairs, Pretoria, South Africa)

With the current situation of unreliable electricity provision in the Country, the Applicant has opted for the option of providing his own Electricity, thus ensuring a steady flow of electricity for his operations. In providing off-grid, renewable Electricity, the Applicant is also decreasing his Ecological footprint as he will not be using Electricity that has been generated from unrenovable energy sources.

### Sheep Feedlot

The Sheep Feedlot will be designed for 10 880 head of sheep. At the moment, only 24 head of sheep can be raised on the entire development site, as the area is very dry. The intensification of the Agricultural potential for the site is a huge advantage as the production capacity of the site will be raised to 10 880 head of sheep. This operation will also result in an additional 10 employment opportunities that will be generated.

### Treatment Facilities

In order to treat the manure and the carcasses that will originate from the Sheep Feedlot the construction of three Sedimentation ponds, two Evaporation ponds and a Manure Composting is proposed. The need for these activities lies in the fact that in order to ensure that the proposed development does not cause any harm the Environment, potential pollution has to be curbed. The purpose of the sedimentation system is to remove settleable solid material from the feedlot runoff and prevent it from entering the evaporation ponds. The Evaporation pond is sized based on calculation of the annual water balance (Annual Rainfall versus Evaporation Statistics) and is designed to contain the runoff/ effluent from the feedlot site.

The manure composting area will have a concrete base and will be able to accommodate the composting activities. The composting facility will generate additional income as the compost will be sold, thus ensuring that a potential source of pollution has been processed to a usable product

Consistent with national priorities, environmental authorities must support *"increased economic growth and promote social inclusion"*, whilst ensuring that such growth is *"ecologically sustainable"*. In the National Spatial Development Perspective (NSDP) it is highlighted that, to achieve the goal of stimulating sustainable economic activities and to create long-term employment opportunities, it is required that spending on economic infrastructure is focused in priority areas with potential for economic development, with development to serve the broader societies' needs equitably

The identification, description, evaluation and comparison of alternatives are important for ensuring a sound environmental scoping process.

### **Alternative operational aspects of the activity**

#### **Sheep Feed lot Mortality – Biomass Waste Disposal**

A predicted mortality rate of 2 sheep / day should be considered whereby each sheep could have a maximum estimated mass of 75kg. Therefore, an anticipated mass of 150kg / day will be considered when selecting a desired disposal process.

Alternatives are being investigated based on these predictions and the following options can be considered for the carcass disposal:

#### **Manure Composting (Alternative 1)**

Carcasses will be disposed into the manure composting area, whereby it will take approximately 5-6 months to decompose, per carcass, with respect to mass.



### Advantages

Composting adds value to the carcass as it can be sold as compost.

### **Incineration plant (Alternative 2)**

The incineration process neutralises the danger of possible ground water pollution and converts the post-incineration residue into a sterile, easily disposable by-product which can be re-used.

The incineration units will be sized based on the above-mentioned mortality rate requirement for the site. The units are powered by either Diesel or Gas. In this instance, the viable option would be to adopt a diesel-operated unit due to the proposed diesel tank bunker facility located in the feed mill area of the site, and for efficient access. The stored diesel would be pumped into smaller tanks and transported via trucks to the Incineration facility, located near the manure composting area of the site.

### Disadvantages

The incineration process causes air pollution and an a licence will have to be obtained for this process. It will also require long-term external auditing that will render this option not viable in the long run.

### **Mortality pit (Alternative 3)**

A mortality pit entails the construction of a sealed container (normally an underground bunker) that the carcasses are disposed in.

### Disadvantages

It is envisaged that with a feedlot of this scale, the mortality pit will not be viable, as it will have to have a very large capacity.

### **No-go Alternative**

The No-go Alternative has been considered for the proposed development as a hole. Should this Alternative be implemented the status quo will prevail and none of the advantages as listed in the "Need and desirability" section of this report will realise

Although this is only the Scoping phase of the proposed development, no "fatal flaws" has been encountered as of yet. All the issues envisaged at this stage can be mitigated.

## 12 PLAN OF STUDY FOR EIA

### 12.1 Description of the alternatives to be considered and assessed

One of the objectives of an EIA is to investigate alternatives to the proposed project. The IEM procedure stipulates that the environmental investigation needs to consider feasible alternatives for any proposed development. Therefore, a number of possible proposals or alternatives for accomplishing the same objectives should be identified and investigated. In order to ensure that the proposed development enables sustainable development, feasible alternatives must be explored (S. Cliff, 2015).

The identification, description, evaluation and comparison of alternatives are important for ensuring a sound environmental scoping process. Alternatives should be considered as a norm within the Environmental Process (S. Cliff, 2015).

#### Alternative operational aspects of the activity

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## **12.2 Description of the aspects to be assessed as part of the environmental impact assessment process**

In order to assess a proposed development it is important to take into consideration the principles of NEMA. These principles are outlined in Chapter 1 and DEDEAT as follows:

- 1) *“The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and—*
  - a. *shall apply alongside all other appropriate and relevant considerations, including the State’s responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination;*
  - b. *serve as the general framework within which environmental management and implementation plans must be formulated;*
  - c. *serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment;*
  - d. *serve as principles by reference to which a conciliator appointed under this Act must make recommendations; and*
  - e. *guide the interpretation administration and implementation of this Act, and any other law concerned with the protection or management of the environment.*
- 2) *Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.*
- 3) *Development must be socially, environmentally and economically sustainable.*
- 4) *(a) Sustainable development requires the consideration of all relevant factors including the following:*

- (i) *That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*
  - (ii) *that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*
  - (iii) *that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;*
  - (iv) *that waste is avoided. or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;*
  - (v) *that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;*
  - (vi) *that the development. use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;*
  - (vii) *that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and*
  - (viii) *that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.*
- (b) *Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.*
  - (c) *Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.*
  - (d) *Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.*
  - (e) *Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.*
  - (f) *The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation and participation by vulnerable and disadvantaged persons must be ensured.*
  - (g) *Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognizing all forms of knowledge, including traditional and ordinary knowledge.*

- (h) *Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.*
- (i) *The social, economic and environmental impacts of activities, including disadvantages and benefits must be considered, assessed and evaluated and decisions must be appropriate in the light of such consideration and assessment.*
- (j) *The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.*
- (k) *Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.*
- (l) *There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.*
- (m) *Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.*
- (n) *Global and international responsibilities relating to the environment must be discharged in the national interest.*
- (o) *The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.*
- (p) *The costs of remedying pollution, environmental degradation consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.*
- (q) *The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.*
- (r) *Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure."*

The following aspects and their possible impacts will be assessed

- ❖ Geology -structure and rock-type
- ❖ Topography- macro and micro-relief
- ❖ Climate: Temperature, rainfall, and wind.
- ❖ Soil
- ❖ Fauna
- ❖ Flora
- ❖ Surface Water
- ❖ Underground water
- ❖ Air Quality
- ❖ Noise
- ❖ Archaeology
- ❖ Cultural Sites
- ❖ Aesthetics

- ❖ Technical issues
  - ❖ Sociological Issues
  - ❖ Economic Issues
- The evaluation of concerns in order to assign priority to the important issues: The study is designed to address concerns as well as to prioritise issues as part of the process.
  - Developing a strategy for addressing and resolving each issue: All relevant issues will be addressed in order of priority. In this sense the inputs of all I&APs, as well as all other socio-economic factors of importance will be resolved in order of priority.
  - Providing feedback at regular intervals in which comments by authorities have been incorporated: Feedback to I&APs is the only logical way by which eventual acceptance can be achieved. It is therefore a standing practise in all studies conducted by the consultant that feedback is provided on a continuous basis.

### 12.3 Aspects to be assessed by specialists

The process followed can be described as follows:

- 1) The EAP was contracted by the land owner, De Heus (PTY) Ltd as their Independent Environmental Assessment Practitioner.
- 2) A Geotechnical Engineer was appointed to determine whether the Geology and Soils of the site is suitable for the proposed development
- 3) The Civil Engineer has been appointed to determine the capability of existing infrastructure to be linked to proposed development and readily available bulk services. He will also design the proposed infrastructure.
- 4) A SAHRA Specialist has been appointed to determine the possible impact of the development on Archaeological and Cultural features.
- 5) A Fauna and Flora Habitat specialist has been appointed to determine the impact of the proposed development on the Fauna and Flora of the area.
- 6) A Wetland Specialist was appointed to assess the status of the canal/drainage line that intersects the site.
- 7) An Aviation Specialist was appointed to assess the impact of the proposed development on the airfield that is located towards the south of the site.
- 8) An Agricultural Specialist was appointed to assess the agricultural potential of the site.
- 9) An Environmental Screening Process was conducted by the EAP to ensure that all the relevant Environmental Legislation is taken into consideration.
- 10) Desk top studies were conducted and alternatives assessed.
- 11) Site inspections were carried out to verify the outcomes of the desktop studies, and the preferred alternative defined.
- 12) A full Public Participation Process is being followed to obtain inputs from interested and affected parties.
- 13) All the information obtained from the above mentioned processes is being used to assess the Environmental Impact that the proposed development may have on the Environment and vice versa.



- 14) The inputs from Specialists, interested and affected parties, together with the knowledge of the EAP is being used to determine measures to avoid, mitigate and manage potential impacts. These measures are described in the Environmental Management Programme

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

### Outcome of the Initial Site Sensitivity Verification

The screening report generated using the national web based environmental screening tool lists a summary of the development site's environmental sensitivities. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Action required	Status
Agriculture Theme	Agricultural Compliance Statement	A Specialist has been appointed to compile this statement
Animal Species Theme	Specialist study required	An Ecological Fauna and Flora Habitat Assessment has been done
Aquatic Biodiversity Theme	Wetland and Fauna and Flora Habitat Study required.	A Wetland and an Ecological Fauna and Flora Habitat Assessment has been done
Archaeological and Cultural Heritage Theme	Civil Aviation Compliance Statement	A Phase 1 Heritage impact Assessment has been done
Civil Aviation Theme	Specialist study no required	A Specialist has been appointed to compile this statement
Defence Theme	No Action Required	No Action Required
Palaeontology Theme	Specialist study may be required	A Specialist has been appointed to compile this report.
Plant Species Theme	Specialist study required	An Ecological Fauna and Flora Habitat Assessment has been done in June 2021

Theme	Action required	Status
Terrestrial Biodiversity Theme	Specialist study required	An Ecological Fauna and Flora Habitat Assessment has been done in December 2020

The inputs from Specialists, interested and affected parties, together with the knowledge of the EAP will be used to determine measures to avoid, mitigate and manage potential impacts. These measures will be described in the Environmental Management Programme.

**12.4 Description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists,**

**And**

**12.5 Description of the proposed method of assessing duration and significance**

Impacts will be rated using the following methodology:

Nature of the potential impact		Description of the effect, and the affected aspect of the environment
Duration (time scale)	Short term	Up to 5 years
	Medium term	6 – 15 years
	Long term	More than 15 years
Extent (area)	Local	Confined to study area and its immediate surroundings
	Regional	Region (cadastral, catchment, topographic)
	National	Nationally (The country)
	International	Neighboring countries and the rest of the world.
Magnitude (Intensity)	Low	Site-specific and wider natural and/or social functions and processes are negligibly altered. ((A low intensity impact will not affect the natural, cultural, or social functions of the environment).
	Medium	Site-specific and wider natural and/or social functions and processes continue albeit in a modified way. (Medium scale impact will alter the different functions slightly).
	High	Site-specific and wider natural and/or social functions and processes are severely altered. (A High intensity impact will influence these functions to such an extent that it will temporarily or permanently cease to exist).
Probability	Improbable	Possibility of occurrence is very low. (Such an impact will have a very slight possibility to materialise, because of design or experience).
	Possible	There is a possibility that the impact will occur
	Probable	It is most likely that the impact will occur

Nature of the potential impact		Description of the effect, and the affected aspect of the environment
Significance	Definite	The impact will definitely occur
	Insignificant	Impact is negligible and will not have an influence on the decision regarding the proposed activity (No mitigation is necessary)
	Very Low	Impact is very small and should not have any meaningful influence on the decision regarding the proposed activity (No mitigation is necessary)
	Low	The impact may not have a meaningful influence on the decision regarding the proposed activity (No mitigation is necessary)
	Medium	The impact should influence the decision regarding the proposed activity (The project can only be carried through if certain mitigatory steps are taken)
	High	The impact will influence the decision regarding the proposed activity
	Very High	The proposed activity should only be approved under special circumstances
Reversibility	Low	There is little chance of correcting the adverse impact
	Medium	There is a moderate chance of correcting the adverse impact
	High	There is a high chance in correcting the adverse impact
Risk	Low	Assessing a risk involves an analysis of the consequences and likelihood of a hazard being realized. In decision-making, low-consequence / low-probability risks (green) are typically perceived as acceptable and therefore only require monitoring.
	Medium	Other risks (amber) may require structured risk assessment to better understand the features that contribute most to the risk. These features may be candidates for management
	High	High-consequence / high-probability risks (red) are perceived as unacceptable and a strategy is required to manage the risk.

Attributes associated with the alternatives will be assessed and is outlined below:

#### Geographical attributes

The Geographical attributes of an area relates to the characteristics of a particular region, area or place. It influences the determination of site alternatives as it relates to the location of a site in relation to relevant features in the area. A surveyor has been appointed to map the area and determine site levels.

#### Physical attributes

Physical attributes of an area relates to the processes and patterns in the natural environment. For the purpose of this assessment, the following processes and patterns have been investigated. Geology, soil, topography and landforms, climate and meteorology, surface water and ground

water. Various Specialists are involved in assessing different aspects including Civil Engineer, Electrical Engineer, Surveyor, Town Planner, Botanical Specialist, Wetland Specialist, SAHRA Specialist and the EAP.

#### **Biological attributes**

Biological attributes for the purpose of this study includes the distribution of species and ecosystems in geographic space and through geological time. Organisms and biological communities often vary in a regular fashion along geographic gradients of latitude, elevation, isolation and habitat area. The two main branches assessed will be:

Phytogeography is the branch of biogeography that studies the distribution of plants.

Zoogeography is the branch that studies distribution of animals. The Botanical Specialist will determine the sensitivity and distribution of flora and associated fauna, and the wetland specialist will ensure that the relevant aquatic ecosystems are assessed.

#### **Social attributes**

Social attributes is closely related to social theory in general and sociology in particular, dealing with the relation of social phenomena and its spatial components. EAP, Town Planner, Civil Engineer and SAHRA specialist.

#### **Economic attributes**

Economic attributes includes the location, distribution and spatial organization of economic activities and also takes into account social, cultural, and institutional factors in the spatial economy of the development. . EAP, Town Planner, Civil Engineer and SAHRA specialist.

#### **Heritage attributes**

The broad generic term Cultural Heritage Resources refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of paleontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction. SAHRA Specialist.

#### **Cultural attributes**

Cultural attributes relates to the specific characteristics such as language, religion, ethnic and racial identity, and cultural history & traditions of people. These attributes influences family life, education, economic and political structures, and, of course, business practices.

It should be noted that the above mentioned attributes do not occur in isolation and it is not uncommon for an identified impact to overlap with two or more of these attributes. Also note, not all risks require comprehensive and detailed assessment. Solid problem formulation should allow decision-makers to evaluate the extent of subsequent analysis required. The level of effort put into assessing each risk should be proportionate to its significance and priority in relation to other risks, as well as its complexity, by reference to the likely impacts. Consideration should be given to stakeholders' perceptions of the nature of the risk. SAHRA Specialist.

The inputs from Specialists, interested and affected parties, together with the knowledge of the EAP will be used to determine measures to avoid, mitigate and manage potential impacts. Inputs from I&APs will be considered for all the above in order to ensure a sustainable development.

## 12.6 Stages at which the competent authority will be consulted

- 1) The first consultation will be in the form of the application submission
- 2) A Draft Scoping report will be submitted to the Department on 19/08/2021
- 3) The final Scoping report will be submitted to the Department by upon receipt of the approval of the Draft Scoping Report.
- 4) Once the Final Scoping report has been accepted, a Draft EIA Report will be submitted to the Department.
- 5) 30 Days after this draft EIA Report has been submitted, the final EIA Report will be submitted to the Department.

## 12.7 Particulars of the public participation process that will be conducted during the environmental impact assessment process

Public and stakeholder involvement in the EIA process is widely recognised as being an *essential* component of the EIA process. The input and contribution added to the process, by public comment and involvement, leads to better and more acceptable decision-making. The involvement of interested parties, adjacent land owners, NGO bodies and others, can help to identify whether all impacts have been included and whether all risk groups have been identified.

The engagement process will provide stakeholders with the opportunity to raise their issues and concerns and to interact on a one-on-one basis with the project team.

Registered I&APs shall be informed of the approval or rejection of the scoping report, and will be encouraged to continue their active participation in the EIA process by staying involved in the process, and commenting on the scoping report approval conditions / requirements.

The PPP to be conducted during the EIA phase will entail the following:

- ❖ Update the existing stakeholder database, following the review of the draft and final scoping reports by registered IAP's and DEDEAT
- ❖ Announcement of the EIA phase of the project, which entails the following:
  - 1) Distribution of Letters, notices, the Draft and final EIAR to all registered I&APs via email, fax or post;
  - 2) Hosting Public Meetings (if necessary);
  - 3) Integration of comments into a Comments and Response Report;

## 12.8 Description of the tasks that will be undertaken as part of the environmental impact assessment process

Actions
1. Assessment Phase
1.1 Undertake assessment phase by assessing and evaluating potential impacts identified in the Scoping phase.
1.2 Review and manage specialist studies required.

1.3 Compile a draft Environmental Impact Report (EIR).
1.4 Compile a draft Environmental Management Plan for the Construction phase.
1.5 Compile an Information Sheet (summary of EIR) and distribute to identified I&APs
1.6 Distribute DEIR to I&APs
1.7 Allow the identified public to provide comment within a 30 day period on above report.
1.8 Address comments received and finalise EIR
1.9 Should the draft EIR require substantial changes, these changes will be incorporated into the final EIR and distributed.
1.10 Submit EIR to authorities for a final decision
1.11 Once the decision is issued, all I&Ps must be formally informed of the decision

## 12.9 Measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored

An EIA involves *prediction* and thus a certain degree of *uncertainty* is an integral part. There are two types of uncertainty associated with environmental impact assessments: those associated with the process and, those associated with predictions. With the former the uncertainty is whether the most important impacts have been identified and whether recommendations will be acted upon or ignored. For the latter, the uncertainty is in the accuracy of the findings. The main types of uncertainty and the ways in which they can be minimized are summarized as follows:

- ❖ **Uncertainty of prediction:** this is important at the data collection stage and the final certainty will only be resolved once implementation commences. Research can reduce the uncertainty;
- ❖ **Uncertainty of values:** this reflects the approach taken in the EIA process. Final certainty will be determined at the time decisions are made. Improved communications and extensive negotiations should reduce this uncertainty;
- ❖ **Uncertainty of related decision:** this affects the decision making element of the EIA process and final certainty will be determined by post evaluation. Improved coordination will reduce uncertainty.

The importance of *wide consultation* cannot be overemphasized in minimizing the risk of missing important impacts. The significance of impacts is subjective, but the value judgments required are best arrived at by consensus: public participation and consultation with a wide sector of the community will reduce uncertainty.

The accuracy of predictions is dependent on a variety of factors such as lack of data or lack of knowledge. Prediction capabilities are generally good in the physical and chemical sciences, moderate in ecological sciences and poor in social sciences.

The results of the EIA should indicate the level of uncertainty with the use of confidence limits and probability analyses wherever possible. Sensitivity analysis similar to that used in economic evaluation, could be used if adequate quantifiable data are available. A range of outcomes can be found by repeating predictions and adjusting key variables.



An EIA cannot give a precise picture of the future. The EIA enables uncertainty to be managed and, as such, is an aid to better decision making. (*S. Cliff, 2015, P92.*)

### 13. AFFIRMATION BY EAP

I Mr JP de Villiers

declare under oath that I:

- a. act as the independent environmental practitioner in this application ;
- b. do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed;
- c. do not have and will not have a vested interest in the proposed activity proceeding;
- d. have no, and will not engage in, conflicting interests in the undertaking of the activity;
- e. undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required;
- f. will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- g. will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- h. will keep a register of all interested and affected parties that participated in a public participation process; and
- i. will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.

  
\_\_\_\_\_  
Signature of the Environmental Assessment Practitioner:

AB ENVIRO CONSULT CC

\_\_\_\_\_  
Name of company:

18/08/2021

\_\_\_\_\_  
Date:

  
\_\_\_\_\_  
Signature of the Commissioner of Oaths:

\_\_\_\_\_  
Date

\_\_\_\_\_  
Designation

Official stamp:

**IZELLE BRITS**  
Kommissaris van Ede / Commissioner of Oaths  
Associate General Accountant (SA)  
An associate designation of the South African  
Institute of Chartered Accountants  
RETIEFSTRAAT 11 / 11 RETIEF STREET  
POTCHEFSTROOM 2531  
SAICA Reg No/Nr: 20001711