

BASIC ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF A HYDROPONICS TUNNEL FARMING IN MOLOTE CITY, NORTH WEST PROVINCE.

Draft Basic Assessment Report

November 2019

Prepared for:

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EXECUTIVE SUMMARY

Introduction and Background

Enviroworks (Pty) Ltd has been appointed as the Environmental Assessment Practitioners (EAPs) to assist LMC Food Group by conducting a Basic Assessment (BA) for their proposed project of the Hydroponic Tunnel Farming in Molote City, North West Province. The property is located on Plot 133 in Molote City, at the following coordinates: 26° 1'51.31"S; 27°14'27.37"E. The proposed project consists of two phases. The first phase will include the construction of 20 multispans hydroponic tunnels covering 0.7 hectares of the 20ha property. The second phase will be an extension of another multispans hydroponic tunnel system with a size of 0.7ha on the 20ha property, which will commence in the future. The 20 tunnels will have 2000 seedling trays (3m wide). A multispans hydroponic tunnel can be defined as a tunnel typically made from steel and covered in polythene, usually semi-circular in shape. Hydroponics is a process of growing plants in water with added nutrients, without soil. The tunnels will produce cucumber seedlings for sale to other farmers. The start-up includes 20 multispans hydroponics tunnels. The property was historically used for minor agricultural activities and it has not been used since then. The proposed hydroponic tunnel farming facility triggered the need for an Environmental Authorisation (EA) through a Basic Assessment (BA) Process. An area of 20 ha will be cleared to accommodate the proposed project.

The proposed project is a listed activity in terms of Sections 24(2) and 24(d) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) (as amended). The Environmental Impact Assessment (EIA) Regulations, 2017 promulgated in terms of Chapter 5 of the NEMA provide for the control of certain activities that are listed in Government Notice Regulations No. (GN R) No. R327, R325 and R324. Activities listed in these notices must comply with the regulatory requirements listed in GN R No. R326, which prohibits such activities until written authorisation is obtained from the Competent Authority. Such Environmental Authorisation, which may be granted subject to conditions, will only be considered once there has been compliance with the EIA regulations, 2017. GN R No. 326 sets out the procedure and documentation that need to be compiled with undertaking a Basic Assessment Report.

The objective of this report is to provide the project's Interested and Affected Parties (I&As), stakeholders, commenting authorities and the Competent Authority (CA), with a thorough project description and BA process description. The outcome of the processes is to create productive comment and input, based on all the information generated. The North West Department of Rural, Environment and Agricultural Development is the Competent Authority for this Basic Assessment (BA) process and the development needs to be

authorised by this Department.

This Draft Basic Assessment Report (DBAR) provides an assessment of both the benefits and potential negative impacts anticipated as a result of the proposed construction and operations of the hydroponics farming. Having properly considered the project, in the opinion of the Environmental Assessment Practitioner (EAP), the project does not pose a detrimental impact on the receiving environment and its inhabitants. The impacts that have been highlighted through the impact assessment can be mitigated significantly with the implementation of the Environmental Management Programme (EMP). The applicant should be bound to strict conditions to maintain compliance and responsible executions of the project.

The DBAR will be made available for comment, during the Public Participation Phase, and amended after the commenting period, to form the Final Basic Assessment Report (FBAR). The FBAR will, together with all relevant documentation in the Application Form and required information in the DBAR, be submitted to the North West Department of Rural, Environment and Agricultural Development (READ), for decision making. The FBAR will therefore be a conclusion of scientific specialist study's findings, public contribution via formal comment, and the drawing of conclusions by the EAP as the environmental specialist.



Project Description

LMC Food Group proposes a project of Hydroponics tunnel Farming in Molote City, North West Province. The proposed hydroponics project will consist of two phases. The project will start off with 20 multispan hydroponic tunnels covering 0.7 ha on a 20 ha property, while the second phase will comprise of another multispan tunnel system measuring at 0.7 ha on a 20ha property, in the future. The proposed project is located on a 20ha portion of Plot 133 where one(1) borehole will be used to pump and provide

approximately 35 000 litres per day in ensuring the water requirements in the Hydroponics system. The water will be used for watering the hydroponic plants and for domestic needs. The 20 tunnels will have 2000 seedling trays (3m wide) and will produce cucumber seedlings for sale to other farmers.

The following is the planned development proposed by LMC Food Group:

Phase 1

- Construction of 20 multispans measuring at 0.7 ha, (each tunnel measuring at 10.6 x30 m²);
- Construction of administration offices and Parking Bay (6m x 12m);
- Construction of security guard room, toilet & power box (2m x 3m);
- Construction of guard sleeping quarters and kitchen (15m x 6m);
- Construction of workshop for repairs (40m x 20m);
- Tractor Parking Shed (10m x 20m) ;
- Construction of Laundry and Shower (12m x 6m);
- Tank Floor (3m x 6m); and
- Construction of Laundry Room (12m x 4m);

Phase 2

The project will be expanded in the future by constructing another multispans tunnel system measuring at 0.7 hectares on a 20ha property. Please refer to phase one for the specifics.

Project Location

The site is situated off the R509, between Molote City and Mathopestad. It is situated about 1 km from Molote City and falls within Rustenburg Local Municipality, North West Province.

THE PROPOSED PROJECT OF THE HYDROPONICS FARMING, MOLOTE CITY, RUSTENBURG, NORTH WEST PROVINCE.



Locality Map
Molote City

Legend

EscomLines
sa_railway
<all other values>

CLASS

N
M
R
S
20 Ha Hydroponics Site
Farm Portion

Latitude: 26°1'51.73"S
Longitude: 27°14'27.10"E

DATUM: WGS 84
PROJECTION: GEOGRAPHIC
DATE: SEPT 19
SCALE: 1:30 000

Prepared by:



Prepared for:
LMC Food Group



Proposed operational activities

a) Water Use

The proposed water supply will be abstracted from the proposed borehole. 35000 litres per day will be abstracted from a borehole for the 7000 square meter tunnel at 5 liters per square meter.

b) Energy Efficiency

Electricity will be obtained from the existing Eskom grids.

c) Climate Control installations and artificial lights.

There will be no climate control installed but the roof will be retractable. The roof will be opened to allow sunlight into the tunnel system.

d) pumps for circulating/distributing water and nutrients to seedlings

The drip irrigation system will be used. Water will be extracted from the borehole and a pump will be installed.

e) Manure

Sheep & cattle manure will be used as nutrients to the seedlings. Manure will be stored off site in the village at the cattle & sheep kraal.

Legislative Context

The proposed project constitutes the following listed activities in terms of the NEMA:

Government Notice 327 of 2017: Listing Notice 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for-

- (i) the undertaking of a linear activity; or
- (ii) Maintenance purposes undertaken in accordance with a maintenance management plan

Government Notice 324 of 2017: Listing Notice 3 of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

Activity 4: The development of a road wider than 4 metres with a reserve less than 13, 5 metres.

North West:

(i.v)Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;

Government Notice 324 of 2017: Listing Notice 3 of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

Activity 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

North West:

- i. World Heritage Sites; core of biosphere reserve; or sites or areas identified in terms of an international convention;
- ii. A protected area including municipal or provincial nature reserves as contemplated by NEMPAA or other legislation;
- iii. All Heritage Sites proclaimed in terms of National Heritage Resources Act, 1999 (Act No. 25 of 1999);
- iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;
- v. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; or
- vi. Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.

Report structure

This Report is set out as followed:

- **Section A:** Activity Information provides an overview of the development proposal and listed activities which are triggered in terms of listing notice GN R. 324; of the EIA Regulations, 07 April 2017.
- **Section B:** Property Description provides detail on the affected landscape in its present state. A range of aspects relating to the biophysical (e.g. geology, soil surface and sub-surface water and biodiversity), socio-economic, historic and cultural character of the immediate site and surrounding areas are described herein, whilst applicable legislation, policy and guidelines considered are recognised.
- **Section C:** Impact Assessment describes how the proposed development may impact on the geographical and physical, biodiversity, socio-economic and historical and cultural aspects of the receiving environment. Resource uses of the proposed development phases, attributed to waste and emissions, water use, power supply and energy efficiency are further discussed.
- **Section D:** Public Participation describes the consultation component of this study between the EAP and Interested or Affected Parties (I&AP's) and organs of state. Regulatory requirements of this

process are discussed, with a summary of consultation made with state departments and comments and response given. Comment periods will be afforded to parties, with an initial registration period provided to parties.

- **Section E:** Recommendations of Practitioner provides, based on such findings as various site surveys, impact assessment, investigation of alternatives and the review of strategic policy to consider the needs and desirability, the outgoing opinion of the EAP is detailed. Any noteworthy recommendations emanating from the study are described here.
- **Section F:** Affirmation by EAP information provided is correct and relevant to the activity/ project and that; the information was made available to interested and affected parties for their comments. All specialist (s) reports are relevant for the competent authority to make informed decision.

Public Participation Process

A comprehensive Public Participation will be undertaken to engage with stakeholders and interested and affected parties on the development proposal. I&AP's will be informed of the Basic Assessment Process through an advertisement in two (2) newspapers (1 local and 1 provincial) and poster notices will be erected at strategic locations. The surrounding landowners will be informed of the proposed project by means of the distribution of comment forms and the Basic Assessment Report (BAR), as well as relevant Organs of State.

This BAR will be made available for a thirty (30) day comment period from **14 November 2019** to **13 December 2019**. The BAR will also be made available on Enviroworks website (www.enviroworks.co.za) and a link to the Enviroworks website will be send via email to all relevant Stakeholders and Organs of State.

Specialist Findings

Ecological Impact Assessment

A site visit took place on the 08th of March 2018. A walkthrough was done, assessing environmental conditions and pictures were taken of the environment and plant species. The site visits took place in summer, when most species were in flower. The weather conditions were accommodating, where clear visibility facilitated the inspection of the facility and surrounding vegetation.

The vegetation type is endangered. Only roughly 1% of the vegetation type is statutory conserved and about half is transformed mostly by cultivation, plantations, urbanisation or dam-building (Mucina and Rutherford, 2006). Poor management and degradation threatens the remainder of the grassland. The area is classified as

a Critical Biodiversity Area (CBA1). CBA1 area should be maintained in a natural or near-natural state that maximizes the retention of biodiversity pattern and ecological process. These are areas with high irreplaceability or low flexibility in terms of meeting biodiversity pattern targets. If the biodiversity features targeted in these areas are lost then targets will not be met.

In this case the areas do show signs of mismanagement and disturbance. The northern portion of the remaining vegetation of the grassland seem to show signs of overgrazing as can be seen from the presence of the herb *Justicia anagalloides*, *Seripium plumosum* (Slangbos) and *Helichrysum rugulosom*.

Heritage Impact Assessment

Investigation of agricultural land immediately surrounding the site suggests that potential impact on *in situ* Stone Age archaeological material, graves, rock engravings, prehistoric structures or historically significant building structures older than 60 years within the study area was most probably insignificant.

Impact Statement & Recommendation

Although bedrock sediments in within the proposed study area consists of potentially fossil-bearing, Transvaal Supergroup sedimentary strata (stromatolites) of the early Proterozoic Timeball Hill Formation (Pretoria Group), the site is capped by superficial (Quaternary) deposits of low to very low palaeontological sensitivity, the latter being that the impact area is not situated within or near pan, well-developed alluvial or spring deposits (considered to be potentially fossiliferous in the region). Palaeontologically sensitive cave breccias are not anticipated in the study area, as opposed to the more cave-rich karst environment provided by the underlying Malmani Subgroup dolomites outcropping to the south of the study area. In accordance with the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) there is no above-ground evidence to suggest that building structures older than 60 years or material of cultural significance or archaeological sites were affected within the demarcated area. The terrain in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C GP.C). As far as the archaeological and palaeontological heritage is concerned, the proposed development may proceed with no additional heritage assessments necessary, provided that all excavation activities are restricted to within the boundaries of the development footprint.

- Personnel are not allowed to create any fires on site;
- It is important that all mitigation measures within the EMP are strictly adhere to;

- Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately and Heritage North West must be notified without delay;
- Prior to construction a walkthrough investigation to identify, map and translocate all protected plant species must be conducted;
- Translocation of indigenous species should not be done without permits from relevant Competent Authorities;
- Alien vegetation eradication program should be developed and implemented for the site to remove alien vegetation during all operational phases;
- Follow-up clearing and monitoring should be done to detect any new invasive species establishment and spread during operation and decommissioning. It is important that monitoring and control operations should extend into the surrounding natural grassland;
- Alien plant material removed during construction and eradication efforts should be contained and disposed of properly to limit accidental spread; and
- Future expansion and construction activities should be limited to the smallest possible area.

BASIC ASSESSMENT CONTENT CHECKLIST

A Basic Assessment Report must contain the information that is necessary for the Competent Authority to consider and come to a decision on the Application, and must include –

Content Requirements of a Basic Assessment Process	Section in the Report
(a) details of – (i) the EAP who prepared the report, and (ii) the expertise of the EAP, including a curriculum vitae;	Curriculum Vitae of the EAP
(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, the coordinates of the boundary of the property or properties;	Appendix J: Additional Information
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;	Appendix C: Facility Illustrations
(d) a description of the scope of the proposed activity, including – (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure;	Section A: Activity Information
(e) a description of the policy and legislative context within which the development is proposed including – (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools framework, and instruments;	Section 1.11
(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;	Section 1.10
(g) a motivation for the preferred site, activity and technology alternative;	Section 1.2
(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of Regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts –	Section A: Activity Information

<p>(aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; (vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risk associated with the alternatives; (vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (viii) the possible mitigation measures that could be applied and level of residual risk; (ix) the outcome of the site selection matrix; (x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;</p>	
<p>(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including – (i) a description of all environmental issues and risk that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;</p>	Section D: Impact Assessment
<p>(j) an assessment of each identified potentially significant impact and risk, including- (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impacts and risk occurring; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;</p>	Section D: Impact Assessment
<p>(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulation and an indication as to how these findings and recommendations have been included in the final report;</p>	Section D: Impact Assessment
<p>(l) an environmental impact statement which contains – (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;</p>	Section D: Impact Assessment

(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;	Section D: Impact Assessment
(n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Section E: Recommendations of the Practitioner
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section D: Point 4
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section E: Recommendations of the Practitioner
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A
(r) an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Declaration of the EAP.
(s) where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
(t) any specific information that may be required by the competent authority; and	Appendix J: Additional Information
(u) Any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

CURRICULUM VITAE OF THE EAP



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Thandeka Moabi

Relevant Qualifications

B.A Geography and Environmental Management: University of the Free State (2016)

Environmental Impact Assessment for Practitioners: North West University (Centre for Environmental Management) (2018)

Work Experience

August 2018 – Present Junior Environmental Specialist at Envioworks

Key Project Experience

Basic Assessment Experience

- Hydroponics Project, LMC Farms, North West Province
- The periodic maintenance of tr1/2, tr1/3, tr44/1, tr88/1, mr401 and mr402, near Uniondale, Western Cape Province
- Willie Bheurraan Composting Facility, Gauteng Province

Environmental Control Officer (ECO)

- Vista Park ECO Inspections, Bloemfontein

Experience in Permits and Licencing

- Water Use License for BloemSkou, Bloemfontein, Free State.
- Water Use License for LMC Farms, Hydroponics Project, Molote City, North West.
- Water Use License for ClinVet International pty (Ltd)

Environmental Management Plans

- Lafarge Olive Hill Quarry EMP Review

ACRONYMS AND ABBREVIATIONS

BA	–	Basic Assessment
BAR	–	Basic Assessment Report
CBA	–	Critical Biodiversity Area
DEA	–	Department of Environmental Affairs
EAP	–	Environmental Assessment Practitioner
ECO	–	Environmental Compliance Officer
EIA	–	Environmental Impact Assessment
EMF	–	Environmental Management Framework
EMPr	–	Environmental Management Programme
ESA	–	Ecological Support Area
GN R	–	Government Notice Regulation
I&AP	–	Interested & Affected Party
IDP	–	Integrated Development Plan
LED	–	Local Economic Development
LM	–	Local Municipality
NDT	–	National Department of Tourism
NEM: PAA	–	National Environmental Management: Protected Areas Act
NEM: WA	–	National Environmental Management: Waste Act
NEMA	–	National Environmental Management Act
NHRA	–	National Heritage Resources Agency
NWA	–	National Water Act
PSDF	–	Provincial Spatial Development Framework
SAHRA	–	South African Heritage Resources Agency
SANRAL	–	South African National Roads Agency Limited
SAPS	-	South African Police Service
SDF	–	Spatial Development Framework

Contents

EXECUTIVE SUMMARY	ii
Introduction and Background	ii
Report structure.....	vii
Specialist Findings	Error! Bookmark not defined.
BASIC ASSESSMENT CONTENT CHECKLIST	xi
CURRICULUM VITAE OF THE EAP	xiv
ACRONYMS AND ABBREVIATIONS	xv
SECTION A: ACTIVITY INFORMATION	1
PROJECT DESCRIPTION	1
Describe the project in association with the listed activities applied for	1
FEASIBLE AND REASONABLE ALTERNATIVES	3
b) Lay-out alternatives.....	5
PHYSICAL SIZE OF THE ACTIVITY	7
a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):	7
2. LOCALITY MAP	8
3. LAYOUT/ROUTE PLAN	8
4. SENSITIVITY MAP.....	9
5. SITE PHOTOGRAPHS	9
6. FACILITY ILLUSTRATION.....	9
7. ACTIVITY MOTIVATION	9
8. Applicable legislation, policies and/or guidelines	17
9. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT	19
10. WATER USE.....	21
11. ENERGY EFFICIENCY	21
SECTION B: SITE/AREA/PROPERTY DESCRIPTION	22
1. GRADIENT OF THE SITE	22
2. Location in landscape	22
3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE	23
4. GROUND COVER	23
5. SURFACE WATER.....	23
6. Land use character of surrounding area	24
7. Biodiversity	25
8. Cultural/Historical Features	28
1. SOCIO-ECONOMIC CHARACTER.....	28
2. SPECIALIST(S) CONSULTATION	31
Section C: IMPACT ASSESSMENT	32
1. Impacts that may result from the planning and design, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE phaseS AS WELL AS PROPOSED MANAGEMENT OF identified IMPACTS AND PROPOSED mitigation measures	35
2. Environmental impact statement.....	59
SECTION D: PUBLIC PARTICIPATION	61
1. ADVERTISEMENT AND NOTICE	61

2. DETERMINATION OF APPROPRIATE MEASURES61
3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES.....61
4. COMMENTS AND RESPONSE REPORT62
5. AUTHORITY PARTICIPATION62
6. CONSULTATION WITH OTHER STAKEHOLDERS62
SECTION E. RECOMMENDATION OF PRACTITIONER.....63
SECTION F: AFFIRMATION BY EAP65



read

Department:
**Rural, Environment and Agricultural
Development**
North West Provincial Government
REPUBLIC OF SOUTH AFRICA



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(For official use only)

Provincial Reference Number:
NEAS Ref Number:
Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications.
2. This report format is current as of **December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. The use of "not applicable" in the report must be done with circumspection. An incomplete report or that does not meet the requirements in terms of Regulation 19 of the NEMA EIA Regulations, 2014, will be rejected to be revised and be resubmitted.
6. The report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The signature of the Environmental Assessment Practitioner (EAP) on the report must be an original.
9. The report must be compiled by an independent EAP.
10. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
11. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
12. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
13. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
14. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority

SECTION A: ACTIVITY INFORMATION

PROJECT DESCRIPTION

Describe the project in association with the listed activities applied for

Project Description

LMC Food Group proposes a project of Hydroponics tunnel Farming in Molote City, North West Province. The proposed hydroponics project will consist of two phases. The project will start off with 20 multispans hydroponic tunnels covering 0.7 ha on a 20 ha property, while the second phase will comprise of another multispans tunnel system measuring at 0.7 ha on a 20ha property, in the future. The proposed project is located on a 20ha portion of Plot 133 where one(1) borehole will be used to pump and provide approximately 35 000 litres per day in ensuring the water requirements in the Hydroponics system. The water will be used for watering the hydroponic plants and for domestic needs. The 20 tunnels will have 2000 seedling trays (3m wide) and will produce beetroot, cabbage and spinach seedlings for sale to other farmers.

The following is the planned development proposed by LMC Food Group:

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- Construction of 20 multispans tunnels measuring at 0.7 ha, (each tunnel measuring at 10.6 x30 m²);
- Construction of administration offices and Parking Bay (6m x 12m);
- Construction of security guard room, toilet & power box (2m x 3m);
- Construction of guard sleeping quarters and kitchen (15m x 6m);
- Construction of workshop for repairs (40m x 20m);
- Tractor Parking Shed (10m x 20m) ;
- Construction of Laundry and Shower (12m x 6m);
- Tank Floor (3m x 6m); and
- Construction of Laundry Room (12m x 4m);

Phase 2

The project will be expanded in the future by constructing another multispans tunnel system measuring at 0.7 hectares on a 20ha property. Please refer to phase one for the specifics.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN R.983, 984 and 985	Description of project activity
<p>GNR327 (Listing Notice 1) Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation,</p>	<p>The project is a multispan hydroponic tunnel measuring 0.7ha. The multispan tunnel will produce beetroot, cabbage and spinach seedlings for sale to other farmers.</p> <p>Then expand with the 0.7 hectare Cravo tunnel in the second phase.</p>
<p>GNR324 (Listing Notice 3) Activity 4: The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p> <p>North West:</p> <p>(i.v)Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;</p>	<p>The access road will be on the gravel road leading into the village off the R509 Koster tarred road. The entrance has to be 5 meters wide because the equipment such as tractors will be kept on site. Trucks will have access to the facility.</p>
<p>GNR324 (Listing Notice 3) Activity 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>North West:</p> <p>i. World Heritage Sites; core of biosphere reserve; or sites or areas identified in terms of an international convention;</p> <p>ii. A protected area including municipal or provincial nature reserves as contemplated by NEMPAA or other legislation;</p> <p>iii. All Heritage Sites proclaimed in terms of</p>	<p>There will be a clearance of vegetation of an area more than 300 square metres on the proposed development site.</p>

National Heritage Resources Act, 1999 (Act No. 25 of 1999); iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority; v. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; or vi. Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.	
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c) Property description/physical address

Province	North West Province
District Municipality	Bojanala District Municipality
Local Municipality	Rustenburg Local Municipality
Ward Number(s)	36
Farm name and number	210
Portion number	1
21 digit Surveyor General Code	TOIQ0000000002100001

Where a large number of properties are involved (e.g. linear activities) please attach a full list to this application including the same information as indicated above

FEASIBLE AND REASONABLE ALTERNATIVES

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by EIA Regulation, 2014 Appendix 1(h). Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant

in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds using the Hartebeeshoek94 WGS84 co-ordinate system.

a) Site alternatives

List alternative sites, if applicable.

Site Alternatives	Description
Alternative Site 1 (preferred or only site alternative)	LMC Farms proposes a project of a multispan hydroponic tunnel measuring 0.7 hectares. The project will start off with 20 hydroponic tunnels, The project will consist of the following preliminary activities: -Construction of entrance road (5 metres wide) -Construction of 20 multispan tunnels measuring at 0.7 ha, each house/tunnel measuring 10 x30 m ²
Alternative Site 2	N/A
Alternative Site 3	N/A

Site Co-ordinates

Latitude (S):

Longitude (E):

Alternative S1 (preferred or only site alternative)

26°	1'	59.34"	27°	14'	24.59"
	'	"	°	'	"
°N/A	'	"	°	'	"

Alternative S2 (if any)

Alternative S3 (if any)

In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

°N/A	'	"	°	'	"
°N/A	'	"	°	'	"
°N/A	'	"	°	'	"

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

N/A	'	"	°	'	"
°N/A	'	"	°	'	"
°N/A	'	"	°	'	"

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

°N/A	'	"	°	'	"
°N/A	'	"	°	'	"
°N/A	'	"	°	'	"

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 metres along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

b) Lay-out alternatives

Alternatives	Description
Alternative 1 (preferred or only alternative)	Corner 1: 26° 1'59.86"S ; 27°14'22.05"E Corner2: 26° 1'56.89"S ; 27°14'24.64"E Corner3: 26° 1'58.70"S ; 27°14'27.35"E Corner4: 26° 2'1.53"S ; 27°14'24.65"E
Alternative 2	N/A
Alternative 3	N/A

c) Technology alternatives

Alternatives	Description
Alternative 1 (preferred or only alternative)	No Technology Alternatives have been investigated.
Alternative 2	N/A
Alternative 3	N/A

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternatives	Description
Alternative 1 (preferred or only alternative)	No other feasible or reasonable alternatives have been investigated.
Alternative 2	N/A
Alternative 3	N/A

e) No-go alternative

The no-go option for the proposed development will result in farmers using the old traditional method of seedling, which is time consuming and uses high amounts of water, Etc.

The advantages of the Hydroponics Farming:

- Hydroponics uses less nutrient material to feed their plants; these exist within a self-contained environment that can easily control the waste products. This is much better, as prevents excessive use of fertilizers unlike in the traditional farming where more fertilizers are used, and end up flowing into the rivers and spoiling the water to be used by the humans and the animals.
- Hydroponics calls for less amount of water and nourishment; in the hydroponics system less water is used since the required water is supplied in fixed proportions and a controlled environment, furthermore, water is recycled in this system. This is very advantageous compared to irrigation where much water is wasted without recycling or in the traditional farming methods. This also reduces the farmers water cost hence lowering the production costs.
- No soil is needed in this system; gardening is done without any soil and it only uses 10 percent of the water used on the ordinary planting. Furthermore, the plants grown on this method have a higher growth rate compared to the normal planting. The faster growth is contributed by a highly controlled environment with the availability of more oxygen, water and nourishing substances for the plants.
- Hydroponics can be produced at any season since they grow into their own controlled environment which is controlled and protected from predators like plant eating animals.
- Less amount of time and work is required in hydroponics gardening; the amount of work needed is very little due to the absence of the weeds that would require time to pluck them out. This method is time saving since no weeds are present only some few minutes are needed to check the nutrient levels and the harvesting processes.

Therefore not having this Hydroponics Project will deny farmers an opportunity of a less costing method of crop planting. Job opportunities for the unemployed will also be deprived of.

f) Please motivate for preferred site, activity and technology alternative

The preferred site of the proposed development is the only suitable alternative. No other alternatives were investigated.

Paragraphs 3 – 13 below should be completed for each alternative.

PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Size of the activity:

Alternative A1¹ (preferred activity alternative)

200 000 m ²
m ²
N/A m ²

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

Alternative:

Length of the activity:

Alternative A1 (preferred activity alternative)

m
N/A m
N/A m

Alternative A2 (if any)

Alternative A3 (if any)

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Size of the site/servitude:

Alternative A1 (preferred activity alternative)

200 000 m ²
m ²
m ²

Alternative A2 (if any)

Alternative A3 (if any)

1. SITE ACCESS

Does ready access to the site exist?

	NO
	X
	5 m

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

The access road will be on the gravel road leading into the village off the R509 Koster tarred road. The entrance has to be 5 meters wide because the equipment such as tractors will be kept on site. Trucks will have access to the facility.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

2. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- Closest town(s);
- the accurate indication of the site in relation to closest protected environments or national parks (i.e. within 2.5 km)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds using the Hartebeeshoek94 WGS84 co-ordinate system)

3. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix B to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

4. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by Department of Water and Sanitation);
- ridges;
- for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas and ecological support area.
- protected areas (e.g Magaliesberg Protected Environment, Pilanesberg National Park etc.)

The sensitivity map must also cover areas within 100m of the site and must be part of Appendix B.

5. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix C to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

6. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix D for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

7. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	YES X	
The proposed development/project is situated in an already agricultural site according to the municipality spatial plans.		

2. Will the activity be in line with the following?		
(a) Provincial Spatial Development Framework (PSDF)	YES X	
According to the North West PSDF agriculture is a key driver of provincial economy and continues to employ a substantial number of people in the province. The North West Province is one of the country's major maize farming areas, producing about one third of the country's maize crop. Further, the Agriculture sector of the North West Province accounts for about 6.8% of employment in the sector. Agriculture thus forms an integral part of the North West provinces' economy.		
(b) Urban edge / Edge of Built environment for the area		NO
The proposed development/project is not located within the urban edge.		
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES X	
According to Rustenburg Local Municipality IDP some of the highlighted objectives are as follows: - To promote, attract and retain investors through maximising private sector investment and facilitate forging of partnerships and creating conditions conducive to entrepreneurial activity and investment. - To promote a diverse economic development and job creation for local residents by the development of entrepreneurial skills in the management of SMME's, tourism and capital projects undertaken within the municipal area.		
(d) Approved Structure Plan of the Municipality	YES X	
The proposed development is situated in an agricultural site as marked of Municipality Structure Plan.		

<p>(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</p>	<p>YES X</p>	
<p>The Rustenburg Environmental Management Framework defined four Environmental Management Zones:</p> <ul style="list-style-type: none"> • The Conservation Management Zone • Aquatic Systems Management Zone • Agricultural Management Zone • Built up Management Zone <p>According to the Rustenburg Environmental Management Framework, the Agricultural Management Zone is mainly characterised by commercial farming that ranges from citrus to vegetable farming. Furthermore, the rural part of Rustenburg Local Municipality also practices subsistence farming of maize, sunflower and vegetables. Historically, agriculture used to be the main RLM GDP contributor, however, due to trade-offs to other activities such as mining and development. Agriculture has turned into a less preferred source of income resulting in loss of land of agricultural potential value. The agricultural management zone represents agricultural holding land that must be saved for current and future agricultural activities. Therefore the proposed project is line with the Rustenburg Environmental Management Framework.</p>		
<p>(f) Any other Plans (e.g. Guide Plan)</p>		<p>NO X</p>
<p>No other municipal or provincial plans associated with this activity.</p>		

<p>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</p>	<p>YES X</p>	
<p>It is imperative for to align IDP with the National Development Plan (NDP). The NDP's priorities of vision 2030 highlights the promotion of social and economic development. Section 26 of the Municipal Systems Act (no 32 of 2000) articulates that one of the key components of the IDP is a "Spatial Development Framework which must include the provision of basic guidelines for a land use management system for the municipality". In addition, the IDP comprises five phases outlined as follows; Analysis, Strategies, Projects, Integration and Approval. The projects phase, this phase is a formulation of projects proposal and programme to ensure that the objectives and targets of the project deliverables are aligned, and remain aligned with the outcomes of the project within the municipality.</p>		
<p>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</p>	<p>YES</p>	
<p>The proposed development is a need within the local community as it will boost the local economic development of the municipality by employing the local residents and also contributing to the provincial GDP.</p> <p>According to Rustenburg Local Municipality IDP "In 2016, there were a total number of 67 100 people unemployed in Rustenburg, which is an increase of 22 800 from 44 300 in 2006. The total number of unemployed people within Rustenburg constitutes 38.81% of the total number of unemployed people in Bojanala Platinum District Municipality. The Rustenburg Local Municipality experienced an average annual increase of 4.24% in the number of unemployed people, which is worse than that of the Bojanala Platinum District Municipality which had an average annual increase in unemployment of 2.62%." Therefore the proposed project/development will help fight the unemployment rate in the Municipality.</p>		

5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix E.)	YES X	
The activity is an addition to existing agricultural activities within the surrounding farms. This farm is not owned by municipality, therefore there is no need for confirmation from the municipality.		
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)		NO X
This is not a municipality project; therefore no implication is expected on the municipality planning.		
7. Is this project part of a national programme to address an issue of national concern or importance?	YES X	
Though this is not a government project, it does address some issues as highlighted in the IDP of Rustenburg Local Municipality such as improving the socio economic of the municipality. Moreover NDP views agriculture as having the potential to create close to 1 million new jobs by 2030, an important part to the overall employment target. In other words the proposed project will definitely increase the employment capacity of the area and contribute to the national GDP as well.		
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES X	
The activity is an additional of the currently agricultural activities already in place around the area. Therefore activity is in line with the existing land use within the area, the location factors do favour the land use associated with the activity.		
9. Is the development the best practicable environmental option for this land/site?	YES X	
The development area is already deemed a disturbed area due to the existing chicken houses and other agricultural activities. No further environmental degradation is foreseen. The municipality is known for its diversified economy: agriculture, mining and tourism are the dominant sectors.		

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES X	
<p>The benefits of the proposed development will include the employment opportunities to the local residents residing near the Hydroponics Farm. Hydroponics calls for less amount of water and nourishment; in the hydroponics system less water is used since the required water is supplied in fixed proportions and a controlled environment, furthermore, water is recycled in this system. This is very advantageous compared to irrigation where much water is wasted without recycling or in the traditional farming methods. This also reduces the farmers water cost hence lowering the production costs.</p>		
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES X	
<p>The proposed activity already falls within the agricultural area thus it is an addition to other activities within the agricultural site.</p>		
12. Will any person's rights be negatively affected by the proposed activity/ies?		NO X
<p>No one's rights will be negative affected by the proposed project/development.</p>		
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		NO X
<p>The proposed activity is outside the urban edge and will definitely fit into the rural/ farming of the area. There will not be any negative impact on the rural landscaping of the area and the area is already used for agricultural activities.</p>		
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES X	
<p>According to the 17 Strategic Integrated Projects, the proposed project will contribute.</p> <p>SIP4: Unlocking the economic opportunities in North West</p> <ul style="list-style-type: none"> • Acceleration of investments in road, rail, bulk water, water treatment and transmission infrastructure. • Enabling reliable supply and basic service delivery. • Facilitate development of mining, agricultural activities and tourism opportunities. • Open up beneficiation opportunities in North West province. <p>SIP11: Agri-logistics and rural infrastructure</p> <p>Improve investment in agricultural and rural infrastructure that supports expansion of production and employment, small-scale farming and rural development,</p>		

15. What will the benefits be to society in general and to the local communities?	Please explain
<p>The proposed project will bring about 30 job opportunities to the local community and will also contribute to the GDP. Further, the proposed development will be of benefit to the other farmers as it is very advantageous compared to irrigation where much water is wasted without recycling or in the traditional farming methods. This also reduces the farmers water cost hence lowering the production costs.</p>	
16. Any other need and desirability considerations related to the proposed activity?	Please explain
<p>The Project will provide substantial economic benefits to local community members through direct employment. The project will form part of a job creation program within Rustenburg Local Municipality, combating the high rate of unemployment within the municipality and also contribute to transferring technical skills within unemployed youth.</p>	

17. How does the project fit into the National Development Plan for 2030?	Please explain
<p>According to the National Development Plan Proposals to increase employment and growth include the following: Raise exports, focusing on those areas where South Africa already has the endowments and comparative advantage, such as mining, construction, mid-skill manufacturing, agriculture and agro-processing, tourism and business services; and ensuring food security and the empowerment of farm workers, and promote industries such as agro-processing, tourism, fisheries and small enterprises in rural areas where potential exists. The proposed project is in line with the National Development Plan. The chosen development priorities with which the Province intends to align to the National Development Plan (NDP) are the following:</p> <p>Provincial Priority Area 1: Economy and Employment</p> <p>The provincial economy needs to become more productive, more competitive and more diversified. Prioritised sectors are identified as such for their potential to encourage or drive growth and or for their ability to create employment. The sectors identified include:</p> <ul style="list-style-type: none"> • Agriculture • Mining • Construction and infrastructure • Specific manufacturing sub-sectors with special reference to renewable energy manufacturing • Tourism (as part of the Trade, Transport and Finance sectors) • Overarching strategic priorities: Small, Medium and Micro-sized Enterprises (SMME) development and financial sector inclusion and development (SMMEs are located in all sectors of the economy). <p>Therefore the proposed project will contribute to the provincial economy, and will also enhance job opportunities within the province.</p>	
<p>18. Please describe how the general objectives of Integrated Environmental Management as set out in Section 23 of NEMA as amended have been taken into account.</p>	
<p>Through the undertaking of a Basic Assessment Process by a competent EAP, informed by guidelines, the consideration of impacts and alternatives (advantages and disadvantages coupled thereto) has been made. Moreover, the conducting of public participation and specialist investigations form part of the process, whilst mitigation measures and the need and desirability of the proposed project were interrogated. This ensured that all provisions of the Act were considered and as such Integrated Environmental Management were accounted for.</p>	

19. Please describe how the principles of environmental management as set out in Section 2 of NEMA as amended have been taken into account.

Through the undertaking of a Basic Assessment Process by a competent EAP, informed by guidelines, the consideration of impacts and alternatives (advantages and disadvantages coupled thereto) has been made. Moreover, the conducting of a public participation process and specialist investigations formed part of this basic assessment process, whilst mitigation measures and the needs and desirability of the proposed project were interrogated. This ensured that all provisions of the Act were considered and as such integrated environmental management were accounted for as follow:

(2) Environmental Management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural heritage and social interests equitably.

The goal of this BAR is to identify and mitigate potential socio-economic impacts in order to meet the terms of Section 24 of the Constitution.

(3) Development must be socially, environmentally and economically sustainable.

The overall goal of this BAR is to predict, identify and manage potential positive and negative impacts in the socio-economic, cultural-heritage and biophysical environments in order to meet the needs of present generations without compromising the needs of future generations which will give effect to sustainable development.

(4)(a) Sustainable development requires the consideration of all relevant factors including the following:

8. Applicable legislation, policies and/or guidelines

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act, 1998 (Act 107 of 1998)	The proposed project triggers listed activities and is therefore subjected to an Environmental Authorisation	National Department of Environmental Affairs	1998
National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended and the Environmental Impact	GN R. 326 provides all requirements that need to be incorporated in the BAR, PPP and EMP.	National Department of Environmental Affairs.	2017

Assessment Regulations, 2017 published in Government Notice R. 326 of 07 April 2017			
Management Act, 1998 (Act No. 107 of 1998) as amended and the Environmental Impact Assessment Regulations, 2017 published in Government Notice R. 327, 325 & 324	The proposed project triggers listed activities in GN R. 327, 325 & 324.	National Department of Environmental Affairs	2017
Public Participation Guidelines, 2005.	Provides Guidelines to EAP's to ensure compliance with GN R. 326.	Department of Environmental Affairs and Development Planning	2005
Guidelines for Involving Specialists in the EIA Process	These guidelines help EAP's how to identify when to make use of Specialists in the EIA Process.	Department of Environmental Affairs and Development Planning	2005
Threatened Ecosystems in South Africa: Descriptions and Maps, May 2009	Description of Ecosystems	Department of Environmental Affairs.	2009
Section 38(1) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)	Section 38(1) of the heritage act.	Heritage Western Cape (Head office)	1999
South African National Biodiversity Institute Geographical Information Systems	Shapefiles used for the identification of Critical Biodiversity Areas.	Department of Environmental Affairs	-
Rustenburg Local Municipality Spatial Development Framework.	The proposed project falls within the jurisdiction of the Rustenburg Local Municipality.	Rustenburg Local Municipality	

North West Spatial Development Framework	The proposed project is situated within the North West Province	Provincial Government	
South African National Development Plan for 2030	The proposed project is situated within South Africa	National Planning Commission	2030

9. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase? YES X

If YES, what estimated quantity will be produced per month? m³

How will the construction solid waste be disposed of (describe)?
 Waste generated during construction and operational phase will be disposed at a registered landfill site. Waste that is recyclable will be recycled.

Where will the construction solid waste be disposed of (describe)?

Registered landfill site

Will the activity produce solid waste during its operational phase? NO X

If YES, what estimated quantity will be produced per month? N/A

How will the solid waste be disposed of (describe)? N/A

No waste will be produced during the operational phase of the activity.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

No waste will be produced during the operational phase of the activity.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM: WA? NO X

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM: WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility? NO X

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM: WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

	NO X
--	------

If YES, what estimated quantity will be produced per month?

N/A

Will the activity produce any effluent that will be treated and/or disposed of on site?

	NO X
--	------

If YES, describe the type of effluent and the disposal mechanism/method

N/A

Will the activity produce effluent that will be treated and/or disposed of at another facility?

	NO X
--	------

If YES, provide the particulars of the facility:

Facility name:		
Contact person:		
Postal address:		
Postal code:		
Telephone:	Cell:	
E-mail:	Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

N/A

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

	NO X
--	------

If YES, is it controlled by any legislation of any sphere of government?

	NO X
--	------

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

The activity will not release any emissions into the atmosphere.
--

d) Waste Licence/Registration

Will any aspect of the activity produce waste that will require a waste licence/registration in terms of the NEM: WA?

	NO X
--	------

If YES, please submit evidence that an application for a waste licence/registration has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?

YES X	
-------	--

If YES, is it controlled by any legislation of any sphere of government?

	NO X
--	------

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the noise in terms of type and level:

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Noise will be generated during the construction phase due to the following:

- The establishment of a site camp;
- Movement of construction vehicles on site;
- Presence of construction personnel working on site; and,

Delivery of construction material

10. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box (es):

Municipal	Water board	Groundwater X	River, stream, dam or lake	Other	The activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

1 050 000
litres

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water and Sanitation?

YES
X

If YES, please provide proof that the application has been submitted to the Department of Water and Sanitation.

11. ENERGY EFFICIENCY

Describe the design measures, if any that have been taken to ensure that the activity is energy efficient:

The proposed project will not use energy in the operational phase. If any, the power source will be provided by Eskom.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A

Has a specialist been consulted to assist with the completion of this section?
If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix F.

YES X

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, as it appears on the Site Plan.
- Paragraphs 1 - 6 below must be completed for each alternative.

Current land-use zoning as per local municipality IDP/records:

The place is currently zoned as agricultural.

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES	NO X
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1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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2. Location in landscape

Indicate the landform(s) that best describes the site:

2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills	X
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain	X	2.9 Seafront	

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):
Shallow water table (less than 1.5m deep)	NO X		
Dolomite, sinkhole or doline areas	NO X		
Seasonally wet soils (often close to water bodies)	NO X		
Unstable rocky slopes or steep slopes with loose soil	NO X		
Dispersive soils (soils that dissolve in water)	NO X		
Soils with high clay content (clay fraction more than 40%)	NO X		
Any other unstable soil or geological feature	NO X		
An area sensitive to erosion	NO X		

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		NO X	
Non-Perennial River		NO X	
Permanent Wetland		NO X	
Seasonal Wetland		NO X	

Artificial Wetland		NO X	
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If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

N/A

6. Land use character of surrounding area

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station ^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland ^N
Light industrial	Sewage treatment plant ^A	Nature conservation area ^N
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge ^N
Heavy industrial ^{AN}	Railway line ^N	Museum
Power station	Major road (4 lanes or more) ^N	Historical building ^N
Office/consulting room	Airport ^N	Protected Area ^N
Military or police base/station/compound	Harbour	Graveyard ^N
Spoil heap or slimes dam ^A	Sport facilities	Archaeological site ^N
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an "N" are ticked, how this impact will / be impacted upon by the proposed activity? Specify and explain

N/A

If any of the boxes marked with an "AN" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following?

Critical Biodiversity Area (as per provincial conservation plan)	YES X	
Core area of a protected area?		NO X
Buffer area of a protected area?		NO X
Planned expansion area of an existing protected area?		NO X
Existing offset area associated with a previous Environmental Authorisation?		NO X

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix B (as part of sensitivity map).

7. Biodiversity

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix B to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category	If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
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Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	<p>The vegetation type is characterized by a highly variable landscape with extensive sloping plains and a series of ridges slightly elevated over undulating surrounding plains. The vegetation is species-rich, wiry, sour grassland alternating with low, sour shrubland on rocky outcrops and steeper slopes. Most common grasses on the plains belong to the genera <i>Themeda</i>, <i>Eragrostis</i>, <i>Heteropogon</i> and <i>Elionurus</i>. High diversity of herbs, many of which belong to the Asteraceae, is also a typical feature. Rocky hills and ridges carry sparse (savannoid) woodlands with <i>Protea caffra</i> subsp. <i>caffra</i>, <i>P. welwitschii</i>, <i>Senegalia caffra</i> and <i>Celtis africana</i>, accompanied by a rich suite of shrubs among which the genus <i>Rhus</i> (especially <i>R. magalismonata</i>) is most prominent (Mucina and Rutherford, 2006).</p> <p>The vegetation type is endangered. Only roughly 1% of the vegetation type is statutory conserved and about half is transformed mostly by cultivation, plantations, urbanisation or dam-building (Mucina and Rutherford, 2006). Poor management and degradation threatens the remainder of the grassland. The area is classified as a Critical Biodiversity Area (CBA1).</p>
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a) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (Including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	55>%	Overall indigenous species dominate the area, with a good representation of open grassland species.
Near Natural (includes areas with low to moderate level of alien invasive plants)	35%	No alien invasive species were present. Two weedy species and some pioneer and disturbance loving species occur which is to be expected due to disturbance from construction and overgrazing.
Degraded (includes areas heavily invaded by alien plants)	10%	Some disturbance loving species are present: likely due to fencing and previous grazing such as <i>Erigeron canadensis</i> , <i>H. caespitium</i> and <i>Cymbopogon caesius</i>
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	0%	The proposed area is not yet transformed.

Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) Whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems		
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)		
	Endangered			
	Vulnerable			
	Least Threatened			
		YES	NO X	UNSURE

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

8. Cultural/Historical Features

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

	NO X
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There is no above-ground evidence to suggest that building structures older than 60 years or material of cultural significance or archaeological sites will be affected within the demarcated area.

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

“There is no above-ground evidence to suggest that building structures older than 60 years or material of cultural significance or archaeological sites were affected within the demarcated area. The terrain in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C). As far as the archaeological and palaeontological heritage is concerned, the proposed development may proceed with no additional heritage assessments necessary, provided that all excavation activities are restricted to within the boundaries of the development footprint.”

Will any building or structure older than 60 years be affected in any way?

	NO X
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Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

	NO X
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If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

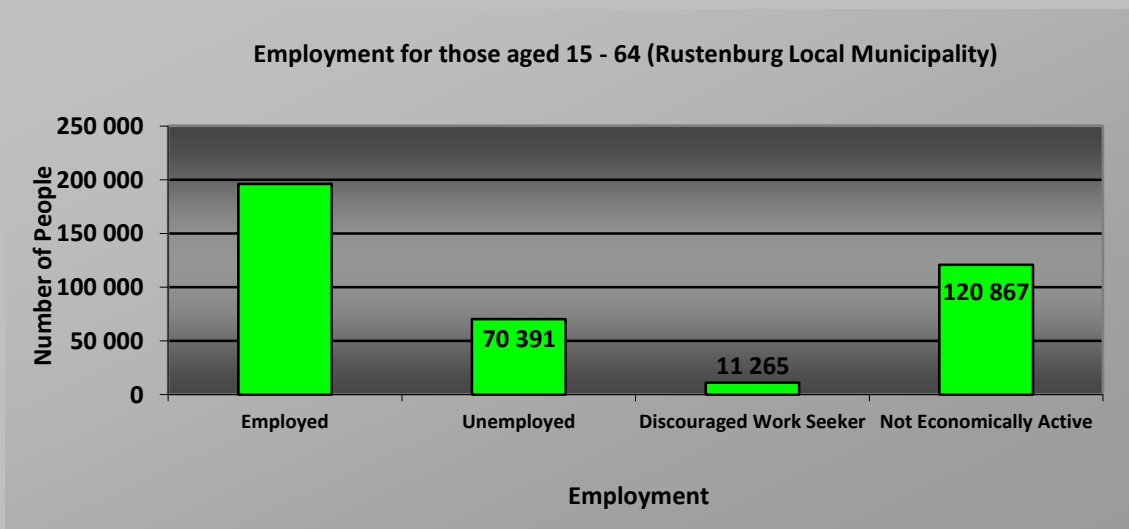
1. SOCIO-ECONOMIC CHARACTER

a) **Local Municipality**

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

266 471 people are economically active (employed or unemployed but looking for work), and of these, 26,4% are unemployed. Further, 34,7% of the 142 219 economically active youth (15 – 34 years) in the municipality are unemployed.



Statssa

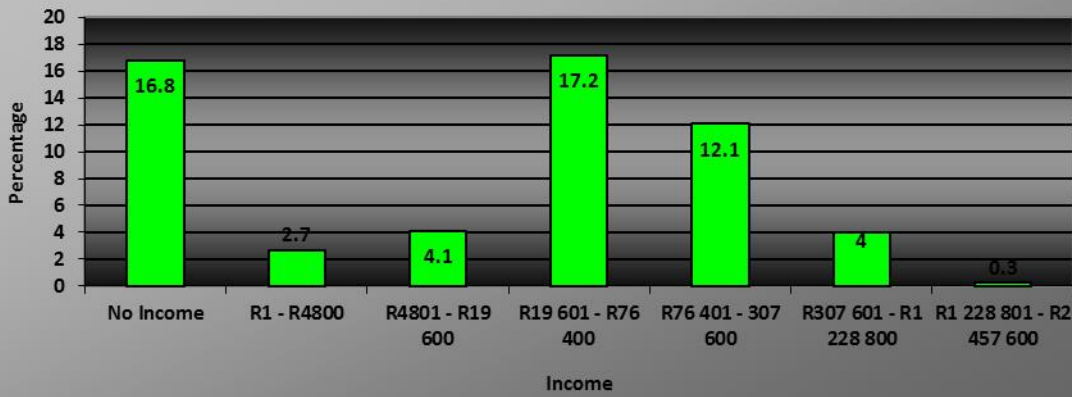
Economic profile of local municipality:

Average Household Income

266 471 people are economically active (employed or unemployed but looking for work), and of these, 26, 4% are unemployed.

34, 7% of the 142 219 economically active youth (15 – 34 years) in the municipality are unemployed.

Average Household Income (Rustenburg Local Municipality)

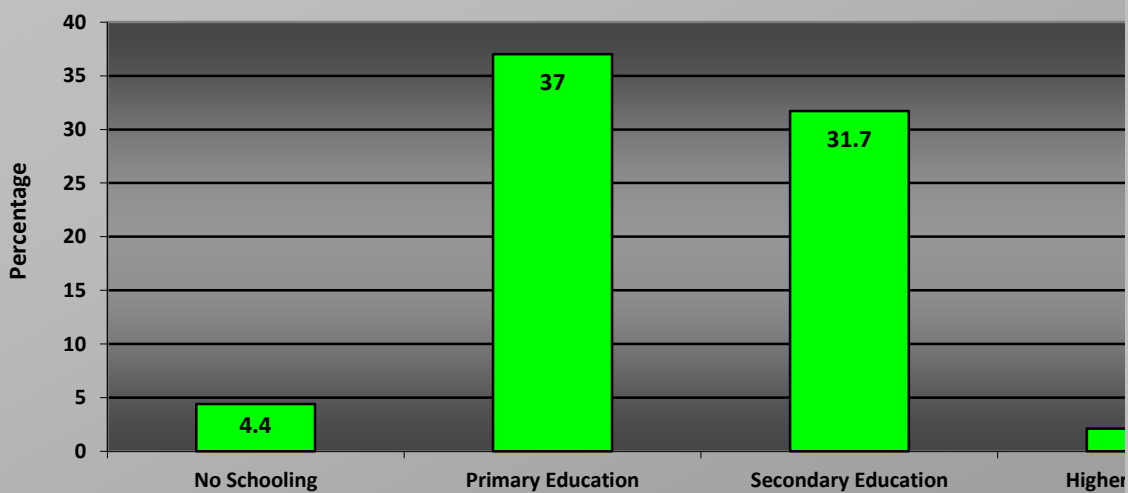


Level of education:

According to Census 2011, Rustenburg Local Municipality has a total population of 549 575 people, of whom 88,5% are black African, 9,4% are white, with the other population groups make up the remaining 2,1%.

Of those aged 20 years and older, 5,4% have completed primary school, 36,2% have some secondary education, 31,1% have completed matric, and 8,9% have some form of higher education, while 5,4% of those aged 20 years and older have no form of schooling.

Level of Education (Rustenburg Local Municipality)



b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 1 537 767,55	
What is the expected yearly income that will be generated by or as a result of the activity?	R (will only be provided on request)	
Will the activity contribute to service infrastructure?	YES	NO
Is the activity a public amenity?	YES	NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	30	
What is the expected value of the employment opportunities during the development and construction phase?	R	
What percentage of this will accrue to previously disadvantaged individuals?	%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	30	
What is the expected current value of the employment opportunities during the first 10 years?	R	
What percentage of this will accrue to previously disadvantaged individuals?	%	

2. SPECIALIST(S) CONSULTATION

Has a specialist been consulted to assist with the completion of this section? YES X

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix F. All specialist reports must be contained in Appendix G and must meet the requirement in Appendix 6 of EIA Regulations, 2014.

SECTION C: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

Impact Assessment Methodology

For each potential impact, the **EXTENT** (Spatial scale), **MAGNITUDE** (degree of the impact), **DURATION** (time scale), **PROBABILITY** (occurrence), **IRREPLACEABILITY** (loss of resources) and the **REVERSIBILITY** (degree to which the proposed impact can be reversed) will be assessed by the EAP as well as the Specialists. The assessment of the above criteria will be used to determine the significance of each impact, with and without the implementation of the proposed mitigation measures. The scale to be used to assess these variables and to define the rating categories are tabulated in **Table 1** and **Table 2** below.

Evaluation component	Ranking scale and description (criteria)
MAGNITUDE of negative impact (at the indicated spatial scale)	<p>10 - Very high: Bio-physical and/or social functions and/or processes might be <i>severely</i> altered.</p> <p>8 - High: Bio-physical and/or social functions and/or processes might be <i>considerably</i> altered.</p> <p>6 - Medium: Bio-physical and/or social functions and/or processes might be <i>notably</i> altered.</p> <p>4 - Low : Bio-physical and/or social functions and/or processes might be <i>slightly</i> altered.</p> <p>2 - Very Low: Bio-physical and/or social functions and/or processes might be <i>negligibly</i> altered.</p> <p>0 - Zero: Bio-physical and/or social functions and/or processes will remain <i>unaltered</i>.</p>
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	<p>10 - Very high (positive): Bio-physical and/or social functions and/or processes might be <i>substantially</i> enhanced.</p> <p>8 - High (positive): Bio-physical and/or social functions and/or processes might be <i>considerably</i> enhanced.</p> <p>6 - Medium (positive): Bio-physical and/or social functions and/or processes might be <i>notably</i> enhanced.</p> <p>4 - Low (positive): Bio-physical and/or social functions and/or processes might be <i>slightly</i> enhanced.</p> <p>2 - Very Low (positive): Bio-physical and/or social functions and/or processes might be <i>negligibly</i> enhanced.</p> <p>0 - Zero (positive): Bio-physical and/or social functions and/or processes will remain <i>unaltered</i>.</p>
DURATION	<p>5 - Permanent</p> <p>4 - Long term: Impact ceases after operational phase/life of the activity > 60 years.</p> <p>3 - Medium term: Impact might occur during the operational phase/life of the activity – 60 years.</p> <p>2 - Short term: Impact might occur during the construction phase - < 3 years.</p> <p>1 - Immediate</p>
EXTENT (or spatial scale/influence of impact)	<p>5 - International: Beyond National boundaries.</p> <p>4 - National: Beyond Provincial boundaries and within National boundaries.</p> <p>3 - Regional: Beyond 5 km of the proposed development and within Provincial boundaries.</p> <p>2 - Local: Within 5 km of the proposed development.</p> <p>1 - Site-specific: On site or within 100 m of the site boundary.</p> <p>0 - None</p>
IRREPLACEABLE loss of resources	<p>5 – Definite loss of irreplaceable resources.</p> <p>4 – High potential for loss of irreplaceable resources.</p> <p>3 – Moderate potential for loss of irreplaceable resources.</p> <p>2 – Low potential for loss of irreplaceable resources.</p> <p>1 – Very low potential for loss of irreplaceable resources.</p> <p>0 - None</p>

REVERSIBILITY of impact	<p>5 – Impact cannot be reversed.</p> <p>4 – Low potential that impact might be reversed.</p> <p>3 – Moderate potential that impact might be reversed.</p> <p>2 – High potential that impact might be reversed.</p> <p>1 – Impact will be reversible.</p> <p>0 – No impact.</p>
PROBABILITY (of occurrence)	<p>5 - Definite: >95% chance of the potential impact occurring.</p> <p>4 - High probability: 75% - 95% chance of the potential impact occurring.</p> <p>3 - Medium probability: 25% - 75% chance of the potential impact occurring</p> <p>2 - Low probability: 5% - 25% chance of the potential impact occurring.</p> <p>1 - Improbable: <5% chance of the potential impact occurring.</p>
Evaluation component	Ranking scale and description (criteria)
CUMULATIVE impacts	<p>High: The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Medium: The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Low: The activity is localised and might have a negligible cumulative impact.</p> <p>None: No cumulative impact on the environment.</p>

Table 1: Evaluation components, ranking scales and descriptions (criteria).

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

Table 2: Definition of significance ratings (positive and negative).

Once the evaluation components have been ranked for each potential impact, the significance of each potential impact will be assessed (or calculated) using the following formula:

- **SP (Significance Points) = (Magnitude + Duration + extent + irreplaceability + reversibility) x probability.**

The maximum value is 150 SP (Significance Points). The unmitigated and mitigated scenarios for each potential environmental impact should be rated as per **Table 2** above.

1. Impacts that may result from the planning and design, construction, operational, decommissioning and closure phases as well as proposed management of identified impacts and proposed mitigation measures.

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A (2) of this report

1. POTENTIAL IMPACTS DURING THE CONSTRUCTION PHASE

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:			
Nature of Impact: Negative impact of haphazard placement of infrastructure on the environment.	Activity: The establishment of a main site office and storage site during the construction period will ensure that the poor placement of materials and infrastructure will be avoided. This could also result in the damage or pollution to surrounding areas caused by construction activities.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium (M)	Low (L)	-
Cumulative Impact:	-	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> • Draw up and submit for approval a Site Layout Master Plan. This plan must show the final positions and extent of all permanent and temporary site structures and infrastructure; • The planning for layout must be done in consultation on-site with the Environmental Control 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<p>Officer (ECO);</p> <ul style="list-style-type: none"> • Locate all structures and storage areas, including offices, workshops and stores in approved locations as per the site layout plan; • After the final layout has been approved, conduct a thorough footprint investigation to detect and map (by GPS) any protected plant species and animal burrows; • The contractor may not deface, paint, damage or mark any natural features situated in or around the site for survey or other purposes; • The contractor must ensure that all construction personnel, labourers and equipment remain within the demarcated construction sites at all times; • No servicing of vehicles may be permitted on site, unless for emergency purposes; • Stockpiles should not be situated such that they obstruct pathways; • Location of storage area must take into account prevailing winds, distance to water bodies and general on-site topography; • Protected Plant Species must be relocated (where possible); • Animal burrows must be monitored by the Environmental Control Officer (ECO) prior to construction for activity/presence of animal species. If detected, such animals must be removed and relocated by a qualified professional/contractor; • Place infrastructure as far as possible on sites that have already been transformed; and, • Facilities may not be used as staff accommodation. 		
<p>Nature of Impact: Topsoil Removal and Soil Erosion.</p>	<p>Activity: The clearing of topsoil and excavation for the establishment of building foundations may result in the removal of fertile topsoil.</p>		<p>No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.</p>
Significance Rating:	Medium-High (MH)	Low (L)	-
Cumulative Impact:	-	-	-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
Proposed Mitigation:	<ul style="list-style-type: none"> • Remove topsoil approximately 300mm deep from establishment area and stockpile areas; • Topsoil stockpiles to be kept free from weeds; • Topsoil stockpiles to be placed on a levelled area and measures to be implemented to safeguard the piles from being washed away in the event of heavy rain/storm water; • Topsoil need to be stored on designated areas only. This need to be planned and indicated in the site-layout plan; • Strip and stockpile herbaceous vegetation, overlying grass and fine organic matter along with the topsoil; • Ensure that topsoil is not mixed with subsoil and/or any other excavated material; • Provide containment and settlement facilities for effluents from concrete mixing and washing facilities; • Temporarily stored topsoil must be re-applied within 6 months, topsoil stored for longer need to be managed according to a detailed topsoil management plan; • Do not strip topsoil when it is wet; • Provide spill containment facilities for hazardous materials like fuel and oil; and, • Topsoil must be used in all rehabilitation activities, and may not be compacted to ensure that its plant support capacity remain of high quality. 		-
Nature of Impact: Surface and groundwater contamination due to construction activities such as the use of hazardous materials on site e.g. fuel and oil.	Activity: Spills could possibly occur on site and lead to the contamination of soil and groundwater.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
Significance Rating:	Medium-High (MH)	Low (L)	-
Cumulative Impact:	Low (L)	None	-
Proposed Mitigation:	<ul style="list-style-type: none"> Concrete can be mixed on mixing trays only and not on exposed soil. Concrete must be mixed only in areas which have been specially demarcated for this purpose (preferable where no natural vegetation occur); Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces; Material Safety Data Sheets (MSDSs) should be available on site for all chemicals and hazardous substances to be used on-site, including information on their ecological impacts and how to minimise the impacts in case of leakage; All spillage must be cleaned up immediately after they have occurred; Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bioremediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site; Do not locate any ablution facilities, sanitary convenience, septic tank or French drain within the 1:100 year flood line, or within a horizontal distance of 100m (whichever is greater) of a watercourse or drainage line; Vehicles and machinery must be regularly serviced to avoid leakages; No vehicles may be parked within 100m from a watercourse; No uncontrolled discharges from the site or working area to depressions may be permitted. All discharge points will require approval from the Environmental Site Agent (ESA); No water courses may be used to clean equipment, or for bathing. All cleaning operations should take place off site at a location where waste water can be disposed of correctly; The discharge of any pollutants such as cement, concrete, lime, chemicals, etc. into the natural environment and the storm water system must strictly be prohibited; Fuel and chemical storage should be done within a designated area only, which is properly bund and able to contain 110% of the capacity of fuel or chemicals stored within; 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> Construction vehicles must be inspected every morning before work commence to ensure that no leakages do occur; All personnel must receive induction on how to report spillages, contain them and treat them accordingly; Spill kits must be available at each working station; Drip trays must be placed beneath all construction equipment that is stationary on site or within the site camp; and, Hazardous waste must be stored in bins with a lid in a demarcated waste area, and must be disposed of at a hazardous treatment facility with records on file. 		
Nature of Impact: Handling of general waste materials on the development site.	Activity: The presence of personnel and construction operations on site will increase the likelihood of littering and the dumping of solid waste.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium (M)	Low (L)	-
Cumulative Impact:	-	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> An adequate number of scavenger proof litter bins are to be placed throughout the site. Two waste bins at least must be present, one (1) for hazardous waste and one (1) for non-hazardous waste at each working site. Dumping of waste on site is prohibited; Waste sorting and separation should form part of the environmental induction and awareness programme, to encourage personnel to collect waste paper, glass and metal waste separately; Keep all work sites including storage areas, offices and workshops neat and tidy; Dedicate a demarcated and signposted storage area on site for the collection of construction waste; All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site (Landfill site) as mentioned in the Basic Assessment Report; Care should be taken to ensure that no waste fall off disposal vehicles on-route to the landfill. If 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<p>needed, a tarpaulin can be utilised;</p> <ul style="list-style-type: none"> • The burning or burying of solid waste on site is prohibited. Do not burn PVC pipes or other plastic materials, as this is regarded as hazardous waste; • Littering by construction workers shall not be permitted; • Workers from the immediate area need to be encouraged to take their waste with them at the end of each day; • General refuse/rubbish shall be removed from site on a weekly basis to an approved registered landfill site or as soon as the waste bins are reaching full capacity; • Minimise waste by sorting wastes into recyclable and non-recyclable waste; • Ablution facilities must be serviced by a registered service provider, cleaned at least once a week, and safe disposal slips must be on file at the site office; • A bi-weekly (twice a week) litter patrol of the entire site shall be conducted by the designated Environmental Control Officer (ECO); • Waste bins must be placed at all stop and go areas and the area must be cleaned twice a day (morning and afternoon); • Hazardous waste must be sorted from non-hazardous waste and disposed of at a hazardous treatment facility, records and proof of disposal must be kept; and, • A register must be kept of the quantities of waste disposed and proof of disposal must be available at the site office. 		
Nature of Impact: Increased risk of veld fires.	Activity: Due to the presence of construction personnel in natural areas, fires can occur if not managed to the correct standard.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Total SP:	75	4	-
Significance Rating:	Medium-High (MH)	Low	-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
Cumulative Impact:	Low	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> The potential risk of veld fires are heightened by windy conditions in the area, specifically during the dry, windy summer months; Ensure the work site and the contractor's camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veldt areas, and at least one fire extinguisher of the appropriate type irrespective of the site; Workers must be adequately trained in the handling of firefighting equipment; No open fires are permitted anywhere on site. Do not store any fuel or chemicals under trees; Do not store gas and liquid fuel in the same storage area (Hazardous substances to be stored in accordance with SANS); The Contractor should ensure that construction related activities that pose a potential fire risk, such as welding, heating of bitumen etc., are properly managed and confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include clearing working stations and avoid working in high wind speed conditions when the risk of fires is greater; No smoking is allowed near any natural areas; Do not permit any smoking within 3m of any fuel or chemical storage area, or refuelling area. A designated smoking area must be established on site; and, All construction vehicles must be fitted with at least one fire extinguisher. 		-
Nature of Impact: Traffic impacts associated with the movement of construction vehicles on site.	Activity: The movement of vehicles on site may result in the destruction of biodiversity, compaction of valuable topsoil and mortalities of fauna on site.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium (M)	Low (L)	-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
Cumulative Impact:	-	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> • After the final layout has been approved, conduct a thorough footprint investigation (walk-through) to detect and map (by GPS) all protected plant species, which have to be removed and animal burrows, present within the project site. • Animal burrows must be monitored by the ECO prior to construction for activity/presence of animal species. If detected, such animals must be removed and relocated by a qualified professional/contractor; • During construction create designated turning areas and strictly prohibit any off-road driving or parking of vehicles and machinery outside designated areas; • Ensure that runoff from compacted or sealed surfaces is slowed down and dispersed sufficiently to prevent accelerated erosion from being initiated (storm water and erosion management plan required). • Ensure adequate drainage where roads cross drainage lines or ephemeral tributaries; • Monitor the establishment of (alien) invasive species and remove as soon as detected, before regenerative material can be formed; • Abnormal loads and machinery should avoid movement over gravel roads during and immediately after rainfall events, so as to limit destruction of road surfaces and sedimentation of downhill rivers/streams; • All vehicles must be road-worthy, be maintained to prevent fuel or oil leaks and drivers are to be licensed appropriately for the driving of their assigned vehicle. Drivers responsible for the transportation of personnel must be specifically licensed to do so; • Construction vehicles may not leave the designated roads and tracks, whilst U-Turns are prohibited on all roads; • Signage is to be placed on vehicles at all times; • All construction vehicles should adhere to construction sites and avoid off road to minimise impact on vegetation and soil; 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> Construction Vehicles may not be parked in the road reserve, specific parking areas must be identified prior to construction and these areas must be inspected to ensure no red data species occur; After decommissioning, if access roads or portions thereof will not be of further use to the landowner, remove all foreign material and rip area to facilitate the establishment of vegetation, followed by a suitable revegetation program; and, Construction-related vehicles and machinery may not operate on site without reflective safety signage, car-top lights and reflective personnel gear. 		

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
POTENTIAL IMPACTS ON BIOLOGICAL ASPECTS:			
Nature of Impact: Direct impact on vegetation during construction and loss of species.	Activity: The construction of several permanent structures on site will result in the loss of vegetation due to foundation diggings.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium-High (MH)	Low (L)	-
Cumulative Impact:	-	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> After the final layout has been approved, conduct a thorough footprint investigation to detect and map (by GPS) any protected plant species and active animal burrows; Protected plant species must be relocated where possible; Keep areas affected to a minimum, strictly prohibit any disturbance outside the demarcated construction footprint area; Clear as little indigenous vegetation as possible, aim to maintain vegetation where it will not interfere with the construction or operation of the development, rehabilitate an acceptable vegetation layer according to rehabilitation recommendations of the relevant EMP'r, if possible; 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> Indigenous vegetation unique to the area must be used during landscaping activities; There should be a preconstruction environmental induction for all construction staff on site to ensure that basic environmental biodiversity principles are adhered to; Where the ECO deems it necessary (e.g. sensitive, natural areas) the ecologist appointed to do the vegetation study will be utilized; No vehicles may be parked within the road reserve, designated parking areas must be identified during the planning phases; Restoration measures will be required to reinstate functionality in the disturbed soil and vegetation; Impacts to sensitive sites (drainage lines) should be avoided; No vegetation may be gathered for the purpose of creating fire; and, No fires are allowed on site. 		
Nature of Impact: Dust nuisance generated by the operation of machinery and vehicles.	Activity: The frequent upwelling of dust as consequence of the movement of vehicles and machinery on site may impact on worker health causing asthma and other respiratory conditions. Stockpiles are susceptible to the upwelling of fine particulate matter. Several ambient factors, the terrain characteristics, soil type and land use forms can attribute to the degree of loss and susceptibility of stockpiles towards the generation of dust. Regular watering of exposed surfaces may result in the reduction of wind-generated dust from stockpiles.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium (M)	Low (L)	-
Cumulative Impact:	-	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> Implement dust suppression measures by watering (or any acceptable method) areas to be cleared as well as already exposed surfaces with damaged soil particles, particularly during dry, windy periods; Ensure all vehicles remain on designated roads and avoid the opening of detour or by-pass tracks; Implement speed restrictions for vehicles on gravel roads; The transport of soil aggregates should be done over the shortest possible distance; The minimum amount of topsoil and vegetation should be removed during construction, and should 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	be conserved and used for final rehabilitation; <ul style="list-style-type: none"> • Manage and maintain roadside vegetation to allow for absorption of runoff from road surfaces during and after rainy periods; and, • After construction decommissioning, if access roads or portions thereof will not be of further use to the landowner, remove all foreign material and rip area to facilitate the establishment of vegetation, followed by a suitable revegetation program. 		
Nature of Impact: Fauna will be directly impacted as a result of construction activities and human presence at the site.	Activity: The construction of facilities will result in some habitat loss for resident fauna, as some species will occur within the affected areas. In addition, increased levels of noise, pollution, disturbance and human presence during construction will be detrimental to resident fauna. Sensitive and shy fauna may move away from the area during the construction phase as a result of the noise and human activities present, while some slow-moving species (such as mole rats or blind snakes) would not be able to avoid the construction activities and might be killed.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium	Low (L)	-
Cumulative Impact:	Medium	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> • No hunting, snaring, shooting, nest raiding or egg collection by the construction staff should be allowed; • Holes and trenches should not be left open for extended periods of time and should only be dug when needed for immediate construction. Trenches that may stand open for some days should have places where the loose material has been returned to the trench to form an escape ramp present at regular intervals to allow any fauna that fall in to escape; • Fires should only be allowed within fire safe demarcated area; • Ensure that the construction area is fenced off from adjacent areas which may harbour wild animals; • Do not store building materials and excess stockpiled soils within riparian zones or within areas where natural vegetation occur; and, • Should any fauna be discovered it should be relocated to an area outside the development footprint 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	by a trained professional.		

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS:			
Nature of Impact: Presence of construction workers in the area.	Activity: Construction workers pose a potentially negative risk to family structures and social networks in the area, especially from nearby community "Molote City". The risk are associated with behaviour of male construction personnel and include an increase in alcohol and drug use, a possible increase in crime levels, an increase in teenage and unwanted pregnancies, an increase in prostitution and an increase in sexually transmitted diseases.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium (M)	Low (L)	-
Cumulative Impact:	Low (L)	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> Where possible, implement a requirement for contractors to implement a local employment policy for construction jobs, particularly for semi and low-skilled job categories, thus reducing impact which foreign workers could have on local communities; A contractual requirement of potential contractors must be a preparation and implementation of a Code of Conduct for construction workers, identifying types of behaviour and activities which construction workers may not engage in. Workers who breach this code should be dismissed, on the grounds that such dismissals comply with South African labour legislation; The project manager responsible for contractor appointments and administration, should implement an HIV/AIDS awareness programme for all contractors and their construction workers prior to commencement of construction; Contractors must manage the transport and movement of workers on and off site on a daily basis, as well as allow for the returning home of workers intermittently over weekends to limit interaction with local communities during such periods; and, 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> No personnel, with the exception of security officers, are permitted to stay overnight in the vicinity of the construction site and must be housed in a site camp. 		
Nature of Impact: The creation of job opportunities during the construction phase.	Activity: The construction period will create a few job opportunities for individuals residing in the area of Boons, Molote City.		No construction will result in no job creation within the Local Area
Significance Rating:	Medium + (M+)	Medium-High + (M+)	Medium (M)
Cumulative Impact:	-	-	Low (L)
Proposed Mitigation:	<ul style="list-style-type: none"> Where reasonable and practical the contractors appointed by the applicant should appoint local contractors and implement a “local first” policy, especially for semi and low-skilled job categories. However; due to the low skill levels in the area, the majority of skilled posts are likely to be filled by personnel from outside the area; The recruitment selection process should seek to promote gender equality and the employment of women wherever possible, particularly for less labour-intensive work such as flag bearing and supervision; and, The ongoing presence of semi and high skilled personnel involved in the project construction phase will generate sustained clientele to a portion of the guest house industry within the vicinity of the development. 		-
Nature of Impact: Prevent danger to trespassing of persons.	Activity: Keep the site secure from Local Communities and thieves in order to avoid any injuries and/or theft of equipment.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Total SP:	44	8	-
Significance Rating:	Medium (M)	Low (L)	-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
Cumulative Impact:	-		-
Proposed Mitigation:	<ul style="list-style-type: none"> • Be responsive to open or closed status of gates; • New or the upkeep of fences should align to ensure safety of animals and maintain a reliable boundary area; • All equipment must be stored properly in a site camp with a lockable gate to ensure no risk to local communities at night; and, • It is recommended that a security guard be appointed to see to equipment after hours. 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS:			
Nature of Impact: Damage and destruction of vertebrate fossils during excavation activities.	Activity: Excavation activities can result in the discovery of cultural and historical artefacts beneath the earth surface. Damage or loss can occur if the correct procedures are not followed.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Total SP:	30	5	-
Significance Rating:	Low (L)	Low (L)	-
Cumulative Impact:	-	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> • Should any heritage resources (including but not limited to fossil bones, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts or bone remains, structures and other built features, rock art and rock engravings) be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped. A trained palaeontologist or heritage specialist must be notified to assess the finds, and this must then be reported to the 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<p>applicable heritage authority;</p> <ul style="list-style-type: none"> • Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from the heritage authority. A registered heritage specialist must be called to the site for inspection and removal once authority to do so, has been given; • Excavations must be limited to the footprint area and be maintained in a narrow corridor; • All operations of excavation equipment must be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures must be followed: <ul style="list-style-type: none"> ○ All construction in the immediate 50 m vicinity radius of the site must cease; ○ The heritage practitioner must be informed as soon as possible; ○ In the event of obvious human remains SAPS must be notified; ○ Mitigation measures (such as refilling, etc.) must not be attempted; ○ The area in a 50 m radius of the find must be cordoned off with hazard tape; • Public access must be limited and the area must be placed under guard; • The Furnace area must be protected and declared a no-go area until the developer appoints a suitably qualified archaeologist to conduct a Phase 2 archaeological assessment of the terrain and to draw up a heritage management plan for the site; and, • The appointed archaeologist must apply for a valid permit from SAHRA to excavate the furnace for display and educational purposes. 		

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
POTENTIAL IMPACTS ON VISUAL ASPECTS:			
Nature of Impact:	Activity:		No construction phase impacts are associated with the no-go alternative thus no
Impact on the sense	The movement of construction vehicles, machinery and personnel on site shall result in a visual impact on		

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
of place for surrounding users.	surrounding users. Furthermore to this, the storage of materials and excavation shall result in disturbance and an unsightly character.		assessment has been undertaken.
Significance Rating:	Medium (M)	Low (L)	-
Cumulative Impact:	Low (L)	Low (L)	-
Proposed Mitigation:	<ul style="list-style-type: none"> • Access roads are to be kept clean and dust suppression techniques should be implemented to minimise impacts of vehicle movement; • Site offices and structures should be limited to one location and carefully situated to reduce visual intrusions. Roofs should be grey and non-reflective; • Construction camps as well as development areas should be screened with netting; • Lights within the construction camp should face directly down (angle of 90°); • Vegetation should remain intact and development must be situated behind the vegetation screen to minimise the visual impact; • Minimum vegetation should be removed to ensure the visual absorption capacity remain high; • Litter should be strictly controlled, as the spread thereof through wind could have a very negative visual impact; and, • Avoid shiny materials in structures. Where possible shiny metal structures should be darkened or screened to prevent glare. 		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
POTENTIAL IMPACTS ON NOISE ASPECTS:			
Nature of Impact: Noise nuisance	Activity: The operating of vehicles and machinery on site results in the generation of noise disturbing users of the		No construction phase impacts are associated with

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
generated by construction works, vehicles and personnel.	surrounding area.		the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium (M)	Low (L)	-
Cumulative Impact:	Low (L)	Low (L)	-
Proposed Mitigation:	<ul style="list-style-type: none"> • Limit working hours of noisy equipment to daylight; • All stationary noisy equipment such as compressors and pumps should be contained behind acoustic covers, screens or sheds where possible; • The regular inspection and maintenance of equipment must be undertaken to ensure that all components is functioning optimally; • Where recurrent use of machinery is frequent, machines should be shut down during intermediate periods; • Fit silencers to equipment; • Unless otherwise specified by the ESA, normal work hours will apply (i.e. from 06:30 to 17:00, Mondays to Fridays); • Ensure that Employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours; and, • No loud music is permitted on site or in the Site Camp. 		-

2. POTENTIAL IMPACTS DURING THE OPERATIONAL PHASE:

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:			
Nature of Impact: Handling of general waste materials on the maintenance site.	Activity: The presence of maintenance personnel on site will increase the likelihood of littering and dumping of solid waste.		No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium (M)	Low (L)	-
Cumulative Impact:	-	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> • An adequate number of scavenger proof litter bins are to be placed throughout the site; • Waste sorting and separation bins should be placed at all public facilities, to encourage visitors to dispose waste paper, glass and general waste separately; • Keep all work sites including storage areas, offices and workshops neat and tidy; • All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site (Landfill site) as mentioned in the Basic Assessment Report; • Care should be taken to ensure that no waste fall of disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised; • The burning or burying of solid waste on site is prohibited. Do not burn PVC pipes or other plastic materials, as this is regarded as hazardous waste; • Minimise waste by sorting wastes into recyclable and non-recyclable waste; and, • A bi-weekly litter patrol of the entire site shall be conducted by the designated ESA. 		-
Nature of Impact:	Activity:		No operational phase impacts

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
Surface and groundwater contamination due to maintenance activities such as the use of hazardous materials on site e.g. fuel and oil.	Spills could possibly occur on site and lead to the contamination of soil and groundwater.		are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium-High (MH)	Low (L)	-
Cumulative Impact:	Low (L)	None	-
Proposed Mitigation:	<ul style="list-style-type: none"> • Concrete can be mixed on mixing trays only and not on exposed soil. Concrete must be mixed only in areas which have been specially demarcated for this purpose (preferable where no natural vegetation occur); • Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces; • Material Safety Data Sheets (MSDSs) should be available on site for all chemicals and hazardous substances to be used on-site, including information on their ecological impacts and how to minimise the impacts in case of leakage; • All spillage must be cleaned up immediately after they have occurred; • Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bioremediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site; • Do not locate any ablution facilities, sanitary convenience, septic tank or French drain within the 1:100 year flood line, or within a horizontal distance of 100m (whichever is greater) of a watercourse or drainage line; • Vehicles and machinery must be regularly serviced to avoid leakages; • No vehicles may be parked within 100m from a watercourse; 		-

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> No uncontrolled discharges from the site or working area to depressions may be permitted. All discharge points will require approval from the Environmental Site Agent (ESA); No water courses may be used to clean equipment, or for bathing. All cleaning operations should take place off site at a location where waste water can be disposed of correctly; The discharge of any pollutants such as cement, concrete, lime, chemicals, etc. into the natural environment and the storm water system must strictly be prohibited; Fuel and chemical storage should be done within a designated area only, which is properly bund and able to contain 110% of the capacity of fuel or chemicals stored within; Construction vehicles must be inspected every morning before work commence to ensure that no leakages do occur; All personnel must receive induction on how to report spillages, contain them and treat them accordingly; Spill kits must be available at each working station; Drip trays must be placed beneath all construction equipment that is stationary on site or within the site camp; and, Hazardous waste must be stored in bins with a lid in a demarcated waste area, and must be disposed of at a hazardous treatment facility with records on file. 		
Nature of Impact: Increased risk of veld fires.	Activity: Due to the presence of maintenance personnel in natural areas, fires can occur if not managed to the correct standard.		No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium-High (MH)	Low	-
Cumulative Impact:	Low	-	-
Proposed Mitigation:	<ul style="list-style-type: none"> The potential risk of veld fires are heightened by windy conditions in the area, specifically during the dry, windy summer months; 		-

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> • Ensure the work site and the contractor's camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veldt areas, and at least one fire extinguisher of the appropriate type irrespective of the site; • Workers must be adequately trained in the handling of firefighting equipment; • No open fires are permitted anywhere on site. • Do not store any fuel or chemicals under trees; • Do not store gas and liquid fuel in the same storage area (Hazardous substances to be stored in accordance with SANS); • The Contractor should ensure that maintenance related activities that pose a potential fire risk, such as welding, etc., are properly managed and confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include clearing working stations and avoid working in high wind speed conditions when the risk of fires is greater; • No smoking is allowed near any natural areas; • Do not permit any smoking within 3m of any fuel or chemical storage area, or refuelling area. A designated smoking area must be established on site; and, • All operational vehicles must be fitted with at least one fire extinguisher. 		

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS:			
Nature of Impact:	Activity:		No construction will result in no job creation within the
The creation of job	The operational phase will create a few job opportunities for individuals residing in the area of Boons,		

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
opportunities during the operational phase.	Molote City due to the proposed development.		Local Area
Significance Rating:	Medium + (M+)	Medium-High + (M+)	Medium (M)
Cumulative Impact:	-	-	Low (L)
Proposed Mitigation:	<ul style="list-style-type: none"> Where reasonable and practical the contractors appointed by the applicant should appoint local contractors and implement a “local first” policy, especially for semi and low-skilled job categories. However; due to the low skill levels in the area, the majority of skilled posts are likely to be filled by personnel from outside the area; The recruitment selection process should seek to promote gender equality and the employment of women wherever possible, particularly for less labour-intensive work such as flag bearing and supervision; and, The ongoing presence of semi and high skilled personnel involved in the project construction phase will generate sustained clientele to a portion of the guest house industry within the vicinity of the development. 		-
Nature of Impact: Presence of maintenance workers in the area.	Activity: Maintenance workers pose a potentially negative risk to family structures and social networks in the area, especially from the nearby area/community. The risk are associated with behaviour of male maintenance personnel and include an increase in alcohol and drug use, a possible increase in crime levels, an increase in teenage and unwanted pregnancies, an increase in prostitution and an increase in sexually transmitted diseases.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Medium (M)	Low (L)	-
Cumulative Impact:	Low (L)	-	-

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
Proposed Mitigation:	<ul style="list-style-type: none"> • Where possible, implement a requirement for contractors to implement a local employment policy for maintenance jobs, particularly for semi and low-skilled job categories, thus reducing impact which foreign workers could have on local communities; • A contractual requirement of potential contractors must be a preparation and implementation of a Code of Conduct for maintenance workers, identifying types of behaviour and activities which maintenance workers may not engage in. Workers who breach this code should be dismissed, on the grounds that such dismissals comply with South African labour legislation; • The project manager responsible for contractor appointments and administration, should implement an HIV/AIDS awareness programme for all contractors and their maintenance workers prior to commencement of maintenance activities; • Contractors must manage the transport and movement of workers on and off site on a daily basis, as well as allow for the returning home of workers intermittently over weekends to limit interaction with local communities during such periods; and, • No personnel, with the exception of security officers, are permitted to stay overnight in the vicinity of the maintenance site and must be housed in a site camp. 		-

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
POTENTIAL IMPACTS ON NOISE ASPECTS:			
Nature of Impact: Noise nuisance generated by maintenance works,	Activity: The operating of vehicles and machinery on site results in the generation of noise disturbing users of the surrounding area.		No operational phase impacts are associated with the no-go alternative thus no assessment has been

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
vehicles and personnel.			undertaken.
Significance Rating:	Medium (M)	Low (L)	-
Cumulative Impact:	Low (L)	Low (L)	-
Proposed Mitigation:	<ul style="list-style-type: none"> • Limit working hours of noisy equipment to daylight; • All stationary noisy equipment such as compressors and pumps should be contained behind acoustic covers, screens or sheds where possible; • The regular inspection and maintenance of equipment must be undertaken to ensure that all components is functioning optimally; • Where recurrent use of machinery is frequent, machines should be shut down during intermediate periods; • Fit silencers to equipment; • Unless otherwise specified by the ESA, normal work hours will apply (i.e. from 06:30 to 17:00, Mondays to Fridays); • Ensure that Employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours; and, • No loud music is permitted on site or in the Site Camp. 		-

A complete impact assessment which include process undertaken to identify, assess and rank the impacts, the activity will impose on the site through the life of the activity in terms of EIA Regulation 2014, Appendix 1(i) and (j) of GN R.982 must be included as Appendix H.

2. Environmental impact statement

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

Direct impact on vegetation during construction and loss of species. Fauna will be directly impacted as a result of construction activities and human presence at the site.

The construction of facilities will result in some habitat loss for resident fauna, as some species will occur within the affected areas. In addition, increased levels of noise, pollution, disturbance and human presence during construction will be detrimental to resident fauna. Sensitive and shy fauna may move away from the area during the construction phase as a result of the noise and human activities present, while some slow-moving species (such as mole rats or blind snakes) would not be able to avoid the construction activities and might be killed.

Alternative B

N/A

Alternative C

N/A

No-go alternative (compulsory)

The no-go option for the proposed development will result in farmers using the old traditional method of seedling, which is time consuming and uses high amounts of water, Etc.

The advantages of the Hydroponics Farming:

- Hydroponics uses less nutrient material to feed their plants; these exist within a self-contained environment that can easily control the waste products. This is much better, as prevents excessive use of fertilizers unlike in the traditional farming where more fertilizers are used, and end up flowing into the rivers and spoiling the water to be used by the humans and the animals.

- Hydroponics calls for less amount of water and nourishment; in the hydroponics system less water is used since the required water is supplied in fixed proportions and a controlled environment, furthermore, water is recycled in this system. This is very advantageous compared to irrigation where much water is wasted without recycling or in the traditional farming methods. This also reduces the farmers water cost hence lowering the production costs.
- No soil is needed in this system; gardening is done without any soil and it only uses 10 percent of the water used on the ordinary planting. Furthermore, the plants grown on this method have a higher growth rate compared to the normal planting. The faster growth is contributed by a highly controlled environment with the availability of more oxygen, water and nourishing substances for the plants.
- Hydroponics can be produced at any season since they grow into their own controlled environment which is controlled and protected from predators like plant eating animals.
- Less amount of time and work is required in hydroponics gardening; the amount of work needed is very little due to the absence of the weeds that would require time to pluck them out. This method is time saving since no weeds are present only some few minutes are needed to check the nutrient levels and the harvesting processes.

Therefore not having this Hydroponics Project will deny farmers an opportunity of a less costing method of crop planting. Job opportunities for the unemployed will also be deprived of.

SECTION D: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	To be announced once Public Participation Process has been conducted	
Date published	Will be included in the Final BAR	
Site notice position	Latitude	Longitude
Date placed		

Include proof of the placement of the relevant advertisements and notices in Appendix I1.

2. Determination of appropriate measures

Provide 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)
Ms Ouma Skhosana	Environmental Officer	Tel: +27 (18) 389 5156 Fax: 086 507 6333 Email: oskosana@nwpg.gov.za
To Be Completed		

Include proof that the key stakeholder received written notification of the proposed activities as Appendix I2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
Will be provided once the Public Participation has commenced.	Will be provided once the Public Participation has commenced.

4. COMMENTS AND RESPONSE REPORT

The practitioner must make report (s) available to I&APs record all comments received from I&APs and respond to each comment before is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA Regulations and be attached to the Final BAR as Appendix I3.

5. 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
Rustenburg Local Municipality Councillor					
Bojanala District Municipal Manager					
Department of Rural, Environment and Agricultural Development					
Department of Water and Sanitation					
Department of agriculture					
Heritage					
Department of Rural Development and Land Reform					

Include proof that the Authorities and Organs of State received written notification and draft reports of the proposed activities as Appendix I4.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process

may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as Appendix I5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix ISECTION E. Recommendation of practitioner

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES
X

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

N/A

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

- It is important that all mitigation measures within the EMP are strictly adhered to;
- Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately and Heritage North West must be notified without delay;
- Prior to construction a walkthrough investigation to identify, map and translocate all protected plant species must be conducted;
- Translocation of indigenous species should not be done without permits from relevant Competent Authorities;
- Alien vegetation eradication program should be developed and implemented for the site to remove alien vegetation during all operational phases.
- Follow-up clearing and monitoring should be done to detect any new invasive species establishment and spread during operation and decommissioning. It is important that monitoring and control operations should extend into the surrounding natural grassland.
- Alien plant material removed during construction and eradication efforts should be contained and disposed of properly to limit accidental spread.
- Future expansion and construction activities should be limited to the smallest possible area.

The EMPr that meet the requirements of EIA Regulation, 2014, Appendix 4, must be attached as Appendix J.

Is an EMPr attached?

YES	
X	

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix K

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix F

Any other information relevant to this application and not previously included must be attached in Appendix L.

SECTION F: AFFIRMATION BY EAP

I ----- (name of person representing EAP) of -----
----- (name of company) declare that the information provided is correct and relevant to the activity/ project and that; the information was made available to interested and affected parties for their comments. All specialist (s) reports are relevant for the competent authority to make informed decision.

SIGNATURE OF EAP

DATE

SECTION F: APPENDICES

The following appendices must be attached:

Appendix A: A3 Locality Map

Appendix B: Layout Plan and Sensitivity Maps

Appendix C: Photographs

Appendix D: Facility illustration(s)

Appendix E: Confirmation of services by Municipality (servitude and infrastructure planning)

Appendix F: Details and expertise of Specialist and Declaration of Interest

Appendix G: Specialist reports (including terms of reference)

Appendix H: Impact Assessment

Appendix I: Public Participation

Appendix J: Environmental Management Programme (EMPr)

Appendix K: Details of EAP and expertise

Appendix L: Any other Information

Appendix M: Financial Provision (if applicable)

Appendix N: Closure Plan (where applicable) as described in Appendix 5 of EIA Regulations, 2014