



**ENVIRONMENTAL AUTHORISATION, WASTE  
MANAGEMENT LICENSE AND WATER USE LICENSE  
APPLICATION FOR THE PROPOSED EXPANSION OF  
CHICKEN HOUSES FROM APPROXIMATELY 30 000 TO 60  
000 CHICKENS, BULHOEK FARM, NEAR SWARTRUGGENS,  
NORTHWEST PROVINCE**

**Final Basic Assessment Report**

February 2022

Prepared for:



Prepared by:


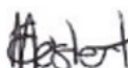
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Today's Impact | Tomorrow's Legacy

## QUALITY AND REVISION RECORD

### QUALITY APPROVAL

	Capacity	Name	Signature	Date
Author	Environmental Assessment Practitioner	Megan Smith		27/02/2022
Reviewer	CEO of Enviroworks and Lead Environmental Assessment Practitioner	Elana Mostert		27/02/2022

This report has been prepared in accordance with Enviroworks Quality Management System.

### REVISION RECORD

Revision Number	Objective	Change	Date
1	Draft Bar	Internal & Client review	11/11/2021
2	Update based on comments from I&APs	Removal of one activity and inclusion of PPP report	27/02/2022

### DISCLAIMER

Even though every care is taken to ensure the accuracy of this report, environmental assessment studies are limited in scope, time and budget. Discussions are to some extent made on reasonable and informed assumptions built on bona fide information sources, as well as deductive reasoning. Since environmental impact studies deal with dynamic natural systems additional information may come to light at a later stage during the impact assessment phase. The author does not accept responsibility for conclusions made in good faith based on own databases or on the information provided. Although the author exercised due care and diligence in rendering services and preparing documents, he accepts no liability, and the client, by receiving this document, indemnifies the author against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with services rendered, directly or indirectly by the authors and by the use of this document. This report should therefore be viewed and acted upon with these limitations in mind.

## **EXECUTIVE SUMMARY**

**Introduction and Background**

Quantum Foods (PTY) Ltd. (The Applicant) appointed Enviroworks, an Independent Environmental Assessment Practitioner (EAP) to undertake the required:

- Basic Assessment Process for the intended Waste Management License and Environment Authorisation, and
- Water Use License Application

for the proposed construction of eight (8) chicken layer houses and twenty (20) evaporation ponds, and the usage of three (3) boreholes for a Poultry Farm (in North West Province) on:

- Portion 34 of Farm 389
- Portion 35 of Farm 389
- Portion 14 of Farm 389
- Portion 40 of Farm 389
- Portion 21 of Farm 389
- Portion 36 of Farm 389
- Portion 13 of Farm 389

**Project Description**

The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartruggens and the city of Rustenburg, North West Province.

The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility. The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments. Based on a meeting with Department that occurred on 17/02/2022, the current farming operations commenced and were operated before 1998. This is present by an asset register (Appendix L1) illustrating all the current chicken houses. During the meeting, Quantum Foods confirmed that the items in the asset register would have been planned and initiated at least 2 years prior to the publication of the asset register. This is reflected by aerial imagery illustrating that all the chicken houses were built and operating by 2002 (Appendix L2).

In accordance with the information received from the farm manager during the site assessment, the layer houses get washed out twice annually. This process constitutes the following main two steps:

- Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party (farmer). The manure is used by the external farmer for agricultural fertiliser.
- The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses.

This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses.

All wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. Quantum Foods now proposes the development of twenty (20) lined and impermeable evaporation ponds (each being 25m<sup>2</sup> with a depth of 1.2 m) to treat the wash water. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent wash water having contact with- and potentially contaminating surrounding undeveloped environments.

The chemicals associated with cleaning the chicken houses have been included in Appendix G. These chemicals are Peroxysan, Hyposan, Foamcleaner, Viroclear, Cleanclear and Triazolol. These chemicals are not hazardous, most of them do not present toxic characteristics, are not carcinogenic, has little to non-eco-toxicological effects, hazardous polymerization will not occur, and some are bio-degradable. Therefore, the waste associated from washing the chicken houses can be classified as non-hazardous. This is based on the Material Safety Data Sheets for the chemicals

It is predicted that only dirt (i.e., soil and windblown sand) and dried, non-infectious chicken manure are currently by products of the wash (besides the cleaning agent).

In terms of water usage, the water sources currently used on site, constitute three (3) boreholes that supply approximately 228 742.31 m<sup>3</sup>/month. The three (3) water reservoirs currently present on site, have a capacity of approximately 100 000 litres.

The chicken farm currently operates on the Eskom grid.

#### **Legislative Context**

The proposed project constitutes the following Listed Activities in terms of the NEMA (No. 107 of 1998), NEM:WA (No. 59 of 2008), and the NWA ( No. 36 of 1998) :

*Potential listed activity as described in the Environmental Assessment Regulations (2014, as amended), GN 706 of 2018 as amended by GN 517 on 11 June 2021:*

**Activity 40.** *“The expansion and related operation of facilities for the concentration of poultry, excluding chicks younger than 20 days, where the capacity of the*

facility will be increased by—

*(ii) more than 5 000 poultry per facility situated outside an urban area”*

Triggered reasons: Expansion of broiler houses that will accommodate more than 5000 chickens per facility outside an urban area

The following Listed Activities in terms of the NEM:WA:

*Potential listed activity as described in the National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA), GN 921 of 2013 as amended by GN 633 on 24 July 2015*

**Category A: Activity 1**

**-Storage of waste:**

*“The storage of general waste in lagoons.”*

**Triggered reason:** Twenty (20) evaporation ponds will be constructed on site for the treatment of wastewater from washing the chicken houses.

**Category A: Activity 12**

**-Construction, expansion or decommissioning of facilities and associated structures and infrastructure:**

*“The construction of a facility for a waste management activity listed in Category A of this Schedule (not in isolation to associated waste management activity).”*

**Triggered reason:** Twenty (20) evaporation ponds will be constructed on site for the treatment of wastewater from washing the chicken houses.

*Potential listed water uses that require a water use license as described in the National Water Act (No. 36 of 1998), GN 19182 as amended by GN 20706 on 6 December 1999 and GN 450 on 2 September 2014::*

Section 21(a):

*Taking water from a water resource*

Section Section 21(g):

*Disposing of waste in a manner which may detrimentally impact on a water resource.*

**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 Listing Notices GN R. 327; of the EIA Regulations of 07 April 2017.
- **Section B: Description of Receiving Environment** 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 and historic and cultural character of the immediate site and surrounding areas are described herein, whilst applicable legislation, policies and guidelines considered are recognized.
- **Section C: Public Participation** describes the consultation component of this study between the EAP and Interested and Affected Parties (I&AP's) as well as Organs of State. Regulatory requirements of the process are discussed, with a summary of consultation made with State Departments as well as comments and response that are given. Comment periods were afforded to parties, with an initial registration period provided to parties.
- **Section D: Impact Assessment** describes how the proposed project may impact on the geographical and physical, biodiversity, socio-economic and historical and cultural aspects of the receiving environment. Based on such findings as various site surveys, impact assessment, investigation of alternatives and the review of strategic policies 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 E: Recommendation 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: Appendices** list all supportive documents enclosed with this report.

#### **Public Participation Process**

A comprehensive Public Participation Process (PPP) was undertaken to engage stakeholders and Interested and Affected Parties (I&AP's) on the development proposal as part of the Environmental Authorisation application, Waste Management License application, and Water Use License application. I&AP's were informed of the Basic Assessment Process through an advertisement in one (1) local newspaper and three (3) poster notices that will be erected at strategic locations. The surrounding landowners were informed of the proposed project by means of the distribution of comment forms (Background Information Document -BID) and making the Draft Basic Assessment Report (DBAR) available at an accessible location, as well as relevant Organs of State via email notifications. See Appendix E2 for the Public Participation Report.

As outlined in Section 54 of NEMA a Public Participation Plan was formulated that outlined the measures that were to be implemented to adhere to COVID-19 regulations issued in terms of Section 27(2) of the Disaster Management Act, 2002 (Act No. 57 of 2002). Please see Appendix E1 for the detailed plan for Public Participation.

In response to COVID-19 regulations issued in terms of section 27(2) of the Disaster management Act, 2002 (Act no. 57 of 2002), the PPP was undertaken in such a manner to ensure that social distancing will be adhered to, where contact with the public is required, face masks and hand sanitizing will be used as per above regulations.

The DBAR was made available for a period of thirty (30) day from 11 **November 2021** until 11 **December 2021** for commenting as part of the application for a Waste Management License and Environmental Authorisation. The DBAR was made available for a period of sixty (60) days from 11 **November 2021** until **5 February 2022** for commenting as part of the application for a Water Use License. The BAR was electronically made available on Enviroworks website ([www.enviroworks.co.za](http://www.enviroworks.co.za)) and a link to the Enviroworks website was sent via email to all relevant Stakeholders, I&AP's and Organs of State. See Appendix E2 for the Public Participation Report.

### **Specialist Findings**

#### **FAUNAL AND FLORAL SPECIALIST (MEGAN SMITH, 2021)**

##### *Summary and conclusion:*

It is anticipated that the proposed development will have negligible impact on the faunal, terrestrial biodiversity and botanical features identified by the screening tool because the development footprint is extensively disturbed and does not represent likely habitat for any plant or animal species that may be threatened with extinction, as listed by the Screening Tool.

##### *Specific mitigation measures*

- No open fires are allowed on site during the construction.
- Smoking must be restricted to designated smoking areas.
- No dumping of sewage, general- or hazardous waste into a terrestrial or aquatic ecosystem.
- All agricultural activities must remain within the designated footprint.
- The proposed development must remain outside of the delineated watercourses buffer as per the Aquatic Biodiversity Assessment.
- Development and access roads should be restricted to already disturbed areas as far as practically possible.
- It is recommended that an alien invasive species management plan be compiled for the operational phase of the development to ensure that all alien invasive plant species are removed, and their spread is controlled.



- Vehicles used during the construction, operational, and decommissioning phase must be restricted to designated roads.
- Should any threatened species be observed on the development footprint, the species must be relocated in consultation with a faunal specialist.
- All emergency numbers for human-wildlife conflict events must be located at the farm offices.
- At least one construction personnel must a trained snake handler (for example, the Designated Environmental Officer).
- All personnel, during all phases of the construction and operation works, must be inducted to ensure that they are aware of the environmental sensitivities on the site.
- Areas disturbed outside of the footprint must be rehabilitated effectively.
- All management outcomes included in the Avifaunal Compliance Statement must be adhered to.
- Topsoil must be retained and stockpiled for the purposes of rehabilitation.

**AQUATIC BIODIVERSITY SPECIALIST (RIKUS LAMPRECHT, 2021)**

*Summary and conclusion:*

Transformation of an aquatic Critical Biodiversity Area (CBA) and Ecological Support Area (ESA); Disturbance of-/damage to aquatic and semi-aquatic faunal habitats, associated with the Dwarsspruit as well as Contamination/eutrophication of groundwater, were identified and addressed as significant potential long-term aquatic ecological impacts, associated with the proposed development.

These potential long-term aquatic ecological impacts identified for the proposed development, could therefore potentially add moderate to moderately-high cumulative impact to existing negative impacts caused by the sporadic presence of existing agricultural developments, along the localised length of the Dwarsspruit.

It is however the opinion of the specialist, by application of the NEMA Mitigation Hierarchy, that all the identified potential aquatic ecological impacts associated with the proposed development, can be suitably reduced and mitigated to within acceptable residual levels, by implementation of the recommended mitigation measures. It is therefore not anticipated that the proposed development will necessarily add any significant residual aquatic ecological impacts to the surrounding environment or Dwarsspruit, if all the recommended mitigation measures as per this aquatic ecological report are adequately implemented and managed, for both the construction and operational phases of the proposed development.

It is the opinion of the specialist that the proposed development of the eight (8) additional new layer houses and twenty (20) evaporation ponds, should be considered by the competent authority for Environmental Authorisation and approval. All recommended mitigation measures as per this aquatic ecological report must however be adequately implemented and managed for both the construction and operational phases

of the proposed development. All necessary authorisations, permits and licenses must also be obtained prior to the commencement of any construction.

*Specific mitigation measures:*

Construction phase:

- It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.
- It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practicably possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.
- The proposed development construction footprint must be kept as small as practicably possible to reduce the surface impact on surrounding vegetation and no unnecessary/unauthorised footprint expansion into the broader undeveloped landscape surrounding the proposed development footprint, may take place.
- No site construction basecamps may be established within the broader undeveloped landscape surrounding the proposed development footprint.
- Adequately cordon off the proposed development construction footprint area and ensure that no construction activities, -machinery or -equipment operate or impact within the broader undeveloped landscape outside the cordoned off area.
- Adequate operational procedures for construction machinery and equipment must be developed in order to strictly govern and restrict movement of machinery only within the proposed development construction footprint area and to ensure environmentally responsible construction practices and activities.
- Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practicably possible after construction.
- Implement an adequate Alien Invasive Species Management Plan during the construction and operational phases. Such a Management Plan must be compiled by a suitably qualified and experienced ecologist.
- Implement an adequate Stormwater and Erosion Management Plan during the construction phase of the proposed development, to sufficiently manage storm water runoff and clean/dirty water separation on site. This must be done in order to prevent any significant soil erosion in and around the assessment area and subsequently prevent any significant contamination of the Dwarsspruit.

- It is further recommended that small temporary stormwater cut-off berms/trenches be constructed directly adjacent around the upstream sides of the proposed layer house site no 8 and evaporation ponds site no 8 construction footprints. These cut-off berms/trenches must assist with clean/dirty water separation during the construction phase, by diverting and channelling clean surface water runoff from the south, around the construction footprints, towards the Dwarsspruit.
- Hydrocarbon and other chemical storage areas must be adequately bunded in order to be able to contain a minimum of 150 % of the capacity of storage tanks/units.
- Adequate hydrocarbon and other chemical storage, handling, usage and spillage clean-up procedures must be developed and all relevant construction personnel must be sufficiently trained on- and apply these procedures during the entire construction phase.
- Spill kits must be readily available on the construction site. All employees must be adequately trained on the correct procedure and use of the spill kits.

#### Operational Phase

- A Water Use License Application (WULA) must be submitted to the Department of Water and Sanitation, in accordance with the National Water Act (Act 36 of 1998).
- Only the allotted water quantities as per the approved Water Use License are to be extracted.
- Flow meters must be installed in order to enable monitoring and management of water consumption.
- Water consumption figures must be submitted to the Department of Water and Sanitation (DWS) on a regular basis in order to ensure compliance with the allotted water quantities, as per the approved Water Use License.
- Water saving initiatives must be implemented for the operations of the poultry farm.
- Environmentally responsible water use practices and activities must be adopted for the operations of the poultry farm.
- Provide training interventions for the operational staff of the poultry farm, on correct environmentally responsible water use practices and activities for the operations of the poultry farm.

#### **AVIFAUNAL SPECIALIST (MEGAN DIAMOND, 2021)**

##### *Impact statement*

The overall impact of the proposed Bulhoek Farm Chicken House Expansion Project, on the avifaunal community, particularly Secretarybird, is seen as acceptably LOW and therefore, impacts can be mitigated to acceptable levels allowing for the development to be authorised.

##### *Specific mitigation measures*

- Avoid removal of sensitive vegetation types. The recommendations of the botanical study must be strictly implemented, especially as far as limitation of the construction footprint and rehabilitation of disturbed areas is concerned.
- Construction activity should be restricted to the immediate footprint of the infrastructure in areas of HIGH sensitivity.
- All construction activities should be strictly managed according to generally accepted environmental best practice standards, so as to avoid any unnecessary impact on the receiving environment.
- All temporary disturbed areas should be rehabilitated according to the site's rehabilitation plan, following construction

**GEOHYDROLOGICAL SPECIALIST (ROLENE LUBBE, 2021)**

*Summary and conclusion:*

In conclusion, Quantum Foods, Bulhoek Farm, near Swartruggens, North West Province, poses a low risk in terms of groundwater contamination potential and a low risk in surface water contamination potential, but any risks can be decreased by taking the below-mentioned recommendations and mitigation measures mentioned in the report into account.

*Specific mitigation measures*

The following recommendations should be adhered to in terms of mitigation measures:

- Monitoring boreholes should be developed in the area to ensure that groundwater quality can be monitored with regards to the septic tanks and evaporation ponds on site, two (2) boreholes are advised, one (1) upstream from the facility and another downstream of the facility.
- Groundwater from the borehole BULBH2 should be chemically treated prior to human consumption and utilisation;
- Groundwater from BULBH3 should be treated for the total hardness of the water prior to utilisation to protect groundwater pumping equipment.
- Surface water quality should be monitored to ensure that surface water contamination from the facility does not take place;
- A groundwater monitoring plan should be drafted which include an early warning system to highlight contamination, should it occur and should also include a mitigation plan if/when groundwater contamination occurs;
- The water monitoring plan should be revised on a regular basis to incorporate the changes in the water flow regime;
- Laboratory analysis techniques will comply with SABS guidelines. Laboratories must be accredited;
- Data must be stored electronically. It is suggested that a well-known database such as WISH, Aqua base or Access be used. A backup of the data base must be stored in a safe place. Backups should be made every time the database is updated;

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- On the completion of every sampling run a monitoring report must be completed. Included in the report must be time series trends, Piper and Durov diagrams. These will be used to determine if there are any changes in the system. These changes must be flagged and explained in the report;
- The facility should be kept clean and tidy at all times;
- Any waste generated should be disposed of accordingly in registered waste (landfill) sites and not dumped on site or the surrounding area;
- All surfaces that are associated with waste and manure should have impermeable surfaces;
- Stormwater and runoff should be diverted and managed to not come in contact with any waste generated on site;
- Proper waste management during all phases of the activity, as well as storm water management, will have to be strictly enforced and monitored. This is to prevent any litter, rubble, or possible pollution to enter the watercourses downstream of the site and the surrounding environment in general;
- Water drainage should be properly planned and addressed to drain water from the site and prevent any accumulation on site;
- Provision of adequate on-site sewerage management;
- Appoint a qualified Geohydrologist to monitor groundwater, this should be implemented throughout the lifespan on the activity. The quality analysis should be done bi-annually during the operational phase of the evaporation ponds;
- Sewerage and sanitation facilities should be regularly maintained and checked;
- The principle of reduce, re-use and recycle should be followed;
- Avoid the use of concrete lined channels for storm water management as this can increase the speed of water. This in turn increases erosion potential that can cause erosion on site and in channels and increase siltation downstream. If concrete-lined channels are used; they should end in silt traps;
- Regular inspections will be undertaken of any access roads and stormwater management drains for signs of erosion and sedimentation;
- Regularly inspect all vehicles for leaks. Re-fuelling of vehicles must take place on a sealed surface area surrounded by berms to prevent ingress of hydrocarbons into topsoil;
- If any spills occur, they should be immediately cleaned up;
- If water is sprayed on the surfaces for any reason during the construction completion process, utmost care must be taken to ensure the runoff water does not pollute the watercourses;
- A stormwater cut-off drain should be constructed between the facility and the watercourses to ensure that storm water flowing through the facility cannot flow into the watercourses. The water from the cut-off drain must be collected in a sedimentation pond before entering the aquatic system;
- No dirty water runoff from the construction and decommissioning site must be permitted to reach the watercourse;

- Spill kits must be stored on site: In case of accidental spills of oil, petroleum products etc., good oil absorbent materials must be on hand to allow for the quick remediation of the spill. The kits should also be well marked and all personnel should be educated to deal with the spill. Vehicles must be kept in good working order and leaks must be fixed immediately on an oil absorbent mat. The use of a product such as Sunorb is advised;
- Proper toilet facilities must be available during construction and decommissioning. The impact of human waste on the system is immense. Chemical toilets must be provided and should always be well serviced and spaced as per occupational health and safety laws, and placed outside the 1:100 year flood lines;
- The proposed septic tanks and evaporation ponds should be lined with a synthetic liner or any other liner that has been approved by the DWS to ensure that no potential leachate pollutes the groundwater;
- Due to the presence of possible intrusive dolerite/ magnetic features, the septic tanks should be serviced at least weekly;
- A leak monitoring device is advised for the septic tanks to ensure that any leakages are detected early enough to mitigate.
- Should it be decided to irrigate fields with the wash water from the chicken houses, the water will need to be tested to ensure that it meets the minimum requirements. If the wash water quality does not comply with the minimum requirements, water should be treated prior to irrigation.
- Water tanks should be regularly checked for structural integrity on site, if present; and,
- Emergency response plan should be in place for failure of water tank structures, if present.

**AQUIFER YIELD TEST (CHRISTIAAN VERMAAK, 2021)**

*Safe yield estimations:*

**BULBH01**

The safe yield was estimated on the basis of the constant yield test. According to the FC method calculations the sustainable yield for BULBH01 is 0.63 l/s (2 268 l/hr) on a 24-hr pump cycle. A total of 54 432 litres per day is available at the above-mentioned rate and duty cycle. The recommended depth of the pump intake is 80 meters below ground level and the dynamic water level is 62 mbgl.

**BULBH02**

The safe yield was estimated on the basis of the constant yield test. According to the FC method calculations the sustainable yield for BULBH02 is 0.24 l/s (864 l/hr) on a 24-hr pump cycle. A total of 20 736 litres per day is available at the above-mentioned rate and duty cycle. The recommended depth of the pump intake is 50 meters below ground level and the dynamic water level of 37 mbgl should not be exceeded.

**BULBH03**

The safe yield was estimated on the basis of the constant yield test. According to the FC method calculations the sustainable yield for BULBH03 is 0.85 l/s (3060 l/hr) on an 24hr pump cycle. A total of 73 440 litres per day is available at the above-mentioned rate and duty cycle. The recommended depth of the pump intake is 50 meters below ground level and the dynamic water level of 37 mbgl should not be exceeded.

**HERITAGE SPECIALIST (JENNA LAVIN, 2021)**

*Recommendation/conclusion*

As it is not likely that the proposed development will impact significant heritage resources, it is recommended that no further heritage studies are required for this proposed development. It is recommended that the attached Chance Fossil Finds Procedure is implemented during excavation activities.

**PALEONTOLOGICAL SPECIALIST (GIDEON GROENEWALD, 2022)**

*Note that a Paleontological Screening Assessment has been conducted as part of the heritage permit and have been included here as supplementary information.*

*Conclusion*

The development site applicable to the application for proposed expansion of chicken houses from approximately 30 000 to 60 000 chickens, Bulhoek farm, near Swartruggens, Kgetlengrivier Local Municipality, Bojana District Municipality, Northwest Province., is underlain by quartzite and shale of the Pretoria Group, Transvaal Supergroup, with low to high sensitivity for paleontological heritage. No significant fossils are expected in areas underlain by shale and slate of the Strubenkop Formation, but areas underlain by quartzite and shale of the Daspoort Formation have a high paleontological sensitivity.

If excavation expose fossils, it will be very important that a suitably qualified paleontological specialist be appointed to do a Phase 1 PIA and to upgrade the "Chance Find Protocol" document. The CFP document must then be included as part of the EMPr of this project, to record all unexpected fossils associated with the geological formations on site.

*Recommendations:*

*It is recommended that:*

- The EAP and ECO must be informed of the fact that a high Paleontological Sensitivity is allocated to the larger part of the study area underlain by quartzite and shale of the Daspoort Formation.
- Further mitigation for Paleontological Heritage is recommended for this project if excavation of deeper than 0.5m into bedrock of the Daspoort Formation is envisaged (geotechnical reports in EIA procedure).

- A suitably qualified paleontologist must implement and upgrade the “Chance Find Protocol” (CFP) for areas with a high paleontological significance (CFP attached to this report).
- Recommendations must be approved by SAHRA for inclusion in the EMPr of the project.

**AGRO- ECOSYSTEM SPECIALST (DARREN BOUWER, 2021)**

*Summary and conclusion:*

This report describes the Agro-Ecosystem Assessment study of Farm Bulhoek. Northwest contributes about 9% of South Africa’s poultry production (Agriseta, 2020). The Bulhoek farm will contribute to higher employment rates, with approximately 15 job opportunities being made. In terms of land potential, there are moderate potential soils, but due to low rainfall and high evaporation rates, these soils are termed marginal agricultural soils where only specific crops would be able to grow. Furthermore, no new chicken houses are proposed on existing agricultural lands.

Therefore, the small loss in agricultural output is outweighed by the poultry production. In terms of agricultural sensitivity, the proposed development should thus be allowed to proceed at the identified site.

**Additional recommendations of the EAP**

- Where applicable, members from the local community must be employed during the construction phase as well as the operational phase;
- The site must be landscaped once construction has ended to ensure that the aesthetics of the environment is not negatively affected;
- The Environmental Management Plan Report should form part of the conditions of approval of this Application; and,
- An Environmental Control Officer must be appointed to monitor environmental compliance at least once a month during construction.



## BASIC ASSESSMENT CONTENT CHECKLIST

A Basic Assessment Report must contain the following information that is necessary for the Competent Authority to consider and come to a decision on the Application and must include the below mentioned as stipulated in Appendix 1 of GN R. 326 of 07 April 2017.

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;	Section B: Receiving Environment
(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 <b>this</b> 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 A: Activity Information
(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 D: Impact Assessment
(g) a motivation for the preferred site, activity and technology alternative;	Section A: Activity Information
(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of Regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts – (aa) can be reversed;	Section A: Activity Information

BASIC ASSESSMENT REPORT

Content Requirements of a Basic Assessment Process	Section in the Report
<p>(bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;</p> <p>(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;</p> <p>(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</p> <p>(viii) the possible mitigation measures that could be applied and level of residual risk;</p> <p>(ix) the outcome of the site selection matrix;</p> <p>(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and</p> <p>(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;</p>	
<p>(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 –</p> <p>(i) a description of all environmental issues and risk that were identified during the environmental impact assessment process; and</p> <p>(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-</p> <p>(i) cumulative impacts;</p> <p>(ii) the nature, significance and consequences of the impact and risk;</p> <p>(iii) the extent and duration of the impacts and risk occurring;</p> <p>(iv) the probability of the impact and risk occurring;</p> <p>(v) the degree to which the impact and risk can be reversed;</p> <p>(vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and</p> <p>(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 –</p> <p>(i) a summary of the key findings of the environmental impact assessment;</p> <p>(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</p> <p>(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;</p>	Section D: Impact Assessment
<p>(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed</p>	Section D: Impact Assessment

BASIC ASSESSMENT REPORT

Content Requirements of a Basic Assessment Process	Section in the Report
impact management outcomes for the development for inclusion in the EMPr;	
(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: Impact Assessment
(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 D: Impact Assessment
(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	Appendix J: 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 G: 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

### Megan Smith CV

<b>Name:</b>	Megan
<b>Surname:</b>	Smith
<b>Highest qualification:</b>	MSc Biological Sciences (UCT)
<b>Botanical Society of southern Africa</b>	No. 80495
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#### RELEVANT QUALIFICATIONS AND TRAINING

- MSc Biological Sciences (UCT): Specialising in Plant Ecology
- BSc Hons Botany (NMU)
- BSc Environmental Sciences (NMU)
- Scientific writing training led by Dr Pippin Anderson (August 2019)
- Fynbos plant identification training (July 2019)
- CDM calibration training by Renew Technologies (August 2020)
- ISO 14001:2015 Lead auditor training by SACAS (March 2021)
- Hydropedology and wetland delineation course led by WETrust and digital Soils Africa (September 2021)

#### WORK EXPERIENCE

- March 2015 – September 2016: Research assistant determining sustainable cultivation practices of Honeybush (*Cyclopia* spp.) at NMU
- March 2019 – April 2020: Restoration Ecology and Conservation Planning intern at SANBI
- April 2020 – current: Environmental consultant and legal assistant at Enviroworks

#### **Published popular Science article:**

- Smith, M., Rebelo, A.G. 2020. The Amazing Nature Race. Veld and Flora 106: 16-21.
- Smith, M., Rebelo, A., Rebelo, A.G. 2020. Passive restoration of Critically Endangered Cape Flats Sand Fynbos at lower Tokai Park section of Table Mountain National Park, Cape Town. ReStory

- Smith, M., Rebelo, A., Rebelo, A.G. 2020. Saving Critically Endangered Peninsula Granite Fynbos from extinction at Tokai Park, Cape Town. ReStory.
- Smith, M., Rebelo, A.G. 2020. iNaturalist: your portal into nature and becoming a citizen scientist. African Wildlife and Environment 75.

**BASIC ASSESSMENT**

- The proposed development of a thirty-five metre (35m) telecommunication base station and associated infrastructure on Portion 42 of Farm 428, Plettenberg Bay, Western Cape Province, SBA Towers South Africa.
- The proposed development of a twenty-five metre (25m) telecommunication base station and associated infrastructure on Lorraine Farm, the Remainder of Farm 790, Phillipi Western Cape Province, SBA Towers South Africa.
- The proposed development of a desalination or reverse osmosis plant, Tormin Mine, Western Cape Province (in progress), Mineral Sands Resources
- Proposed expansion of chicken houses from approximately 30 000 to 60 000 chickens, Bulhoek Farm, near Swartruggens, North West Province, Quantum Foods (in progress).
- Proposed development of a protea hotel within the Kruger National Park, Phalaborwa, Limpopo Province, South African National Parks (SANParks) (In progress).
- Proposed development of the Lendlovu Lodge, Addo Elephant Park, Eastern Cape Province, SANParks (in progress).
- Basic assessment for the proposed construction of The Klein Mooimaak Rest Camp and upgrade of the Langebaan Entrance Gate, West Coast National Park, Western Cape, SANParks (in progress)

**ENVIRONMENTAL MANAGEMENT PLANS**

- The proposed development of a thirty five metre (35m) telecommunication base station and associated infrastructure on Portion 42 of Farm 428, Plettenberg Bay, Western Cape Province, SBA Towers South Africa.
- The proposed development of a twenty five metre (25m) telecommunication base station and associated infrastructure on Lorraine Farm, the Remainder of Farm 790, Phillipi Western Cape Province, SBA Towers South Africa.
- The proposed development of a desalination or reverse osmosis plant, Tormin Mine, Western Cape Province (in progress), Mineral Sands Resources
- Proposed expansion of chicken houses from approximately 30 000 to 60 000 chickens, Bulhoek Farm, near Swartruggens, North West Province, Quantum Foods (in progress).
- Proposed development of a protea hotel within the Kruger National Park, Phalaborwa, Limpopo Province, South African National Parks (SANParks) (In progress).
- Proposed development of the Lendlovu Lodge, Addo Elephant Park, Eastern Cape Province, SANParks (in progress).

- Registration of the bulk diesel storage and update to the EMPr for the proposed expansion of the Samrand Data Centre, African Data Centres (in progress).

**BOTANICAL AND FAUNAL IMPACT STUDIES**

- Botanical Impact Assessment: Rezoning and the development of fifteen (15) resort units on Portion 12 of the Farm Riet Valley no. 452, Hessequa Local Municipality, Western Cape Province (Faunal Compliance Statement and Botanical Impact Assessment), Hessequa Municipality.
- Botanical survey for the proposed development of a six-point three kilometre (6.3km) long pipeline along Macassar Road, Macassar, Cape Town, Western Cape Province, BVi Consulting Engineers Western Cape.
- Botanical and Faunal Compliance Statement; Proposed expansion of chicken houses from approximately 30 000 to 60 000 chickens, Bulhoek Farm, near Swartruggens, North West Province, Quantum Foods (in progress)
- Botanical and Terrestrial Biodiversity Impact Assessment: Proposed development of the Lendlovu Lodge, Addo Elephant Park, Eastern Cape Province, SANParks (in progress).
- Botanical Site Sensitivity Report and Species Identification: Almenkerk Mast (in progress)
- Protected tree and animal species survey, and compilation of an alien invasion management plan for Ramatlabama Poultry Farm, Mahikeng, Northwest Province, Supreme Poultry (in progress).

**REHABILITATION PLANS**

- Protocols for restoring Critically Endangered Cape Flats Sand Fynbos within lower Tokai Park, Cape Town, South African National Biodiversity Institute)
- Proposed development of a six-point three kilometre (6.3km) long pipeline along Macassar road, Macassar, Cape Town, Western Cape Province, BVi Consulting Engineers Western Cape.
- Rehabilitation implementation plan and consultation services for Tormin Mine, Western Cape Province, Mineral Sands Resources (in progress)
- Rehabilitation Method Statement for 132 KW and 33 KW transmission lines, transmission substation, cabling line trenches, and access roads on Roggeveld Wind Farm, Western Cape, Raubex Infra.
- Rehabilitation progress report :132 kv and 33 kv tranmission lines, transmission substation, cabling line trenches, and access roads on Roggeveld Wind Farm, Western Cape, Raubex Infra.

**ENVIRONMENTAL CONTROL OFFICER (ECO) AND AUDITING**

- Environmental Control Officer:The proposed development of a backup energy centre including diesel storage and generators, on Erf 142504, Diep River, Cape Town, Western Cape Province, African Data Centres.
- Environmental Control Officer:The proposed construction of new and rehabilitation of existing non-motorised transport facilities in the Cape Town CBD, Western Cape Province, BVi Consulting Engineers Western Cape.

- Environmental Compliance Audit for Franki Africa Stock Yard, Durban, KwaZulu Natal Province, Franki Africa.
- The proposed development of a twenty-five metre (25m) telecommunication base station and associated infrastructure on Lorraine Farm, the Remainder of Farm 790, Phillipi Western Cape Province, SBA Towers South Africa
- Environmental Control Officer: The proposed maintenance of the Blue Stone Quarry Wall, Robben Island, Robben Island Musuem.

**MAINTENANCE MANAGEMENT PLANS**

- The proposed maintenance of the Blue Stone Quarry Wall, Robben Island, Robben Island Musuem.

**ENVIRONMENTAL SCREENING**

- Proposed upgrading of the Durbanville Public Transport Interchange, Western Cape, BVi Consulting Engineers Western Cape.
- Proposed the upgrade on national road R40 section from Hazyview (km 0.0) to Maviljan (km 32.1), BVi Consulting Engineers Western Cape.

**ALIEN INVASIVE SPECIES MANAGEMENT PLANS**

- Invasive species monitoring, control and eradication plan, Garden Route District Municipality, Western Cape Province, Garden Route District Municipality.
- Rehabilitation implementation plan and consultation services for Tormin Mine, Western Cape Province, Mineral Sands Resources (in progress)
- Protected tree and animal species survey, and compilation of an alien invasion management plan for Ramatlabama Poultry Farm, Mahikeng, Northwest Province, Supreme Poultry (in progress).

**CLEAN DEVELOPMENT MECHANISM**

- Calibration and advisory services for the CDM Methane Burning Plant at the Coastal Park and Bellville South Landfill Sites, Promethium Carbon (in progress)

## ACRONYMS AND ABBREVIATIONS

<b>BA</b>	-	Basic Assessment
<b>BAR</b>	-	Basic Assessment Report
<b>CBA</b>	-	Critical Biodiversity Area
<b>DEDECT</b>	-	Department of Economic Development, Environment, Conservation and Tourism
<b>DFFE</b>	-	Department of Forestry, Fisheries and the Environment
<b>DEO</b>	-	Designated Environmental Officer
<b>DWS</b>	-	Department of Water and Sanitation
<b>EAP</b>	-	Environmental Assessment Practitioner
<b>ECO</b>	-	Environmental Compliance Officer
<b>EIA</b>	-	Environmental Impact Assessment
<b>EMF</b>	-	Environmental Management Framework
<b>EMP'r</b>	-	Environmental Management Program Report
<b>ESA</b>	-	Ecological Support Area
<b>GN R.</b>	-	Government Notice Regulation
<b>I&amp;AP</b>	-	Interested & Affected Party
<b>IDP</b>	-	Integrated Development Plan
<b>LED</b>	-	Local Economic Development
<b>LM</b>	-	Local Municipality
<b>NEM:PAA</b>	-	National Environmental Management: Protected Areas Act
<b>NEM:WA</b>	-	National Environmental Management: Waste Act
<b>NEMA</b>	-	National Environmental Management Act
<b>NHRA</b>	-	National Heritage Resources Agency
<b>NWA</b>	-	National Water Act
<b>PSDF</b>	-	Provincial Spatial Development Framework
<b>SAHRA</b>	-	South African Heritage Resources Agency
<b>SAPS</b>	-	South African Police Service
<b>SDF</b>	-	Spatial Development Framework



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## 1. SECTION A: ACTIVITY INFORMATION

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 the specialist appointed and attach in Appendix D.

### 1.1 PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

Quantum Foods (The Applicant) appointed Enviroworks, an Independent Environmental Assessment Practitioner (EAP) to undertake the required

- Basic Assessment Process for the intended Waste Management License and Environment Authorisation, and
- Water Use License Application

for the proposed construction of eight (8) chicken layer houses and twenty (20) evaporation ponds, and the usage of three (3) boreholes for a Poultry Farm on:

- Portion 34 of Farm 389
- Portion 35 of Farm 389
- Portion 14 of Farm 389
- Portion 40 of Farm 389
- Portion 21 of Farm 389
- Portion 36 of Farm 389
- Portion 13 of Farm 389

The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartruggens and the city of Rustenburg, North West Province.

The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility. The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments.

In accordance with the information received from the farm manager during the site assessment, the layer houses get washed out twice annually. This process constitutes the following main two steps:

- Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party. The manure is used by an external farmer for agricultural fertiliser.
- The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses.

This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses.

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All wash water emanating from these twice-annual layer house wash-out processes (approximated to use 13 000 litres of water per house per annum), are currently disposed of into the surrounding undeveloped environments. Quantum Foods now proposes the development of twenty (20) lined and impermeable evaporation ponds (each being 25m<sup>2</sup> and 1.2 m deep) to treat the wash water. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent wash water contact with- and potential contamination of the surrounding undeveloped environments.

The chemicals associated with cleaning the chicken houses have been included in Appendix G. These chemicals are Peroxysan, Hyposan, Foamcleaner, Viroclear, Cleanclear and Triazolol. These chemicals are not hazardous, most of them do not present toxic characteristics, are not carcinogenic, has little to non-eco-toxicological effects, hazardous polymerization will not occur, and some are bio-degradable. Therefore, the waste associated from washing the chicken houses can be classified as non-hazardous. This based on the Material Safety Data Sheets for the chemicals.

It is predicted that only dirt (i.e., soil and windblown sand) and dried, non-infectious chicken manure are currently by products of the wash (besides the cleaning agent).

In terms of water usage, the water sources currently used on site, constitute three (3) boreholes that supply approximately 228 742.31 m<sup>3</sup>/month. The three (3) water reservoirs currently present on site, have a capacity of approximately 100 000 litres.

In terms of sewage, the facility has three (3) septic tanks on site that will be serviced as needed (twice a year) by a honeysucker and disposed of accordingly. No new septic tanks will be constructed.

The chicken farm currently operates on the Eskom grid.

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

<b>Potential listed activity as described in the National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA), GN 921 of 2013 as amended by GN 633 on 24 July 2015</b>	<b>Description of project activity</b>
<p><i>Category A: Activity 1</i> -Storage of waste:</p> <p><i>“The storage of general waste in lagoons.”</i></p>	<p>Twenty (20) evaporation ponds will be constructed on site for the treatment of wastewater from washing the chicken houses. The waste associated with the washing of the chicken houses will be manure (general waste).</p>
<p><i>Category A: Activity 12</i> -Construction, expansion or decommissioning of facilities and associated structures and infrastructure:</p> <p><i>“The construction of a facility for a waste management activity listed in Category A of this Schedule (not in isolation to associated waste management activity).”</i></p>	<p>Twenty (20) evaporation ponds will be constructed on site for the treatment of wastewater from washing the chicken houses. The waste associated with the washing of the chicken houses will be manure (general waste).</p>
<b>Potential listed activity as described in the Environmental Assessment Regulations (2014, as amended), GN 706 of 2018 as amended by GN 517 on 11 June 2021 – Listing Notice 1</b>	<b>Description of project activity</b>
<p><i>Activity 40. The expansion and related operation of facilities for the concentration of poultry, excluding chicks younger than 20 days, where the capacity of the facility will be increased by—</i> <i>(ii) more than 5 000 poultry per facility situated outside an urban area</i></p>	<p>Expansion of broiler houses that will accommodate more than 5000 chickens per facility outside an urban area</p>

BASIC ASSESSMENT REPORT

<p><b>Potential listed activity as described in the Environmental Assessment Regulations (2014, as amended), GN 706 of 2018 as amended by GN 517 on 11 June 2021 – Listing Notice 3</b></p>	<p><b>Description of project activity</b></p>
<p><i>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.</i></p> <p style="padding-left: 40px;"><i>North West</i></p> <p style="padding-left: 80px;"><i>iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;</i></p> <p style="padding-left: 80px;"><i>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;</i></p>	<p>Clearance of more 300m<sup>2</sup> of indigenous vegetation within a CBA as identified in the North West Biodiversity Spatial Plan.</p>
<p><b>Potential listed water uses that require a water use license as described in the National Water Act (No. 36 of 1998), GN 19182 as amended by GN 20706 on 6 December 1999 and GN 450 on 2 September 2014</b></p>	<p><b>Description of project activity</b></p>
<p><i>Section 21(a):</i> <i>Taking water from a water resource</i></p>	<p>Three boreholes will be used on site for:</p> <ul style="list-style-type: none"> <li>- The washing of chicken houses</li> <li>- Drinking water and basic sanitation</li> </ul>
<p><i>Section Section 21(g):</i> <i>Disposing of waste in a manner which may detrimentally impact on a water resource.</i></p>	<ul style="list-style-type: none"> <li>• Twenty (20) evaporation ponds will be constructed on site for the treatment of wastewater from washing the chicken houses.</li> <li>• The use of three (3) septic tanks. No new septic tanks will be constructed as part of the expansion.</li> </ul>

## 1.2 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 Appendix 1 (3)(h) of GN 982, Regulation 2014. 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.

**BASIC ASSESSMENT REPORT**

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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.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. 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. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

**a) Site alternatives**

<b>Alternative 1 (Preferred alternative)</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
Bulhoek Farm in North West Province.	25°35' 30,60"S	26°54' 39,37" E
<b>Alternative 2</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
Bulhoek Farm in North West Province	25°35' 30,60"S	26°54' 39,37" E
<b>Alternative 3</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)

**NOTE: The alternative layout is located within the same development site. However, only the layout of the one proposed chicken house is changed in the alternative.**

In the case of linear activities:

**Alternative:**

**Latitude (S):**

**Longitude (E):**

Alternative S1 (preferred)

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

N/A	N/A

Alternative S2 (if any)

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


Alternative S3 (if any)

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


For route alternatives that are longer than 500 m, please provide an addendum with co-ordinates taken every 250 meters 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 of this form.

**b) Lay-out alternatives**

Alternative 1 (Preferred Layout alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The project will comprise of the expansion of the poultry farming operations on Bulhoek Farm by commencing with the following: <ul style="list-style-type: none"> <li>- Eight (8) new layer chicken houses</li> <li>- Twenty (20) evaporation ponds</li> <li>- Usage of three (3) boreholes</li> </ul>	25°35' 30,60"S	26°54' 39,37"E
Alternative 2		
The project will comprise of the expansion of the poultry farming operations on Bulhoek Farm by commencing with the following: <ul style="list-style-type: none"> <li>- Eight (8) new layer chicken houses</li> <li>- Twenty (20) evaporation ponds</li> <li>- Usage of three (3) boreholes</li> </ul>	25°35' 30,60"S	26°54' 39,37"E
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

**NOTE: The alternative layout is located within the same development site. However, only the layout of the one proposed chicken house is changed in the alternative. Please see Appendix C for the alternative layouts.**

**c) Technology alternatives**

Alternative 1 (preferred alternative)
N/A
Alternative 2
Alternative 3

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

Alternative 1 (preferred alternative)
N/A
Alternative 2
Alternative 3

**e) No-go alternative**

The proposed expansion of the poultry farm is to increase the amount of chickens that can be kept on the premises. This will ensure an increase in revenue in the company and the job security of fifteen (15) employees. Furthermore, the Waste Management License is being applied for to construct twenty (20)

evaporation ponds. These evaporation ponds will prevent wash water from the chicken houses entering into the environment.

Should the activities related to the expansion not be authorised not be authorised, the following will occur:

- Loss of the potential job security and job generation for employees
- Loss of potential additional revenue for Quantum Foods
- Potential environmental degradation as a result of untreated wash water running into the environment after washing the current chicken layer houses on the farm.

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

### 1.3 PHYSICAL SIZE OF THE ACTIVITY

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

**Alternative:**

Alternative A1<sup>1</sup> (Preferred Layout Alternative)

**Size of the activity:**

Each pond will be 25 m<sup>2</sup>  
 Each proposed chicken layer house will be either 60 m x 13.5 m or 100 m x 12 m depending on the site

Alternative A2 (if any)

Each pond will be 25 m<sup>2</sup>  
 Each proposed chicken layer house will be either 60 m x 13.5 m or 100 m x 12 m depending on the site

Alternative A3 (if any)

m<sup>2</sup>

or, for linear activities:

**N/A**

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Length of the activity:**

	m
	m
	m

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

**Alternative:**

Alternative A1 (Preferred Layout Alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Size of the site/servitude:**

	8500 m <sup>2</sup>
	8500 m <sup>2</sup>
	m <sup>2</sup>

<sup>1</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

## 1.4 SITE ACCESS

Does ready access to the site exist?

YES	
X	
N/A	

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

Describe the type of access road planned:

The proposed Poultry Farm is an operational Poultry Farm, and infrastructure already exists that will be expanded. Therefore, all of the access roads and associated internal dirt roads already exist.

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.

## 1.5 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);
- 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 and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

**Note:** See Locality map in Appendix A.

## 1.6 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 A 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.

**Note:** See Site/Locality map in Appendix A.

## 1.7 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 DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

**Note:** See Sensitivity Map in Appendix A.

## 1.8 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 B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

**Note:** See site photographs in Appendix B.

## 1.9 FACILITY ILLUSTRATIONS

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C 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.

**Note:** See Facility illustrations in Appendix C.

## 1.10 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 (Act No. 107 of 1998)	The National Environmental Management Act (No 107 of 1998) [NEMA] provides the overarching legislative framework for environmental governance in South Africa. Several Specific National	North West Department of Economic Development, Environment, Conservation & Tourism (DEDECT)	1998

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Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	<p>Environmental Management Acts (SEMAS) have now been promulgated, all of which fall under the overarching NEMA. The point of departure of NEMA is a set of National Environmental Management Principles that inform any subsequent environmental legislation, implementation of that legislation and formulation and implementation of environmental management plans at all levels of government.</p> <p>NEMA gives expression to the Bill of Rights, within the Constitution of South Africa (No 108 of 1996), which states that everyone has a right to a non-threatening (safe and healthy) environment and requires that reasonable measures are applied to protect the environment. This protection encompasses preventing pollution and promoting conservation and environmentally sustainable development. These principles are embraced in NEMA. The proposed development will require an Environmental Authorisation as per the National Environmental Management Act (Act No. 107 of 1998).</p>		
<p>Environmental Impact Assessment Regulations 2014 promulgated in terms of Section 24(5) of NEMA</p>	<p>The proposed project triggers activities that require environmental authorisation as set out in. GN 517 on 11 June 2021. Therefore, an Environmental Authorisation is required.</p>	<p>Development, Environment, Conservation &amp; Tourism (DEDECT)</p>	<p>2021</p>
<p>National Environmental Management: Waste Act (Act No 59 of 2008) (NEM: WA)</p>	<p>On 03 July 2009, under section 19 (1) of the National Environmental Management: Waste Act (No 59 of 2008), a list of waste management activities (GN 921) as amended by GN R633, 24 July 2015 which have, or are likely to have a detrimental effect on the environment were published in November 2013. No person may commence, undertake or conduct a waste management activity listed GN 921 as amended by GN R633, 24 July</p>	<p>Department of Forestry, Fisheries and the Environment (DFFE)</p>	<p>2008</p>

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Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	<p>2015 unless a license is issued in respect of that activity. The National Environmental Management: Waste Act identifies the proposed triggered listed waste activities that the development will trigger.</p> <p>A Waste Management License will be required for the proposed construction of twenty (20) evaporation ponds.</p>		
<p>National Water Act, 1956 (Act No. 54 of 1956)</p>	<p>The proposed development will trigger the National Water Act listed activities in terms of water use on site. This however will be applied for via an online platform with the Department of Water and Sanitation (North West Province). A Water Use License will be required for the usage of the evaporations ponds and three (3) septic tanks and the three (3) boreholes on site.</p>	<p>Department of Water and Sanitation, North West Province (DWS)</p>	<p>1956</p>
<p>National Heritage Resources Act, 1999 (Act No. 25 of 1999);</p>	<p>Section 38 (1) (c) states that a Heritage Permit must be obtained for any development or activity that will change the character of a site (i) exceeding 5 000 m<sup>2</sup> in extent. As such, an application has been submitted to the Competent Authority.</p>	<p>Heritage Western Cape</p>	<p>1999</p>

## 1.11 WASTE, EFFLUENT AND EMISSION

### a) Waste Management

The overall objective of Waste Management is to:

- Formalise waste handling, transfer and disposal activities associated with waste from the Chicken Houses;
- To prevent inappropriate management of waste and associated risk of pollution of the environment;
- To facilitate waste minimisation entailing avoidance, reduction, re-use, recycling or treatment before disposal;
- To streamline waste segregation, storage, disposal and promote resource recovery from waste;
- Contain, control and dispose of waste in accordance with the required waste management practices;
- Define responsibility for waste management at the various levels of operation associated with the operational activities; and,
- To provide a framework for the selection of waste management service providers in line with the cradle to grave principles.

Waste minimisation mitigation measures which are in-line with the aforementioned objectives for the Construction and Operational phases are included within the EMP'r (See Appendix F).

All waste during the Construction phase must be disposed of at the Registered Landfill site (Waterval Landfill).

Solid waste generated on site during the Operational phase such as the manure (approximately 28 tons/day) and carcasses (approximately 100 kg/day). The manure will be used by the neighbouring farms to use as fertilizer and the carcasses will be incinerated off-site.

**b) Liquid Effluent**

Twenty (20) evaporation ponds will be constructed on site for the treatment of wastewater from cleaning (washing) the chicken houses. Each evaporation pond size will be 25 m<sup>2</sup>. Once the evaporation process has been completed, the slurry will be dried and incinerated off-site, whereafter the ashes will be disposed of at a registered landfill site.

The slurry will be dried inside the evaporation ponds as the water evaporates from the pond, therefore the slurry is dried naturally inside the ponds. The drying of the slurry triggers a Waste Management License (WML) activity for the treatment of waste. Please note that the amount of residue (slurry) that will remain is anticipated to be very little to insignificant as chicken manure will be removed from the chicken houses at least three (3) times per week. The chicken houses will only be washed twice a year (once every 6 months).

**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?

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:

A small amount of dust will be generated from construction activities and the vehicle exhaust emission during the construction phase of the project.
--

**1.12 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	<b>Groundwater</b> X	River, stream, dam or lake	Other	The activity will not use water
-----------	-------------	-------------------------	-------------------------------	-------	------------------------------------

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:

<b>228 742.31</b> m <sup>3</sup> /month
<b>YES</b> X

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

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

**Note: The Water Use License is currently still in the pre-application phase. Once the Water Use License has been submitted, proof of the submission will be provided to DEDECT.**

### 1.13 ENERGY EFFICIENCY

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

Electricity on site will be supplied by ESKOM from existing grids.

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

Refer to comment above.

## 2. 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, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

N/A

- Paragraphs 1 - 6 below must be completed for each alternative.

- 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 D. All specialist reports must be contained in Appendix D.

**Property description / physical address:**

<b>Province</b>	Northwest Province
<b>District Municipality</b>	Bojanala Platinum District Municipality
<b>Local Municipality</b>	Kgetlengrivier Local Municipality
<b>Ward Number(s)</b>	6
<b>Farm name and number</b>	Bulhoek Farm
<b>Portion number</b>	Portion 34 of Farm 389 Portion 35 of Farm 389 Portion 14 of Farm 389 Portion 40 of Farm 389 Portion 21 of Farm 389 Portion 36 of Farm 389 Portion 13 of Farm 389
<b>SG Code</b>	TOJP00000000038900034 TOJP00000000038900035 TOJP00000000038900040 TOJP00000000038900014 TOJP00000000038900021 TOJP00000000038900036 TOJP00000000038900013

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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.

### 2.1 GRADIENT OF THE SITE

Indicate the general gradient of the site.

**Alternative S1 (Preferred Layout Alternative):**

<b>Flat</b> <b>X</b>	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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### 2.2 LOCATION IN LANDSCAPE

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

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input checked="" type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>
2.10 At sea	<input type="checkbox"/>				

### 2.3 GROUND WATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

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

## BASIC ASSESSMENT REPORT

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.

### 2.4 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 <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	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.

### 2.5 SURFACE WATER

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

Perennial River		NO X
Non-Perennial River	YES X	
Permanent Wetland		NO X
Seasonal Wetland		NO X
Artificial Wetland		NO X
Estuarine / Lagoonal wetland		NO X

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

The Wetland Delineation Specialist has identified one watercourse at the north of Bulhoek Farm. Please note that if the mitigation measures suggested by the Aquatic Biodiversity Specialist are implemented, the likelihood of impacts occurring on downstream watercourses and the consequence of the impacts will be reduced to low levels. Please note that the proposed chicken layer houses and evaporation ponds have mostly been placed in already disturbed footprints and outside the regulated area of a river. Please refer to the Aquatic Biodiversity Impact Assessment and Risk Matrix Report in Appendix D.

### 2.6 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 <sup>H</sup>
Medium density residential	School	Landfill or waste treatment site

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

If any of the boxes marked with an "N" 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 "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:

	YES X	
Critical Biodiversity Area (as per provincial conservation plan)		
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
Buffer area of the SKA?		NO X

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

## 2.7 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

NO  
X



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Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

N/A

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:

This application is for the expansion of the existing chicken houses (which includes the development of eight (8) new chicken houses) and the development of evaporation ponds on a farm located between the towns of Swartruggens and Rustenburg in the North West Province, west of the Magaliesberg. The farm on which this development is located was previously the subject of an archaeological assessment completed by van Vollenhoven (2007, SAHRIS NID 5563) for proposed laying houses. Van Vollenhoven (2007) notes that the farm was previously a piggery. Van Vollenhoven (2007) notes the presence of a hill located in close proximity to one of the chicken houses, however he goes on to note that "This area may have been suitable for human occupation, but as the development will not directly impact thereon, it was not surveyed." None of the proposed chicken houses that are part of this application are likely to impact on this hill.

A broad history of the area is included in Murimbika (2010) and is referred to here. According to Murimbika (2010), the broader region has also yielded some significant Iron Age Sites such as the Mzonjani facies Broederstroom site (AD 430 to AD 780). According to Murimbika (2010), the broader region was subject to a number of instances of migration and settlement from 450 AD. Evidence indicates that Sotho-Tswana groups migrated in and out of the Magaliesberg region, and such groups are responsible for the many early stone-walled settlements in this region. One of the most documented migrations is the Mfecane (forced migration or scattering) which was a period of widespread chaos and warfare among indigenous ethnic communities in southern Africa during the period between 1815 and about 1840. During this time, the Ndebele under Mzilikazi reached the Magaliesberg region and are responsible for introducing the Doornspruit-type walled settlements that are known from this region. According to Murimbika (2010) this type of stone-walled settlement represents "typical Nguni-Sotho-Tswana acculturation". By the mid-1800's, Voortrekkers had begun to settle in the foothills of the Magaliesberg mountains and in so doing, clashed with Mzilikazi's Ndebele in 1837. These early colonial battles forced the Ndebele north of the Limpopo River and effectively ended the independence of African Chiefdoms in the area.

The Voortrekkers went on to establish the Republic of the Transvaal. Despite the history of the area, Van Vollenhoven (2007) only identified 2 sites in his assessment of this property, neither of which were determined to have any heritage significance. The site identified by Van Vollenhoven (2007) is described as follows: "The building has been demolished. An indication of the foundation as well as loose bricks, stones, and plaster as well as cultural material was identified in the vicinity. The cultural significance of the site is low. It probably is not older than 60 years and is not very unique." Similarly, the other site identified by Van Vollenhoven (2007) is described as "the remains of various structures including houses and other outbuildings associated with an earlier farming phase on the farm". Van Vollenhoven (2007) ascribed no heritage significance to this site, and provided no co-ordinates. Based on the information available for this

area, and on the limited footprints of the proposed development, mostly in areas that have been previously disturbed, it is very unlikely that significant archaeological heritage will be impacted by the proposed development.

According to the SAHRIS Palaeosensitivity Map, the area proposed for development is underlain by sediments of high palaeontological sensitivity. According to the extract from the Council of GeoScience Map 2526 for Rustenburg, the area proposed for development is underlain by sediments of the Daspoort Formation of the Pretoria Group (Vdq).

According to the SAHRIS Fossil Heritage Browser, the Daspoort Formation is known to contain stromatolites and probably also microfossils. Based on the limited nature of the proposed development, it is unlikely that significant stromatolites or microfossils will be impacted by the proposed development however, due to the high levels of palaeontological sensitivity of the underlying formation, it is recommended that the attached Chance Fossil Finds Procedure is implemented during excavation activities.

**As it is not likely that the proposed development will impact significant heritage resources, it is recommended that no further heritage studies are required for this proposed development. It is recommended that the attached Chance Fossil Finds Procedure is implemented during excavation activities.**

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

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

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

**\*Please refer to the Heritage Screening Assessment Report and Heritage Impact Statement in Appendix D which stated that further heritage studies are not required for the proposed development.**

## 2.8 SOCIO-ECONOMIC CHARACTER

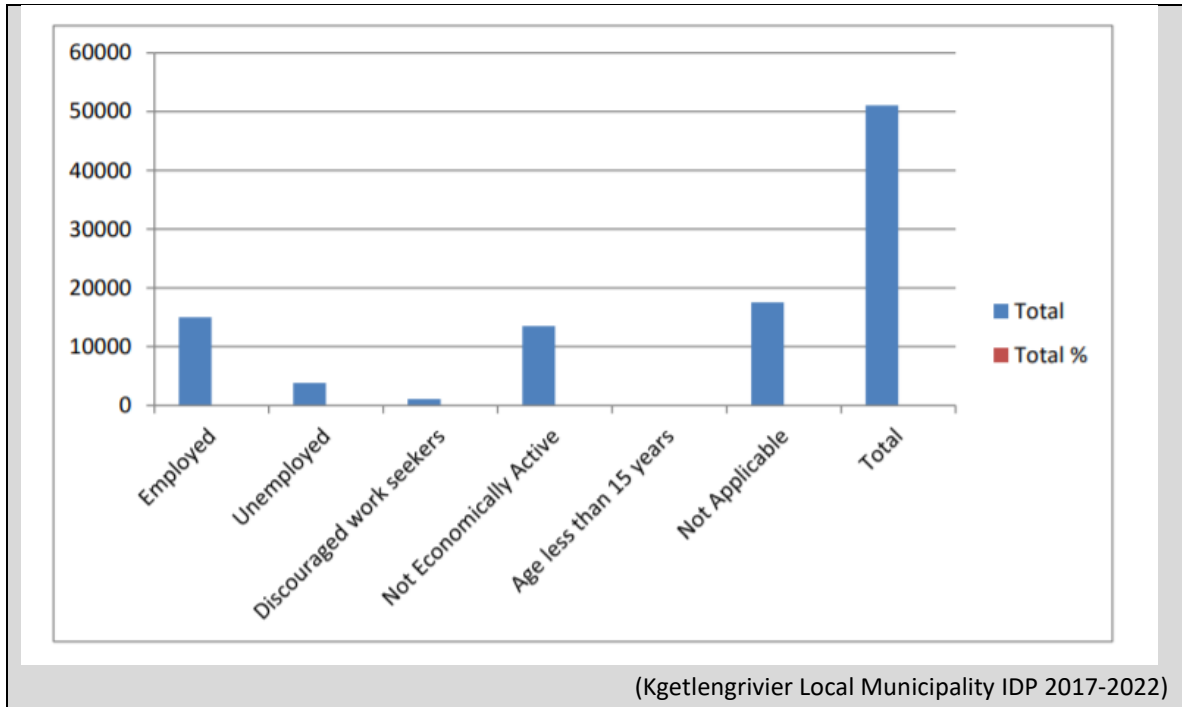
### a) Local Municipality

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

Level of unemployment:

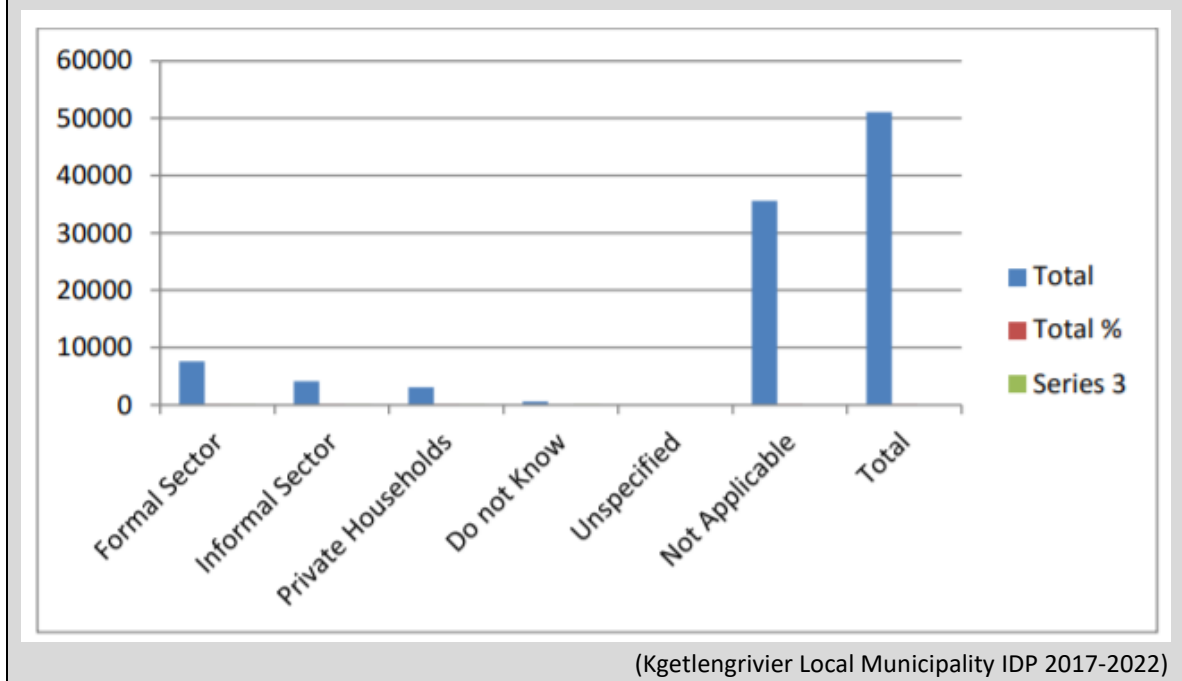
Approximately 3862 (7.57%) of individuals of the community within the Madibeng Local Municipality are unemployed, 1110 (2.17%) are discouraged work seekers and 13501 (26.45%) are not economically active as indicated in the Figure below (IDP of Kgetlengrivier Local Municipality, 2017 - 2022).

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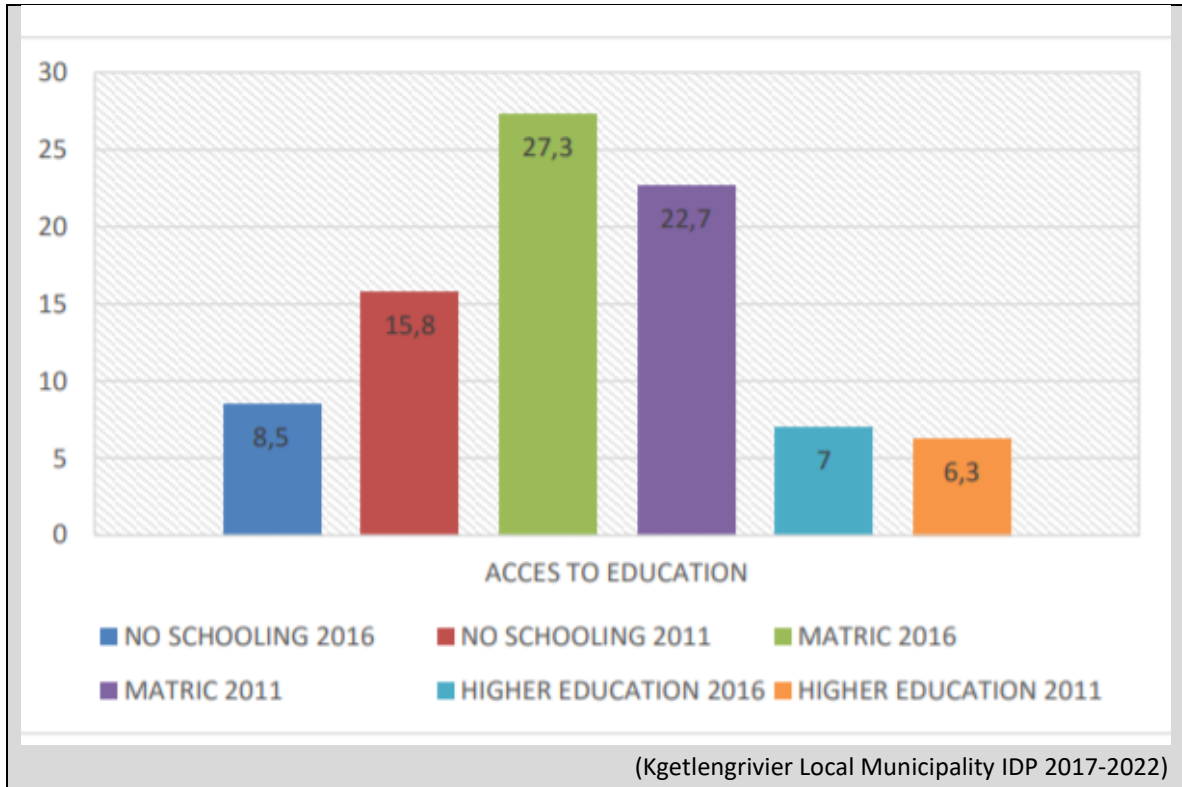
Economic profile of local municipality:

The Economic Profile of Madibeng Local Municipality is summarized below, please note that the economic growth is mainly driven by agriculture, tourism, small scale mining, trade and government services.



Level of education:

The level of Education for the Kgetlengrivier Local Municipality is shown in the Figure below:



## 2.9 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](mailto: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 A 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
---	--

<p><b>Critical Biodiversity Area (CBA)</b> <b>X</b></p>		<p>The proposed upgrading of chicken houses is situated in CBA 1 and ESA 2. Provided that most of the footprints will be either on an already development footprint or disturbed footprint, the loss in ecological processes and biodiversity is not considered significant. Note that there is an aquatic ESA 2 that has been mapped on the southern portion of the property. However, the Aquatic Biodiversity specialist has confirmed that this area does not include a watercourse Note that that the Alternative 2 layout proposes that a chicken houses be developed in the Aquatic CBA 1 and the preferred Alternative (Alternative 1) has excluded the development of a chicken house from the Aquatic CBA 1. Please refer to the Animal and Plant Species Theme Compliance Statement and Aquatic Biodiversity Impact Assessment in Appendix D for further reference.</p>
<p>Please refer to <b>Appendix A – Sensitivity Map</b> for the complete Biodiversity Map.</p>		

**b) 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	0 %	-
Near Natural (includes areas with low to moderate level of alien invasive plants)	30%	A small proportion of the proposed footprint will be constructed on areas that have mostly indigenous vegetation interspersed with alien invasive vegetation. However. Only a small portion (approximately 0,5 hectares) of the total footprint is expected to be developed on a near natural area. Please refer to the Terrestrial Biodiversity and Aquatic Biodiversity studies in Appendix D for further reference.
Degraded (includes areas heavily invaded by alien plants)	50 %	Much of the proposed footprints are in areas that are degraded (e.g., mowed) and dominated by alien invasive species. Please refer to the Terrestrial Biodiversity and Aquatic Biodiversity studies in Appendix D for further reference.
Transformed (includes cultivation, dams, urban, plantation, roads, etc.)	20 %	The area is currently operated as a chicken farm and infrastructure already exists. Most of the proposed evaporation ponds and some of the proposed chicken

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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.).
		layer houses footprints will be constructed on areas already disturbed.

c) 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)		Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)		Estuary	Coastline
	Least Threatened X	YES X		NO X	NO X

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)

The development site was verified to be an operational chicken farm. The majority of the expansion footprint for the chicken houses and development footprint of the evaporation ponds consist of already developed or highly disturbed areas. Within these areas, the vegetation is either regularly mowed or has been removed completely for the purposes of the chicken layer houses. In areas where proposed footprints have not yet been developed or mowed, the vegetation can be described as predominantly dense grassland interspersed with trees (Figure 10). Much of the footprints are homogenous and dominated by *Cynadon dactylon*, *Aloe greatheadii* and various trees including *Combretum zeyheri*, *Peltophorum africanum* and *Vachellia tortilis* ssp. and *Heteracantha*. Dense patches of the weeds such as *Tagetes minuta* and alien invasive species such as *Verbena bonariensis* (Category 1b) are also present at all sites. The homogeneity of the vegetation and the high dominance of *C. dactylon* and *T. minuta* are indicative of disturbance most likely due to the ongoing agricultural activity on the farm. Please refer to the Animal and Plant Species Theme Compliance Statement in Appendix D for further reference.

The Aquatic Biodiversity Specialist has verified a river to the north of the property. Please note that if the mitigation measures suggested by the Aquatic Biodiversity Specialist are implemented and if the Preferred Alternative is developed, the likelihood of impacts occurring on downstream watercourses and the consequence of the impacts will be reduced to low levels. Please refer to the Aquatic Biodiversity Impact Assessment and Risk Matrix Report in Appendix D for further reference.

### 3. SECTION C: PUBLIC PARTICIPATION

#### 3.1 ADVERTISEMENT AND NOTICE

<b>Publication name</b>	Rustenburg Herald	
<b>Date published</b>	12 November 2021	
<b>Site notice position</b>	<b>Latitude</b>	<b>Longitude</b>
	25°40'23.5"S	27°14'38.5"E
	25° 52' 51.87" S	27° 37' 07.38" E
	25° 48' 32.99" S	27° 43' 08.83" E
	25° 53' 26.53" S	27° 36' 44.26" E
<b>Date placed</b>	N/A. Public Participation has not yet taken place.	

Include proof of the placement of the relevant advertisements and notices in Appendix E2.

#### 3.2 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 982

Key stakeholders (**other than organs of state**) identified in terms of Regulation 41(2)(b) of GN 982

<b>Title, Name and Surname</b>	<b>Affiliation / key stakeholder status</b>	<b>Contact details (Tel number or e-mail address)</b>	
Dale Wright	BirdLife South Africa	info@birdlife.org.za	N/A
N/A	Munwatch Ratepayers Association	munwatch1@mweb.co.za	
Ronald Jones	Quantum Foods	Ronald.Jones@quantumfoods.co.za	
Hendrik Redelinghys	Quantum Foods		
Hannes and Lizette Beukes	Aloe Rock Cabin	N/A	0832508244 / 0829532678
N/A	Khululeka Bushveld Guest Farm	N/A	021 710 5800
N/A	Bosveldoord / Windgat saal	info@bosveldoord.co.za	083 700 4168
N/A	Waterval Skietbaan	N/A	+27 (0)78 968 6451
Johan	BRONCO FARGO	Bronco.fargo143@gmail.com	083 357 5814
<b>Neighbouring Landowners</b>			
Landowner 1	RE/11/389	Hand Delivery	

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Landowner 2	20/389	Hand Delivery	
Landowner 3	RE/39/389	Hand Delivery	
Landowner 4	8/393	Hand Delivery	
Landowner 5	9/393	Hand Delivery	
Landowner 6	4/393	Hand Delivery	
Landowner 7	18/393	Hand Delivery	
Landowner 8	39/389	Hand Delivery	
Landowner 10	13/394	Hand Delivery	
Landowner 11	21/393	Hand Delivery	
Landowner 12	3/393	Hand Delivery	
Landowner 13	25/393	Hand Delivery	
Landowner 14	72/394	Hand Delivery	
Landowner 15	20/389	Hand Delivery	
Landowner 16	389	Hand Delivery	
Landowner 17	27/393	Hand Delivery	
Karee Krans Camp	39/393	kareekrans@kareekrans.co.za	

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. 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.

**3.3 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES**

Summary of main issues raised by I&AP's	Summary of response from EAP
Please see the comment and response report in Appendix E2	Please see the comment and response report in Appendix E2

**3.4 COMMENTS AND RESPONSE REPORT**

The practitioner must record all comments received from I&APs and respond to each comment before the Final BAR 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 E2.



### 3.5 AUTHORITY PARTICIPATION

Authorities and Organs of State identified as Key Stakeholders:

Authority /Organ of State	Contact person (Title, Name and Surname)	Tel No	e-mail	Postal address
Bojanala District Municipality	Mr P Shikwane	014 590 4502	pogisos@bojanala.gov.za	P.O Box 1993, Rustenburg, 0300
Kgetlengrivier Local Municipality – Municipal Manager	Thabo Mothogoane			PO Box 66, KOSTER, 0348.
Kgetlengrivier Local Municipality – Ward councillor	A.A Salaledi			014 543 2004
Kgetlengrivier Local Municipality – Environmental Manager	Mr Joseph Mogale			014 543 2004
Department of Economic Development, Environment, Conservation and Tourism (DEDECT) – Case Official	Gethebe Ellis	-	gethebe@nwpg.gov.za	-
Department of Economic Development, Environment, Conservation and Tourism (DEDECT) – Waste Management	Basadi Moselakgomo		<bmoselakgomo@nwpg.gov.za>	
Department of Economic Development, Environment, Conservation and Tourism (DEDECT)	Mrs P Krisjan	018 389 5929	pkrisjan@nwpg.gov.za	Private Bag X2039, Mmabatho, 2735
Department of Economic Development, Environment, Conservation and Tourism (DEDECT)	Ms Ouma Skosana	018 389 5156	oskosana@nwpg.gov.za	Private Bag X2039, Mmabatho, 2735
Department of Economic Development, Environment,	M. Mosiane	018 388 2826	mosianem@nwpg.gov.za	Private Bag X90, Mmabatho, 2735

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Conservation and Tourism (DEDECT) – North West Provincial Heritage Resource Authority				
Department of Economic Development, Environment, Conservation and Tourism (DEDECT) – Agriculture North West	Ms Bonolo Mohlakoana	081 389 5111	bmohlakoana@nwpg.gov.za	Private Bag X2039, Mmabatho ,2735
Department of Economic Development, Environment, Conservation and Tourism (DEDECT)	Gethebe Ellis	-	gethebe@nwpg.gov.za	-
Department of Water and Sanitation North West Province	Marakalla Tebogo Johannah		marakallaj@dws.gov.za	
ESKOM	-	012 318 9503	CustomerServices@eskom.co.za	Corner Luddorf and Murray street Brits
South African Heritage Resources Agency (SAHRA)	-	021 462 4502	info@sahra.org.za	PO Box 4637 Cape Town, 8000

Include proof that the Authorities and Organs of State received written notification of the proposed activities as Appendix E2.

### 3.6 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&AP's must be included as Appendix E2.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E2

## 4. SECTION D: 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 (if applicable).

#### 4.1 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.

Impact Assessment Methodology	
<p>For each potential impact, the EXTENT (spatial scale), MAGNITUDE, DURATION (time scale), PROBABILITY of occurrence, IRREPLACEABLE loss of resources and the REVERSIBILITY of potential impacts must be assessed by the specialist by using the results of their specialist studies. 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 scales to be used to assess these variables and to define the rating categories are tabulated in Table 1 and Table 2 below.</p>	
Evaluation component	Ranking scale and description (criteria)
MAGNITUDE of NEGATIVE IMPACT (at the indicated spatial scale)	<p>10 - <b>Very high</b>: Bio-physical and/or social functions and/or processes might be <i>severely</i> altered.                      8 - <b>High</b>: Bio-physical and/or social functions and/or processes might be <i>considerably</i> altered.                      6 - <b>Medium</b>: Bio-physical and/or social functions and/or processes might be <i>notably</i> altered.                      4 - <b>Low</b> : Bio-physical and/or social functions and/or processes might be <i>slightly</i> altered.                      2 - <b>Very Low</b>: Bio-physical and/or social functions and/or processes might be <i>negligibly</i> altered.                      0 - <b>Zero</b>: 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 - <b>Very high (positive)</b>: Bio-physical and/or social functions and/or processes might be <i>substantially</i> enhanced.                      8 - <b>High (positive)</b>: Bio-physical and/or social functions and/or processes might be <i>considerab</i> enhanced.                      6 - <b>Medium (positive)</b>: Bio-physical and/or social functions and/or processes might be <i>notab</i> enhanced.                      4 - <b>Low (positive)</b>: Bio-physical and/or social functions and/or processes might be <i>slight</i> enhanced.                      2 - <b>Very Low (positive)</b>: Bio-physical and/or social functions and/or processes might be <i>negligib</i> enhanced.                      0 - <b>Zero (positive)</b>: Bio-physical and/or social functions and/or processes will remain <i>unaltered</i>.</p>
DURATION	<p>5 - <b>Permanent</b>                      4 - <b>Long term</b>: Impact ceases after operational phase/life of the activity &gt; 60 years.                      3 - <b>Medium term</b>: Impact might occur during the operational phase/life of the activity – 60 years                      2 - <b>Short term</b>: Impact might occur during the construction phase - &lt; 3 years.                      1 - <b>Immediate</b></p>
EXTENT (or spatial scale/influence of impact)	<p>5 - <b>International</b>: Beyond National boundaries.                      4 - <b>National</b>: Beyond Provincial boundaries and within National boundaries.                      3 - <b>Regional</b>: Beyond 5 km of the proposed development and within Provincial boundaries.                      2 - <b>Local</b>: Within 5 km of the proposed development.                      1 - <b>Site-specific</b>: On site or within 100 m of the site boundary.                      0 - <b>None</b></p>

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<b>IRREPLACEABLE</b> loss of resources	<p>5 – <b>Definite</b> loss of irreplaceable resources.</p> <p>4 – <b>High</b> potential for loss of irreplaceable resources.</p> <p>3 – <b>Moderate</b> potential for loss of irreplaceable resources.</p> <p>2 – <b>Low</b> potential for loss of irreplaceable resources.</p> <p>1 – <b>Very low</b> potential for loss of irreplaceable resources.</p> <p>0 – <b>None</b></p>
<b>REVERSIBILITY</b> of impact	<p>5 – Impact <b>cannot</b> be reversed.</p> <p>4 – <b>Low</b> potential that impact might be reversed.</p> <p>3 – <b>Moderate</b> potential that impact might be reversed.</p> <p>2 – <b>High</b> potential that impact might be reversed.</p> <p>1 – Impact <b>will be</b> reversible.</p> <p>0 – No impact.</p>
<b>PROBABILITY</b> (of occurrence)	<p>5 - <b>Definite</b>: &gt;95% chance of the potential impact occurring.</p> <p>4 - <b>High probability</b>: 75% - 95% chance of the potential impact occurring.</p> <p>3 - <b>Medium probability</b>: 25% - 75% chance of the potential impact occurring.</p> <p>2 - <b>Low probability</b>: 5% - 25% chance of the potential impact occurring.</p> <p>1 - <b>Improbable</b>: &lt;5% chance of the potential impact occurring.</p>
<b>Evaluation component</b>	<b>Ranking scale and description (criteria)</b>
<b>CUMULATIVE</b> impacts	<p><b>High</b>: 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><b>Medium</b>: 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><b>Low</b>: The activity is localised and might have a negligible cumulative impact.</p> <p><b>None</b>: No cumulative impact on the environment.</p>

**Table 1: Evaluation components, rankings scales and description (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 below.

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A complete impact assessment in terms of Regulation 19(3) of GN 982 must be included as Appendix I.

**Note: Appendix I has not been included because the full assessment has been included in Section 4.2, 4.3, and 4.4.**

## 4.2 POTENTIAL IMPACTS DURING PLANNING, DESIGN AND CONSTRUCTION PHASES

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Nature of impact:</b> Negative impact of haphazard placement of infrastructure on the environment.	<b>Activity:</b> 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.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	1	2	1	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	3	3	3	3	-
<b>Reversibility:</b>	3	3	3	3	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	39	20	39	20	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• 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;</li> <li>• The planning for layout must be done in consultation on-site with the Environmental Control Officer (ECO);</li> <li>• The Contractor may not deface, paint, damage or mark any natural features situated in or around the site for survey or other purposes;</li> <li>• The Contractor must ensure that all construction personnel, labourers and equipment always remain within the demarcated construction sites;</li> <li>• No servicing of vehicles may be permitted on site, unless for emergency purposes;</li> <li>• Stockpiles may not be situated in such a manner that they obstruct pathways;</li> <li>• Location of storage area must consider prevailing winds, distance to water bodies and general on-site topography;</li> <li>• Place infrastructure as far as possible on sites that have already been transformed;</li> <li>• Facilities may not be used as staff accommodation;</li> <li>• The Contractor's camp layout must consider availability of access for deliveries and services and any future works;</li> <li>• The Contractor's camp must be of sufficient size to accommodate the needs of all sub-contractors that may work on the project; and,</li> <li>• The Contractor must implement the following as required:</li> </ul>				N/A

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Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>○ Suitable sanitation facilities, adequate for the number of staff on site (1 for every 15 personnel and 1 for each gender); and,</li> <li>○ Facilities for solid waste collection.</li> <li>○</li> </ul>				
<b>Nature of impact:</b> Topsoil removal and soil erosion.	<b>Activity:</b> The clearing of topsoil and excavation for the establishment of building foundations may result in the destruction of fertile topsoil and loss of vegetation cover associated with the development.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	2	2	2	-
<b>Reversibility:</b>	2	2	2	2	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	33	18	33	18	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	L	L	L	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Remove topsoil approximately 300mm deep from establishment area and stockpile areas;</li> <li>• Topsoil stockpiles to be kept free from weeds;</li> <li>• Construction should take place during the low flow months (winter), as much as possible in order to minimise the risk to the hydrology of the system and to prevent excessive sediment and debris being washed downstream;</li> <li>• Correct site reinstatement and landscaping following any disturbances will abate channel and gully formation;</li> <li>• Disturbed areas, that will not form part of the operational footprint, but which were disturbed as part of the construction activities, should be rehabilitated and re-vegetated using site-appropriate indigenous vegetation and/or seed mixes;</li> <li>• Sheet runoff from cleared areas, paved surfaces and access roads needs to be curtailed;</li> <li>• 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;</li> <li>• Topsoil need to be stored on designated areas only. This need to be planned and indicated in the site-layout plan;</li> <li>• Ensure that topsoil is not mixed with subsoil and/or any other excavated material;</li> <li>• Provide containment and settlement facilities for effluents from concrete mixing and washing facilities;</li> <li>• 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;</li> </ul>				N/A

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Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>• Provide spill containment facilities for hazardous materials like fuel and oil;</li> <li>• Place containers of hazardous materials like fossil fuels and oil in designated areas (near existing buildings) and ensure that the entire surface is temporarily cemented and provided with low retaining walls right around the designated areas, flat drip trays can also be used, since they are movable;</li> <li>• Topsoil must be used in all rehabilitation activities and may not be compacted to ensure that its plant support capacity remain of high quality;</li> <li>• Rehabilitate denude areas especially slopes with appropriate species and erosion protection measures i.e. geotextiles, rocks, topsoil mixtures as per specifications;</li> <li>• Stabilise and revegetate all areas bare of vegetation as soon as possible;</li> <li>• Monitor the entire site for signs of erosion throughout the construction and operational phases of the project;</li> <li>• All erosion features must be rehabilitated as soon as possible;</li> <li>• Implement erosion control measures where necessary;</li> <li>• Implement suitable erosion prevention measures during the operation, construction and decommissioning phase.</li> <li>• Make use of surface erosion measures within disturbed areas to avoid erosion in times of high risk (e.g. rain season and time of high wind speeds);</li> <li>• Stormwater management along any roadways and paths to reduce gully erosion formation;</li> <li>• Stormwater management should prevent excessive sediment to be carried into the watercourses;                             <ul style="list-style-type: none"> <li>• Soil disturbance must be kept to a minimum within and around the development footprint.</li> </ul> </li> </ul>				
<b>Nature of impact:</b> Surface and groundwater contamination due to construction activities such as the use of hazardous materials on site e.g., fuel and oil.	<b>Activity:</b> 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.
<b>Magnitude:</b>	6	4	6	4	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	3	2	3	2	-
<b>Probability:</b>	4	3	4	3	-
<b>Total SP:</b>	60	30	60	30	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	L	L	L	L	-



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Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Concrete must 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);</li> <li>• Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces;</li> <li>• Material Safety Data Sheets (MSDSs) must 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;</li> <li>• All spillage must be cleaned up immediately after they have occurred;</li> <li>• Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bio-remediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site;</li> <li>• 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;</li> <li>• Vehicles and machinery must be regularly serviced to avoid leakages;</li> <li>• At the work site the contractor must maintain strict surveillance to ensure that no spills occur;</li> <li>• No water courses may be used to clean equipment, or for bathing. All cleaning operations must take place off site at a location where wastewater can be disposed of correctly;</li> <li>• 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;</li> <li>• Fuel and chemical storage must 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;</li> <li>• Construction vehicles must be inspected every morning before work commence to ensure that no leakages do occur;</li> <li>• All personnel must receive induction on how to report spillages, contain them and treat them accordingly;</li> <li>• Spill kits must be available at each working station;</li> <li>• Drip trays must be placed beneath all construction equipment that are stationary on site or within the site camp;</li> <li>• 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;</li> <li>• Any waste generated should be disposed of accordingly in registered waste (landfill) sites and not dumped on site or the surrounding area;</li> <li>• Regularly inspect all vehicles for leaks. Re-fuelling of vehicles must take place on a sealed surface area surrounded by berms to prevent ingress of hydrocarbons into topsoil;</li> <li>• If any spills occur, they should be immediately cleaned up.</li> </ul>				N/A
<b>Nature of impact:</b>	<p><b>Activity:</b> The presence of personnel and construction operations on site will increase the likelihood of littering and the dumping of solid waste.</p>				No construction phase impacts are associated with the no-go

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Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
Handling of general waste materials on the development site.					alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	6	4	6	4	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	0	2	0	-
<b>Reversibility:</b>	1	0	1	0	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	36	14	36	14	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• An adequate number of scavenger proof litter bins are to be placed throughout the site. Two (2) 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;</li> <li>• Waste sorting and separation must form part of the environmental induction and awareness programme, to encourage personnel to collect wastepaper, glass and metal waste separately;</li> <li>• Keep all work sites including storage areas, offices and workshops neat and tidy;</li> <li>• Dedicate a demarcated and signposted storage area on site for the collection of construction waste;</li> <li>• All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site as mentioned in the Basic Assessment Report;</li> <li>• Care must be taken to ensure that no waste fall off disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised;</li> <li>• 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;</li> <li>• Littering by construction workers shall not be permitted;</li> <li>• 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;</li> <li>• Minimise waste by sorting wastes into recyclable and non-recyclable waste;</li> <li>• 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;</li> <li>• A bi-weekly (twice a week) litter patrol of the entire site shall be conducted by the designated Environmental Site Agent (ESA);</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>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;</li> <li>A register must be kept of the quantities of waste disposed and proof of disposal must be available at the site office;</li> <li>The facility should be kept clean and tidy at all times;</li> <li>Any waste generated should be disposed of accordingly in registered waste (landfill) sites and not dumped on site or the surrounding area;</li> <li>All surfaces that are associated with waste and manure should have impermeable surfaces;</li> <li>Proper waste management during all phases of the activity, as well as storm water management, will have to be strictly enforced and monitored. This is to prevent any litter, rubble, or possible pollution to enter the watercourses downstream of the site and the surrounding environment in general.</li> </ul>				
<b>Nature of impact:</b> Increased risk of veld fires.	<b>Activity:</b> Due to the presence of construction personnel in natural areas, fires can occur if not managed to the correct standard. Fire may occur due to the presence and use of hazardous and flammable materials on site.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	6	4	6	4	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	2	2	2	2	-
<b>Irreplaceable:</b>	3	2	3	2	-
<b>Reversibility:</b>	3	2	3	2	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	48	24	48	24	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>The Contractor shall take all reasonable and precautionary steps to ensure that fires are not started as a consequence of the activities on site;</li> <li>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;</li> <li>Workers must be adequately trained in the handling of firefighting equipment, and can include but not limited to:                             <ul style="list-style-type: none"> <li>Regular fire prevention talks and drills; and,</li> <li>Posting of regular reminders to staff.</li> </ul> </li> <li>No open fires are permitted anywhere on site;</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>Do not store any fuel or chemicals under trees;</li> <li>Place containers of hazardous materials like fossil fuels and oil in designated areas (near existing buildings) and ensure that the entire surface is temporarily cemented and provided with low retaining walls right around the designated areas, flat drip trays can also be used, since they are movable;</li> <li>Ensure that a good fire break around these designated areas for hazardous materials and around the footprint of the proposed project by removing grass with a scraper;</li> <li>Do not store gas and liquid fuel in the same storage area (Hazardous substances to be stored in accordance with SANS);</li> <li>Any fires that occur on site shall be reported to the ECO immediately and then to the relevant Authorities;</li> <li>In the event of a fire, the Contractor shall immediately employ such plant and personnel as is at his disposal and take all necessary action to prevent the spread of the fire and bring it under control;</li> <li>Do not permit any smoking within 3 m of any fuel or chemical storage area, or refuelling area. A designated smoking area must be established on site; and,</li> <li>All construction vehicles must be fitted with at least one fire extinguisher.</li> </ul>				
<b>Nature of impact:</b> Traffic impacts associated with the movement of construction vehicles on site.	<b>Activity:</b> 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.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	1	2	1	-
<b>Reversibility:</b>	2	1	2	1	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	33	14	33	14	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>During construction create designated turning areas and strictly prohibit any off-road driving or parking of vehicles and machinery outside designated areas;</li> <li>Monitor the establishment of (Alien) Invasive Species and remove as soon as detected, before regenerative material can be formed;</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>Abnormal loads and machinery should avoid movement over gravel roads during and immediately after rainfall events, to limit destruction of road surfaces and sedimentation of downhill rivers/streams;</li> <li>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;</li> <li>Construction vehicles may not leave the designated roads and tracks, whilst U-Turns are prohibited on all roads;</li> <li>Signage is always to be placed on vehicles;</li> <li>All construction vehicles must adhere to construction sites and avoid off road to minimise impact on vegetation and soil;</li> <li>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,</li> <li>Construction-related vehicles and machinery may not operate on site without reflective safety signage, car-top lights and reflective personnel gear.</li> </ul>				
<b>Nature of impact:</b> Direct impact on vegetation and fauna during construction and loss of species.	<b>Activity:</b> The construction of several permanent structures on site will result in the loss of vegetation and other ecological processes due to foundation excavation.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	1	1	1	1	-
<b>Reversibility:</b>	1	1	1	1	-
<b>Probability:</b>	4	2	4	2	-
<b>Total SP:</b>	36	14	36	14	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Abnormal loads must be timed to avoid times of year when traffic volumes are likely to be higher, as would All disturbed and compacted soils need to be ripped, re-profiled and reseeded and/or replanted with indigenous species;</li> <li>Areas to be cleared should be agreed and demarcated before the start of the clearing operations;</li> <li>Stabilise all erosion features on site;</li> <li>No personnel are allowed to collect, harvest or destroy any species of flora or fauna on or off the site, unless specifically earmarked for removal;</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>Stormwater management should maintain the natural flow regime as far as possible;</li> <li>Proper waste management during all phases of the activity, as well as storm water management, will have to be strictly enforced and monitored. This is to prevent any litter, rubble or possible pollution to enter the watercourses downstream of the site and the surrounding environment in general;</li> <li>Maintain the buffer around the Dwarsspruit river as indicated in the Aquatic Biodiversity Impact Assessment.</li> <li>No open fires are allowed on site during the construction.</li> <li>Smoking must be restricted to designated smoking areas.</li> <li>The proposed development must remain outside of the delineated watercourses buffer as per the Aquatic Biodiversity Assessment.</li> <li>Development and access roads should be restricted to already disturbed areas as far as practically possible.</li> <li>Vehicles used during the construction, operational, and decommissioning phase must be restricted to designated roads.</li> <li>Should any threatened species be observed on the development footprint, the species must be relocated in consultation with a faunal specialist.</li> <li>All emergency numbers for human-wildlife conflict events must be located at the farm offices.</li> <li>At least one construction personnel must a trained snake handler (for example, the Designated Environmental Officer).</li> <li>All personnel, during all phases of the construction and operation works, must be inducted to ensure that they are aware of the environmental sensitivities on the site.</li> <li>Areas disturbed outside of the footprint must be rehabilitated effectively.</li> <li>All management outcomes included in the Avifaunal Compliance Statement must be adhered to.</li> <li>Topsoil must be retained and stockpiled for the purposes of rehabilitation.</li> </ul>				
<b>Nature of impact:</b> Direct impact on avifauna during construction and loss of species.	<b>Activity:</b> Permanent displacement and mortality of local populations of Red List species caused by habitat loss, disturbance, entrapment and drowning.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	6	2	6	2	-
<b>Duration:</b>	4	4	4	4	-
<b>Extent:</b>	2	2	2	2	-
<b>Irreplaceable:</b>	1	1	1	1	-
<b>Reversibility:</b>	1	1	1	1	-
<b>Probability:</b>	2	1	2	1	-
<b>Total SP:</b>	28	20	28	20	-
<b>Significance rating:</b>	L	L	L	L	-

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Avoid removal of sensitive vegetation types. The recommendations of the botanical study must be strictly implemented, especially as far as limitation of the construction footprint and rehabilitation of disturbed areas is concerned.</li> <li>Construction activity should be restricted to the immediate footprint of the infrastructure in areas of HIGH sensitivity.</li> <li>All construction activities should be strictly managed according to generally accepted environmental best practice standards, so as to avoid any unnecessary impact on the receiving environment.</li> <li>All temporary disturbed areas should be rehabilitated according to the site's rehabilitation plan, following construction.</li> <li>Access to the remainder of the site should be strictly controlled to prevent unnecessary disturbance of SCC (Species of Conservation concern)</li> <li>Measures to control noise should be applied according to current best practice in the industry.</li> <li>The installation of mesh netting (over the evaporation ponds) will ensure that birds are excluded from the ponds.</li> <li>Mesh netting must be maintained and replaced as and when required.</li> </ul>				N/A
<b>Nature of impact:</b> Dust nuisance generated by the operation of machinery and vehicles.	<b>Activity:</b> The construction activities of the proposed project could potentially result in fugitive dust emissions due to vegetation removal. Dust could spread into the surrounding areas. The significance of this potential impact will likely; however, be only temporary.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	1	1	1	1	-
<b>Reversibility:</b>	2	2	2	2	-
<b>Probability:</b>	4	3	4	3	-
<b>Total SP:</b>	40	24	40	24	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	L	L	L	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Implement suitable dust management and prevention measures during the construction phase;</li> <li>Ensure all vehicles remain on designated roads and avoid the opening of detour or by-pass tracks;</li> <li>Vehicles delivering or removing soil must be covered to reduce spills and windblown dust;</li> <li>Any complaints received by the Contractor regarding dust will be recorded and communicated to the ECO;</li> <li>Obtain a permanent tanker throughout the construction period to have access to "wet" roads when necessary; and,</li> <li>Areas around the proposed project footprint must be adequately rehabilitated to prevent significant dust emissions.</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Nature of impact:</b> Transformation of an aquatic Critical Biodiversity Area (CBA) and Ecological Support Area (ESA), associated with the Dwarsspruit as a result of construction activities	<b>Activity:</b> Transformation of an aquatic Critical Biodiversity Area (CBA) and Ecological Support Area (ESA), associated with the Dwarsspruit as a result of construction activities				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	2	2	4	2	-
<b>Duration:</b>	4	3	4	3	-
<b>Extent:</b>	2	2	2	2	-
<b>Irreplaceable:</b>	3	2	4	2	-
<b>Reversibility:</b>	4	2	4	2	-
<b>Probability:</b>	5	2	5	2	-
<b>Total SP:</b>	75	24	90	24	-
<b>Significance rating:</b>	MH	L	MH	L	-
<b>Cumulative impact:</b>	M	L	M	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</li> <li>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practicably possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</li> <li>The proposed development construction footprint must be kept as small as practicably possible to reduce the surface impact on surrounding vegetation and no unnecessary/unauthorised footprint expansion into the broader undeveloped landscape surrounding the proposed development footprint, may take place.</li> <li>No site construction basecamps may be established within the broader undeveloped landscape surrounding the proposed development footprint.</li> <li>Adequately cordon off the proposed development construction footprint area and ensure that no construction activities, -machinery or -equipment operate or impact within the broader undeveloped landscape outside the cordoned off area.</li> <li>Adequate operational procedures for construction machinery and equipment must be developed in order to strictly govern and restrict movement of machinery only within the proposed development construction footprint area and to ensure environmentally responsible construction practices and activities.</li> </ul>				N/A



BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>Disturbed areas within and immediately surrounding the proposed development</li> </ul>				
<b>Nature of impact:</b> Disturbance of-/damage to aquatic and semi-aquatic faunal habitats, associated with the Dwarsspruit as a result of construction activities	<b>Activity:</b> Disturbance of-/damage to aquatic and semi-aquatic faunal habitats, associated with the Dwarsspruit				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	2	2	4	4	-
<b>Duration:</b>	4	2	4	4	-
<b>Extent:</b>	2	1	2	2	-
<b>Irreplaceable:</b>	3	1	3	4	-
<b>Reversibility:</b>	3	1	3	4	-
<b>Probability:</b>	4	2	5	5	-
<b>Total SP:</b>	56	11	80	90	-
<b>Significance rating:</b>	M	L	MH	L	-
<b>Cumulative impact:</b>	M	L	M	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</li> <li>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practicably possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</li> <li>The proposed development construction footprint must be kept as small as practicably possible to reduce the surface impact on surrounding vegetation and no unnecessary/unauthorised footprint expansion into the broader undeveloped landscape surrounding the proposed development footprint, may take place.</li> <li>No site construction basecamps may be established within the broader undeveloped landscape surrounding the proposed development footprint.</li> <li>Adequately cordon off the proposed development construction footprint area and ensure that no construction activities, -machinery or -equipment operate or impact within the broader undeveloped landscape outside the cordoned off area.</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Nature of impact:</b> Contamination of the Dwarsspruit by surface material erosion.	<b>Activity:</b> Contamination of the Dwarsspruit by surface material erosion.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	1	2	1	-
<b>Extent:</b>	3	1	3	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	3	1	3	1	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	48	11	48	11	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	L	L	L	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Implement an adequate Stormwater and Erosion Management Plan during the construction phase of the proposed development, to sufficiently manage storm water runoff and clean/dirty water separation on site. This must be done in order to prevent any significant soil erosion in and around the assessment area and subsequently prevent any significant contamination of the Dwarsspruit.</li> <li>It is further recommended that small temporary stormwater cut-off berms/trenches be constructed directly adjacent around the upstream sides of the proposed layer house site no 8 and evaporation ponds site no 8 construction footprints. These cut-off berms/trenches must assist with clean/dirty water separation during the construction phase, by diverting and channelling clean surface water runoff from the south, around the construction footprints, towards the Dwarsspruit.</li> <li>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</li> <li>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practicably possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</li> <li>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practicably possible after construction.</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Nature of impact:</b> Contamination of the Dwarsspruit by dust generation and emissions	<b>Activity:</b> The construction activities associated with the proposed development, could potentially result in slight fugitive dust emissions, due to vegetation clearance and movement of machinery and equipment. Generated dust could potentially spread into the surrounding undeveloped landscape and contaminate the Dwarsspruit.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	2	2	2	2	-
<b>Duration:</b>	2	1	2	1	-
<b>Extent:</b>	3	1	3	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	3	1	3	1	-
<b>Probability:</b>	2	2	2	2	-
<b>Total SP:</b>	26	11	26	11	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	L	L	L	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Implement suitable dust management and prevention measures during the construction phase of the proposed development.</li> <li>Construction areas and roads to be sufficiently wetted down during the construction phase, in order to prevent significant fugitive dust emissions.</li> <li>Adequate operational procedures for machinery and equipment must be developed to strictly govern and restrict movement of machinery, in order to avoid unnecessary fugitive dust emissions and ensure environmentally responsible construction practices and activities.</li> <li>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</li> <li>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practicably possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</li> <li>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practicably possible after construction.</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Nature of impact:</b> Terrestrial and aquatic alien invasive species establishment within the Dwarsspruit	<b>Activity:</b> The proposed development area could be prone to alien invasive species establishment, due to surface disturbance and vegetation clearance caused by construction activities. The presence of the Dwarsspruit directly adjacent north of the assessment area, could further also potentially act as a significant transport/distribution vector for numerous terrestrial and aquatic alien invasive species into the broader region.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	4	1	4	1	-
<b>Extent:</b>	3	1	3	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	2	1	2	1	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	48	10	48	10	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	L	L	L	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</li> <li>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practicably possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</li> <li>It is recommended that all individuals of the identified alien invasive species must be actively eradicated from the Dwarsspruit, in accordance with the National Environmental Management: Biodiversity Act (Act 10 of 2004); Alien and Invasive Species Regulations, 2014. Removed materials must also be adequately disposed of.</li> <li>Implement an adequate Alien Invasive Species Management Plan during the construction and operational phases. Such a Management Plan must be compiled by a suitably qualified and experienced ecologist.</li> <li>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practicably possible after construction</li> </ul>				N/A
<b>Nature of impact:</b> Impeding and contamination of the flow regime of the	<b>Activity:</b> Impeding and contamination of the flow regime of the Dwarsspruit, within the associated local and broader quaternary surface water catchment- and drainage area				No construction phase impacts are associated with the no-go

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Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
Dwarsspruit, within the associated local and broader quaternary surface water catchment- and drainage area					alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	6	2	-
<b>Duration:</b>	2	1	4	1	-
<b>Extent:</b>	3	1	3	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	4	1	2	1	-
<b>Probability:</b>	3	2	5	2	-
<b>Total SP:</b>	48	12	90	10	-
<b>Significance rating:</b>	L	L	MH	L	-
<b>Cumulative impact:</b>	L	L	M	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Implement an adequate Stormwater and Erosion Management Plan during the construction phase of the proposed development, to sufficiently manage storm water runoff and clean/dirty water separation on site. This must be done in order to prevent any significant soil erosion in and around the assessment area and subsequently prevent any significant contamination of the Dwarsspruit.</li> <li>It is further recommended that small temporary stormwater cut-off berms/trenches be constructed directly adjacent around the upstream sides of the proposed layer house site no 8 and evaporation ponds site no 8 construction footprints. These cut-off berms/trenches must assist with clean/dirty water separation during the construction phase, by diverting and channelling clean surface water runoff from the south, around the construction footprints, towards the Dwarsspruit.</li> <li>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</li> <li>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practicably possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</li> <li>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practicably possible after construction.</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Nature of impact:</b> Contamination/eutrophication of the Dwarsspruit by wash water from the layer house site no 8 wash-out process, within the associated local and broader quaternary surface water catchment- and drainage area	<b>Activity:</b> Contamination/eutrophication of the Dwarsspruit by wash water from the layer house site no 8 wash-out process, within the associated local and broader quaternary surface water catchment- and drainage area.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	6	2	-
<b>Duration:</b>	4	1	4	1	-
<b>Extent:</b>	3	1	3	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	2	1	2	1	-
<b>Probability:</b>	3	2	5	2	-
<b>Total SP:</b>	48	10	90	10	-
<b>Significance rating:</b>	L	L	MH	L	-
<b>Cumulative impact:</b>	L	L	M	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</li> <li>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practicably possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</li> <li>It is recommended that all individuals of the identified alien invasive species must be actively eradicated from the Dwarsspruit, in accordance with the National Environmental Management: Biodiversity Act (Act 10 of 2004); Alien and Invasive Species Regulations, 2014. Removed materials must also be adequately disposed of.</li> <li>Implement an adequate Alien Invasive Species Management Plan during the construction and operational phases. Such a Management Plan must be compiled by a suitably qualified and experienced ecologist.</li> <li>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practicably possible after construction</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Nature of impact:</b> Contamination/eutrophication of groundwater by wash water from the twenty (20) chicken layer houses wash-out processes	<b>Activity:</b> Contamination/eutrophication of groundwater by wash water from the twenty (20) chicken layer houses wash-out processes				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	4	1	4	1	-
<b>Extent:</b>	3	1	3	1	-
<b>Irreplaceable:</b>	4	1	4	1	-
<b>Reversibility:</b>	4	2	4	2	-
<b>Probability:</b>	4	2	4	2	-
<b>Total SP:</b>	84	13	84	13	-
<b>Significance rating:</b>	MH	L	MH	L	-
<b>Cumulative impact:</b>	MH	L	MH	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>The proposed evaporation ponds must be sufficiently lined, in accordance with the relevant minimum norms and standards, in order to prevent undesired seepages or leaks into the groundwater.</li> <li>The integrity of the lining must be re-evaluated and maintained annually in order to ensure its continued functionality.</li> <li>Adequate leakage detection and prevention systems must be installed in order to detect any potential leakages and subsequent contamination of groundwater.</li> <li>It is presumed and reasonably expected that the design specifications and size parameters of the proposed evaporation ponds will ensure adequate containment and subsequent evaporation of the required maximum potential volumes of wash water twice annually, even during significant rainfall events. Under no circumstances may overflow or spillage of wash water and subsequent potential contamination of the surrounding undeveloped environment and Dwarsspruit, take place.</li> <li>It is however recommended that only environmentally friendly biodegradable chemical products may be used for the twice-annual evaporation pond wash-out process, as far as practicably possible</li> </ul>				N/A
<b>Nature of impact:</b> Infiltration of effluent and chemicals that have the potential to change the quality of the groundwater.	<b>Activity:</b> Dolerite found in the study area can create a potential impact where a preferential path can be created where the potential leachate from the evaporation ponds and septic tanks from the facility can pollute the groundwater by changing the quality of the groundwater. This dolerite intrusions can bake the surrounding geology and cause the geology to weather which increases the permeability for contaminants.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	6	4	6	4	-
<b>Duration:</b>	4	2	4	2	-

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Extent:</b>	2	2	2	2	-
<b>Irreplaceable:</b>	3	2	3	2	-
<b>Reversibility:</b>	3	1	3	1	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	54	33	54	33	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>The facility should be kept clean and tidy at all times.</li> <li>Any waste generated should be disposed of accordingly in registered waste (landfill) sites and not dumped on site or the surrounding area.</li> <li>All surfaces that are associated with waste should have impermeable surfaces.</li> <li>Stormwater and runoff should be diverted and managed to not come in contact with any waste generated on site.</li> </ul>				N/A
<b>Nature of impact:</b> Infiltration of effluent and chemicals that have the potential to change the quality of the groundwater.	<b>Activity:</b> Infiltration of effluent and chemicals that have the potential to change the quality of the groundwater. Taking in to account the site-specific properties such as: <ul style="list-style-type: none"> <li>Recharge (average);</li> <li>Rainfall (average rainfall MAP: 600 - 750 mm);</li> <li>Temperature (average annual temperature of 18.30°C);</li> <li>Topography and drainage (Northern drainage – towards topographical depression – Dwarspruit);</li> <li>Water table (deep water table of 15 - 30 mbgl. – swl BULBH1 37.2 mbgl);</li> <li>Fractured weathered aquifer (very high permeability);</li> <li>Groundwater vulnerability (Insignificant to very low), and,</li> <li>Groundwater quality (good quality with respect to EC Values).</li> </ul>				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	4	4	4	-
<b>Duration:</b>	4	3	4	3	-
<b>Extent:</b>	2	2	2	2	-
<b>Irreplaceable:</b>	2	2	2	2	-
<b>Reversibility:</b>	2	2	2	2	-
<b>Probability:</b>	2	1	2	1	-
<b>Total SP:</b>	28	13	28	13	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>The facility should be kept clean and tidy at all times.</li> </ul>				N/A



BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>Any waste generated should be disposed of accordingly in registered waste (landfill) sites and not dumped on site or the surrounding area.</li> <li>All surfaces that are associated with waste should have impermeable surfaces.</li> <li>Stormwater and runoff should be diverted and managed to not come in contact with any waste generated on site.</li> <li>All evaporation ponds and septic tanks associated with the facility should be lined with a synthetic liner or any other liner approved by the Department of Water and Sanitation (DWS) to ensure that any possible leachate from the evaporation ponds and septic tanks do not pollute the groundwater.</li> <li>Due to the presence of possible intrusive dolerite/ magnetic features, the proposed facility should have at least two (2) monitoring boreholes, one (1) upstream from the facility and the other downstream of the facility, on site to monitor that leakage from the evaporation ponds and septic tanks do not occur. The groundwater quality should be assessed bi-annually during the operation of the evaporation ponds.</li> </ul>				
<b>Nature of impact:</b> Occupational health and safety.	<b>Activity:</b> During the construction phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	10	4	10	4	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	2	2	2	2	-
<b>Irreplaceable:</b>	4	4	4	4	-
<b>Reversibility:</b>	4	4	4	4	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	66	32	66	32	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Ensure that PPE is available to personnel;</li> <li>Adhere to the Occupational Health and Safety Act;</li> <li>Keep the first aid kit stocked;</li> <li>Issue all workers with necessary health and safety items;</li> <li>Potentially hazardous areas must be demarcated with danger tape;</li> <li>Appropriate signage must be placed to caution employees and contractors not to enter certain structures without authorisation;</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>Regular safety inspections must be conducted to ensure that participants are equipped with necessary safety equipment; and,</li> <li>All construction personnel are to wear hard hats and reflector jackets at all times.</li> </ul>				
<b>Nature of impact:</b> Construction activities may have a positive impact on the local and regional socio-economic conditions.	<b>Activity:</b> During the construction phase of the project the construction process may have a positive impact on the local and regional socio-economic conditions by means of job creation.				The proposed development will not take place and as such no socio-economic benefits will be derived from this construction period. The impact will thus be a negative one.
<b>Magnitude:</b>	4	N/A	4	N/A	-
<b>Duration:</b>	2		2		-
<b>Extent:</b>	2		2		-
<b>Irreplaceable:</b>	0		0		-
<b>Reversibility:</b>	0		0		-
<b>Probability:</b>	4		4		-
<b>Total SP:</b>	32		32		-
<b>Significance rating:</b>	L (+)		L (+)		-
<b>Cumulative impact:</b>	-		-		-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Where reasonable and practical the contractors appointed by the proponent should appoint local contractors and implement a "Local First" policy, especially for semi and low-skilled job categories;</li> <li>Where feasible, efforts should be made to employ local contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria;</li> <li>Trench bedding material (sand) should be sought locally;</li> <li>Prior to construction phase the proponent and its contractors should meet with representatives' from the Local Municipality to establish the existence of a skills database for the area. If such a database exists it should be made available to the contractors appointed for the construction phase; and,</li> <li>The recruitment selection process should seek to promote gender equality and the employment of women where possible, particularly for less labour-intensive work such as supervision.</li> </ul>				N/A
<b>Nature of impact:</b> Damage and destruction of vertebrate fossils during excavation activities (Heritage).	<b>Activity:</b> 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. However, based on the previously disturbed nature of the property as				No construction phase impacts are associated with the no-go alternative thus no

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	well as the limited nature and scale of the proposed development, it is unlikely that the proposed development will negatively impact on significant archaeological or palaeontological heritage.				assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	2	2	2	-
<b>Reversibility:</b>	4	4	4	4	-
<b>Probability:</b>	2	1	2	1	-
<b>Total SP:</b>	26	11	26	11	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• designated Environmental Control Officer (ECO) for the project, or the foreman or site agent in the absence of the ECO. It is recommended that copies of the attached poster and procedure are printed out and displayed at the site office so that workmen may familiarise themselves with them and are thereby prepared in the event that accidental discovery of fossil material takes place;</li> <li>• One person in the staff must be identified and appointed as responsible for the implementation of the protocol in instances of accidental fossil discovery and must report to the ECO or site agent. If the ECO or site agent is not present on site, then the responsible person on site should follow the protocol correctly in order to not jeopardize the conservation and well-being of the fossil material;</li> <li>• The procedure to follow if it is likely that the material identified is a fossil should be followed:               <ul style="list-style-type: none"> <li>○ The ECO or site agent must ensure that all work ceases immediately in the vicinity of the area where the fossil or fossils have been found;</li> <li>○ The ECO or site agent must inform SAHRA of the find immediately. This information must include photographs of the findings and GPS co-ordinates; and,</li> <li>○ The ECO or site agent must compile a Preliminary Report and fill in the attached Fossil Discoveries: Preliminary Record Form within 24 hours without removing the fossil from its original position. The Preliminary Report records basic information about the find including:                   <ul style="list-style-type: none"> <li>▪ The date;</li> <li>▪ A description of the discovery;</li> <li>▪ A description of the fossil and its context (e.g. position and depth of find);</li> <li>▪ Where and how the find has been stored;</li> <li>▪ Photographs to accompany the preliminary report (the more the better):                       <ul style="list-style-type: none"> <li>-A scale must be used;</li> <li>-Photos of location from several angles;</li> </ul> </li> </ul> </li> </ul> </li> </ul>				N/A

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>-Photos of vertical section should be provided;</li> <li>-Digital images of hole showing vertical section (side); and,</li> <li>-Digital images of fossil or fossils.</li> <li>○ Exposed finds must be stabilised where they are unstable and the site capped, e.g. with a plastic sheet or sandbags. This protection should allow for the later excavation of the finds with due scientific care and diligence. SAHRA can advise on the most appropriate method for stabilisation;</li> <li>○ If the find cannot be stabilised, the fossil may be collected with extreme care by the ECO or the site agent and put aside and protected until SAHRA advises on further action. Finds collected in this way must be safely and securely stored in tissue paper and an appropriate box; and,</li> <li>○ Care must be taken to remove all fossil material and any breakage of fossil material must be avoided at all costs.</li> <li>● No work may continue in the vicinity of the find until SAHRA has indicated, in writing, that it is appropriate to proceed;</li> <li>● 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;</li> <li>● Excavations must be limited to the footprint area;</li> <li>● 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"> <li>○ All construction in the immediate 50 m vicinity radius of the site must cease;</li> <li>○ The Heritage Practitioner must be informed as soon as possible;</li> <li>○ In the event of obvious human remains SAPS must be notified;</li> <li>○ Mitigation measures (such as refilling, etc.) must not be attempted; and,</li> <li>○ The area in a 50 m radius of the find must be cordoned off with hazard tape.</li> </ul> </li> <li>● Public access must be limited, and the area must be placed under guard.</li> </ul>				
<b>Nature of impact:</b> Noise nuisance generated by construction works, vehicles and personnel.	<b>Activity:</b> The operating of vehicles and machinery on site results in the generation of noise disturbing users of the surrounding area.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	2	2	2	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	2	2	2	-
<b>Reversibility:</b>	1	1	1	1	-

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Probability:</b>	4	3	4	3	-
<b>Total SP:</b>	32	24	32	24	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>the same time;</li> <li>Fit machinery with silencers;</li> <li>All stationary noisy equipment such as compressors and pumps must be contained behind acoustic covers, screens or sheds where possible;</li> <li>The regular inspection and maintenance of equipment must be undertaken to ensure that all components function optimally;</li> <li>Vehicles must avoid the use of their reverse gear as far as possible to avoid the sounding of sirens. This must not be considered for temporary access routes as disturbance of adjacent vegetation is to be avoided;</li> <li>Where recurrent use of machinery is frequent, machines must be shut down during intermediate periods;</li> <li>Unless otherwise specified by the DEO, normal working hours will apply (i.e. from 07H00–17H00, Mondays to Fridays);</li> <li>Ensure that employees and staff conduct themselves in an acceptable manner while on site, both during working hours and after hours; and,</li> <li>Vehicles are to abide by speed restrictions on access roads and limit trip generation to minimise disturbance to surrounding land users.</li> </ul>				N/A

**4.3 POTENTIAL IMPACTS DURING OPERATIONAL PHASE**

Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Nature of impact:</b> Handling of general waste on the development site. Including waste emissions and pollution.	<b>Activity:</b> Waste will be generated on site, if not disposed of correctly it will become a nuisance within the area				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	4	4	4	4	-

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Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Extent:</b>	2	1	2	1	-
<b>Irreplaceable:</b>	2	1	2	1	-
<b>Reversibility:</b>	1	1	1	1	-
<b>Probability:</b>	4	3	4	3	-
<b>Total SP:</b>	52	27	52	27	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Waste must not be stored on site in excess of ninety (90) days;</li> <li>• All recyclable waste should be recycled and general waste must be incinerated;</li> <li>• An adequate number of scavenger proof litter bins are to be placed throughout the site. Two (2) 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;</li> <li>• Waste sorting and separation must form part of the environmental induction and awareness programme, to encourage personnel to collect wastepaper, glass and metal waste separately;</li> <li>• Keep all work sites including storage areas, offices and workshops neat and tidy;</li> <li>• Dedicate a demarcated and signposted storage area on site for the collection of waste;</li> <li>• Care must be taken to ensure that no waste fall off disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised;</li> <li>• 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;</li> <li>• Littering by personnel shall not be permitted;</li> <li>• Minimise waste by sorting wastes into recyclable and non-recyclable waste;</li> <li>• A register must be kept of the quantities of waste disposed and proof of disposal must be available at the site office;</li> <li>• Carcasses should be disposed of in the appropriate manner and should not be left in the open or disposed of in the veld or an open pit where they may infect wild birds;</li> <li>• Care should be taken to prevent any wastewater affluent or organic material, waste or litter to enter the soil and any surface or groundwater;</li> <li>• All waste, including general waste and organic waste, should be contained and transported carefully to the facilities (incinerator or landfill);</li> <li>• Manure should be removed regularly from chicken houses, preferably once or twice a week or as frequent as practically possible;</li> <li>• No manure should be left exposed outside for prolonged periods of time;</li> <li>• Appropriate ventilation should be maintained inside the lay houses</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Nature of impact:</b> Surface and groundwater contamination from the Evaporation Ponds and Septic tanks.	<b>Activity:</b> The possibility that the surface water and groundwater to become contaminated due to the infrastructure associated with the Chicken Houses, therefore the Evaporation Ponds and septic tanks – The Evaporation Ponds will be lined with a HDPE liner.				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	4	4	4	-
<b>Duration:</b>	4	2	4	2	-
<b>Extent:</b>	2	2	2	2	-
<b>Irreplaceable:</b>	2	2	2	2	-
<b>Reversibility:</b>	3	2	3	2	-
<b>Probability:</b>	2	2	2	2	-
<b>Total SP:</b>	30	24	30	24	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>The facility should be kept clean and tidy at all times;</li> <li>Any waste generated should be disposed of accordingly in registered waste (landfill) sites and not dumped on site or the surrounding area;</li> <li>All surfaces that are associated with waste and manure should have impermeable surfaces;</li> <li>Stormwater and runoff should be diverted and managed to not come in contact with any waste generated on site;</li> <li>Proper waste management during all phases of the activity, as well as storm water management, will have to be strictly enforced and monitored. This is to prevent any litter, rubble, or possible pollution to enter the watercourses downstream of the site and the surrounding environment in general;</li> <li>Water drainage should be properly planned and addressed to drain water from the site and prevent any accumulation on site;</li> <li>Provision of adequate on-site sewerage management;</li> <li>Groundwater from BULBH2 should be treated chemically prior to be used for human consumption;</li> <li>Groundwater from BULBH3 should be treated for the total hardness of the water prior to utilisation to protect groundwater pumping equipment etc.;</li> <li>Appoint a qualified Geohydrologist to monitor groundwater quality, this should be implemented throughout the lifespan on the activity. The quality analysis should be done bi-annually during the operational phase of the evaporation ponds;</li> <li>Sewerage and sanitation facilities should be regularly maintained and checked;</li> <li>The septic tanks and evaporation ponds should be lined with a synthetic liner or any other liner that has been approved by the DWS to ensure that no potential leachate pollutes the groundwater;</li> </ul>				N/A

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Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>• Due to the presence of possible intrusive dolerite/ magnetic features, the septic tanks should be serviced at least weekly.</li> <li>• The facility should have at least two (2) monitoring boreholes, one (1) upstream from the facility and the other downstream of the facility, on site to monitor that leakage from the septic tanks and evaporation ponds do not occur.</li> <li>• A leak monitoring device is advised for each septic tank on site to ensure that any leakages are detected early enough to mitigate.</li> <li>• The principle of reduce, re-use and recycle should be followed;</li> <li>• Avoid the use of concrete lined channels for storm water management as this can increase the speed of water. This in turn increases erosion potential that can cause erosion on site and in channels and increase siltation downstream. If concrete-lined channels are used; they should end in silt traps;</li> <li>• Regular inspections will be undertaken of any access roads and stormwater management drains for signs of erosion and sedimentation;                             <ul style="list-style-type: none"> <li>• Regularly inspect all vehicles for leaks. Re-fuelling of vehicles must take place on a sealed surface area surrounded by berms to prevent ingress of hydrocarbons into the ground.</li> </ul> </li> </ul>				
<b>Nature of impact:</b> Increased risk of veld fires.	<b>Activity:</b> Due to the presence of personnel in natural areas, as well as hazardous substances present on site, 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.
<b>Magnitude:</b>	10	6	10	6	-
<b>Duration:</b>	4	2	4	2	-
<b>Extent:</b>	2	2	2	2	-
<b>Irreplaceable:</b>	3	2	3	2	-
<b>Reversibility:</b>	4	3	4	3	-
<b>Probability:</b>	4	2	4	2	-
<b>Total SP:</b>	92	30	92	30	-
<b>Significance rating:</b>	MH	L	MH	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• The Applicant shall take all reasonable and precautionary steps to ensure that fires are not started due to the activities on site;</li> <li>• Ensure the work site 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;</li> <li>• Workers must be adequately trained in the handling of firefighting equipment, and can include but not limited to:                             <ul style="list-style-type: none"> <li>○ Regular fire prevention talks and drills; and,</li> </ul> </li> </ul>				N/A



BASIC ASSESSMENT REPORT

Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>○ Posting of regular reminders to staff.</li> <li>• No open fires are permitted anywhere on site;</li> <li>• Do not store any fuel or chemicals under trees;</li> <li>• Do not store gas and liquid fuel in the same storage area (Hazardous substances to be stored in accordance with SANS);</li> <li>• Any fires that occur on site shall be reported to the ECO immediately and then to the relevant Authorities;</li> <li>• In the event of a fire, the project manager shall immediately employ such plant and personnel as is at his disposal and take all necessary action to prevent the spread of the fire and bring it under control;</li> <li>• Ensure that the facility has both a Fire Plan and Emergency Response Plan;</li> <li>• Ensure that the Fire Plan and Emergency Response Plan for the proposed facility are strictly adhered to and followed in case of an emergency;</li> <li>• Do not permit any smoking within 3 meters of any fuel or chemical storage area, or refuelling area. A designated smoking area must be established on site;</li> <li>• Fire breaks of approximately twenty (20) meters should be maintained around the infrastructure, the remaining vegetation of the farm should be left undisturbed.</li> </ul>				
<b>Nature of impact:</b> Over-extraction of groundwater from the three boreholes	<b>Activity:</b> Over-extraction of groundwater from the three boreholes.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	3	1	3	1	-
<b>Extent:</b>	3	1	3	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	3	1	3	1	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	48	10	48	10	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	L	L	L	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• The safe yields as mentioned in the Borehole Yield Test report must be strictly adhered to.</li> <li>• Only the allotted water quantities as per the approved Water Use License are to be extracted.</li> <li>• Flow meters must be installed in order to enable monitoring and management of water consumption.</li> <li>• Water consumption figures must be submitted to the Department of Water and Sanitation (DWS) on a regular basis in order to ensure compliance with the allotted water quantities, as per the approved Water Use License.</li> </ul>				N/A

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Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>Water saving initiatives must be implemented for the operations of the poultry farm.</li> <li>Environmentally responsible water use practices and activities must be adopted for the operations of the poultry farm.</li> <li>Provide training interventions for the operational staff of the poultry farm, on correct environmentally responsible water use practices and activities for the operations of the poultry farm</li> </ul>				
<b>Nature of impact:</b> Infestation of the area with alien and invasive species.	<b>Activity:</b> The eradication and spread control of alien invasive species.				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	4	4	4	-
<b>Duration:</b>	4	4	4	4	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	2	2	2	-
<b>Reversibility:</b>	1	1	1	1	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	36	22	36	22	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>It is recommended that an alien invasive species management plan be compiled and implemented for the operational phase of the development to ensure that all alien invasive plant species are removed, and their spread is controlled.</li> </ul>				N/A
<b>Nature of impact:</b> Handling Of Layer Chickens, Culling and Vaccinations.	<b>Activity:</b> The handling of layer chickens on the proposed chicken farm is of uttermost importance to ensure that unnecessary injuries and illnesses to the chickens do not occur.				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	4	4	4	-
<b>Duration:</b>	4	4	4	4	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	2	2	2	-
<b>Reversibility:</b>	1	1	1	1	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	36	24	36	24	-

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Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Make use of the necessary VCD's as well as the SAPA code of practice;</li> <li>• Hens should always have ad lib feed;</li> <li>• Ensure the correct number of birds are culled;</li> <li>• Only catch one hen at a time and catch both legs;</li> <li>• Never carry more than 2 birds in one hand;</li> <li>• When finished culling for the day, ensure all mortalities and eggs are removed from cages;</li> <li>• Always cull from the pyramid the furthest from the auger motor;</li> <li>• Trained staff must make use of the appropriate euthanasia procedures when necessary;</li> <li>• Vaccinate early in the morning;</li> <li>• Use suitable borehole water (cool water) or distilled water (no chlorinated water to be used);</li> <li>• The vaccine may not get into contact with metal;</li> <li>• Do not mix vaccine in direct sunlight;</li> <li>• Use pH neutralizer such as chlorex blue or aviblue (10 minutes prior to vaccination);</li> <li>• Once the vaccine has been mixed, it is active for only 45 minutes;</li> <li>• Ensure that all the hens get the same amount of exposure to vaccine;</li> <li>• Control the ventilation so that there won't be any drag;</li> <li>• The vaccination program must be updated after vaccinating;</li> <li>• Don't spray birds on cold days ;</li> <li>• Bayticol and Carbadust are good products for fighting lice; and,</li> <li>• Control ventilation.</li> </ul>				N/A
<b>Nature of impact:</b> Biosecurity measures and pest & rodent control.	<b>Activity:</b> When Biosecurity measures are not up to standard famine an illness can occur on site; for a chicken layer farm this would be a detrimental impact if not managed correctly.				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	4	4	4	-
<b>Duration:</b>	4	4	4	4	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	2	2	2	-
<b>Reversibility:</b>	1	1	1	1	-

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Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	36	24	36	24	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• All visitors must sign the visitors' book;</li> <li>• Don't go from old flocks to young flocks or disease suspected flocks to healthy flocks;</li> <li>• Maintenance must disinfect tools used at other farms;</li> <li>• Only egg and feed trucks allowed on site;</li> <li>• No poultry products from other farms allowed on the farm;</li> <li>• Cull and POL (Point of Lay) workers may not mix;</li> <li>• Only accept clean packaging material;</li> <li>• No wild birds allowing in the sheds; make sure the sheds are bird proof;</li> <li>• Make use of the correct PPE;</li> <li>• Foot baths must be replaced when necessary and used when entering and exiting the sheds;</li> <li>• No personal clothes are allowed on site;</li> <li>• Always change clothes when entering or exiting the site;</li> <li>• Changing rooms must be kept neat and tidy;</li> <li>• Always ensure correct number of hens per cage;</li> <li>• The following rodent mitigation measures may be implemented:               <ul style="list-style-type: none"> <li>○ Grain bait in bait stations;</li> <li>○ Tracking powder;</li> <li>○ Liquid bait, mix with pine nut cool drink or sweet wine;</li> <li>○ Kill the rats at night;</li> <li>○ Cats (may spread disease); and,</li> <li>○ Poison gel painted where rats run over (dust problem).</li> </ul> </li> <li>• Fly control via the following treatments of adult flies:               <ul style="list-style-type: none"> <li>○ Agita scatter bait which is scattered in problem areas approximately 200gr/100 m<sup>2</sup>.</li> <li>○ Agita paint-on which is mixed according to the directions and are painted on boards located in problem areas.</li> <li>○ Ectomin or Fendona which is mixed in a tank and sprayed where necessary, usually around the egg room.</li> <li>○ Larvadex which is mixed in the feed at 500g per ton.</li> <li>○ Neporex which is used as a spray, or which is scattered on manure (used for larvae found in the manure).</li> </ul> </li> <li>• Fly Management via:               <ul style="list-style-type: none"> <li>○ Rotation of Insecticides: This method involves alternating of the insecticides based on chemical composition, not brand, in order to combat the possibility of the flies becoming resistant to a specific insecticide.</li> </ul> </li> </ul>				N/A

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Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>○ Improve Sanitation: The new houses will be operated on an automated system; thus removal of eggs and manure will be removed daily using a conveyor belt. Cracked eggs will be separated and stored temporarily in a dedicated enclosed area prior to being discarded. Manure will be removed three (3) times per week through the conveyor system and loaded straight into an enclosed truck. By collecting the manure in this manner and within the specified time frame, flies do not have time to hatch and cause sanitary issues. In cases where there is a need to temporarily store the manure, Quantum Foods will have a temporary storage facility which will be an enclosed structure, protected from rain or heat exposure which will exacerbate the issue of fly infestation and odour.</li> <li>○ Monitoring of Flies: The bait method will be used in addition to the insecticides to identify the main source of attraction of flies on site and which strain is prevalent in order to ensure use of the appropriate insecticides.</li> </ul>				
	<ul style="list-style-type: none"> <li>● Ensure that all dead rats are collected on a daily basis and recorded on the control sheet. These bait stations to be cleaned and inspected on a weekly basis. The bait should always be clean and dust free.</li> </ul>				
<b>Nature of impact:</b> Operation Activities may have a positive impact on the local and regional socio economic conditions.	<b>Activity:</b> During the operational phase of the proposed development will create employment opportunities for individuals from the Local Community.				The proposed development will not take place and as such no socio-economic benefits will be derived from this construction period. The impact will thus be a negative one.
<b>Magnitude:</b>	4	N/A	4	N/A	-
<b>Duration:</b>	4		4		-
<b>Extent:</b>	2		2		-
<b>Irreplaceable:</b>	0		0		-
<b>Reversibility:</b>	0		0		-
<b>Probability:</b>	5		5		-
<b>Total SP:</b>	50		50		-
<b>Significance rating:</b>	M (+)		M (+)		-
<b>Cumulative impact:</b>	-		-		-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>● Mitigation measures are not applicable as the impact is positive.</li> </ul>				N/A
<b>Nature of impact:</b> Occupational Health and Safety.	<b>Activity:</b> During the operation phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken.				No operational phase impacts are associated with the no-go alternative thus no

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Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
					assessment has been undertaken.
<b>Magnitude:</b>	10	2	10	2	-
<b>Duration:</b>	4	4	4	4	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	4	4	4	4	-
<b>Reversibility:</b>	4	4	4	4	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	69	30	69	30	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Ensure that PPE is available to Personnel;</li> <li>• Adhere to the Occupational Health and Safety Act;</li> <li>• Keep the first aid kit stocked;</li> <li>• Issue all workers with necessary health and safety items;</li> <li>• Potentially hazardous areas must be demarcated with danger tape;</li> <li>• Appropriate signage must be placed to caution employees and contractors not to enter certain structures without authorisation;</li> <li>• Regular safety inspections must be conducted to ensure that participants are equipped with necessary safety equipment; and,</li> <li>• All personnel to wear hard hats and reflector jackets at all times.</li> </ul>				N/A
<b>Nature of impact:</b> Noise nuisance generated by site operations, the presence of loading trucks for egg collection.	<b>Activity</b> Noise nuisance that may be created by the operation and maintenance work. The presence of loading truck that will load eggs from the proposed facility. Noise is anticipated from the cooling fans in the chicken houses. The impact will be very low as the Chicken Houses are situated on agricultural zoned land that is surrounded by feedlots, cultivated agricultural farmsteads (including residences).				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	4	4	4	4	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	1	1	1	1	-
<b>Reversibility:</b>	1	1	1	1	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	33	18	33	18	-

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Operational Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Limit working hours of noisy equipment to daylight hours;</li> <li>Ensure that employees and maintenance staff conduct themselves in an acceptable manner while on site, both during work hours and after hours;</li> <li>Trucks must drive slowly through facility and should have automatic gearboxes that are generally less noisy than trucks with manual gears. Trucks must go much slower over speed bumps (10 km/hour) through town, where applicable</li> </ul>				N/A

**4.4 POTENTIAL IMPACTS DURING THE DECOMMISSIONING PHASE**

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Nature of impact:</b> Negative impact of haphazard placement of infrastructure on the environment.	<b>Activity:</b> The establishment of a main site office and storage site during the decommissioning 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 decommissioning activities.				<b>Nature of impact:</b> Negative impact of haphazard placement of infrastructure on the environment.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	1	2	1	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	3	3	3	3	-
<b>Reversibility:</b>	3	3	3	3	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	39	20	39	20	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>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;</li> <li>The planning for layout must be done in consultation on-site with the Environmental Control Officer (ECO);</li> <li>The Contractor may not deface, paint, damage or mark any natural features situated in or around the site for survey or other purposes;</li> </ul>				N/A

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Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>The Contractor must ensure that all construction personnel, labourers and equipment always remain within the demarcated construction sites;</li> <li>No servicing of vehicles may be permitted on site, unless for emergency purposes;</li> <li>Stockpiles may not be situated in such a manner that they obstruct pathways;</li> <li>Location of storage area must consider prevailing winds, distance to water bodies and general on-site topography;</li> <li>Place infrastructure as far as possible on sites that have already been transformed;</li> <li>Facilities may not be used as staff accommodation;</li> <li>The Contractors camp layout must consider availability of access for deliveries and services and any future works;</li> <li>The Contractors camp must be of sufficient size to accommodate the needs of all sub-contractors that may work on the project; and,</li> <li>The Contractor must implement the following as required:                             <ul style="list-style-type: none"> <li>Suitable sanitation facilities, adequate for the number of staff on site (1 for every 15 personnel and 1 for each gender); and,</li> </ul> </li> <li>Facilities for solid waste collection.</li> </ul>				
<b>Nature of impact:</b> Topsoil removal and soil erosion.	<b>Activity:</b> The clearing of topsoil and excavation for the decommissioning of building foundations may result in the destruction of fertile topsoil and loss of vegetation cover associated with the development.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	2	2	2	-
<b>Reversibility:</b>	2	2	2	2	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	33	18	33	18	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	L	L	L	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Remove topsoil approximately 300mm deep from establishment area and stockpile areas;</li> <li>Topsoil stockpiles to be kept free from weeds;</li> <li>Construction should take place during the low flow months (winter), as much as possible in order to minimise the risk to the hydrology of the system and to prevent excessive sediment and debris being washed downstream;</li> <li>Correct site reinstatement and landscaping following any disturbances will abate channel and gully formation;</li> </ul>				N/A



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Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>• Disturbed areas, that will not form part of the operational footprint, but which were disturbed as part of the construction activities, should be rehabilitated and re-vegetated using site-appropriate indigenous vegetation and/or seed mixes;</li> <li>• Sheet runoff from cleared areas, paved surfaces and access roads needs to be curtailed;</li> <li>• 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;</li> <li>• Topsoil need to be stored on designated areas only. This need to be planned and indicated in the site-layout plan;</li> <li>• Ensure that topsoil is not mixed with subsoil and/or any other excavated material;</li> <li>• Provide containment and settlement facilities for effluents from concrete mixing and washing facilities;</li> <li>• 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;</li> <li>• Provide spill containment facilities for hazardous materials like fuel and oil;</li> <li>• Place containers of hazardous materials like fossil fuels and oil in designated areas (near existing buildings) and ensure that the entire surface is temporarily cemented and provided with low retaining walls right around the designated areas, flat drip trays can also be used, since they are movable;</li> <li>• Topsoil must be used in all rehabilitation activities and may not be compacted to ensure that its plant support capacity remain of high quality;</li> <li>• Rehabilitate denude areas especially slopes with appropriate species and erosion protection measures i.e. geotextiles, rocks, topsoil mixtures as per specifications;</li> <li>• Stabilise and revegetate all areas bare of vegetation as soon as possible;</li> <li>• Monitor the entire site for signs of erosion throughout the construction and operational phases of the project;</li> <li>• All erosion features must be rehabilitated as soon as possible;</li> <li>• Implement erosion control measures where necessary;</li> <li>• Do not irrigate the cultivated fields to the point of saturation and runoff;</li> <li>• Implement suitable erosion prevention measures during the operation, construction and decommissioning phase.</li> <li>• Make use of surface erosion measures within disturbed areas to avoid erosion in times of high risk (e.g. rain season and time of high wind speeds);</li> <li>• Stormwater management along any roadways and paths to reduce gully erosion formation;</li> <li>• Stormwater management should prevent excessive sediment to be carried into the watercourses; <ul style="list-style-type: none"> <li>• Soil disturbance must be kept to a minimum within and around the development footprint;</li> </ul> </li> </ul>				
<p><b>Nature of impact:</b> Surface and groundwater contamination due to decommissioning activities</p>	<p><b>Activity:</b> Spills could possibly occur on site and lead to the contamination of soil and groundwater.</p>				<p>No decommissioning phase impacts are associated with the no-go alternative thus no</p>

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
such as the use of hazardous materials on site e.g., fuel and oil.					assessment has been undertaken.
<b>Magnitude:</b>	6	4	6	4	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	3	2	3	2	-
<b>Probability:</b>	4	3	4	3	-
<b>Total SP:</b>	60	30	60	30	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	L	L	L	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Material Safety Data Sheets (MSDSs) must 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;</li> <li>All spillage must be cleaned up immediately after they have occurred;</li> <li>Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bio-remediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site;</li> <li>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;</li> <li>Vehicles and machinery must be regularly serviced to avoid leakages;</li> <li>At the work site the contractor must maintain strict surveillance to ensure that no spills occur;</li> <li>No water courses may be used to clean equipment, or for bathing. All cleaning operations must take place off site at a location where wastewater can be disposed of correctly;</li> <li>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;</li> <li>Fuel and chemical storage must 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;</li> <li>Construction vehicles must be inspected every morning before work commence to ensure that no leakages do occur;</li> <li>All personnel must receive induction on how to report spillages, contain them and treat them accordingly;</li> <li>Spill kits must be available at each working station;</li> <li>Drip trays must be placed beneath all construction equipment that are stationary on site or within the site camp; and,</li> <li>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.</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>Any waste generated should be disposed of accordingly in registered waste (landfill) sites and not dumped on site or the surrounding area;</li> <li>Regularly inspect all vehicles for leaks. Re-fuelling of vehicles must take place on a sealed surface area surrounded by berms to prevent ingress of hydrocarbons into topsoil;</li> <li>If any spills occur, they should be immediately cleaned up;</li> </ul>				
<b>Nature of impact:</b> Handling of general waste materials on the decommissioning site.	<b>Activity:</b> The presence of personnel and decommissioning operations on site will increase the likelihood of littering and the dumping of solid waste.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	6	4	6	4	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	0	2	0	-
<b>Reversibility:</b>	1	0	1	0	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	36	14	36	14	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>An adequate number of scavenger proof litter bins are to be placed throughout the site. Two (2) 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;</li> <li>Waste sorting and separation must form part of the environmental induction and awareness programme, to encourage personnel to collect wastepaper, glass and metal waste separately;</li> <li>Keep all work sites including storage areas, offices and workshops neat and tidy;</li> <li>Dedicate a demarcated and signposted storage area on site for the collection of construction waste;</li> <li>All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site as mentioned in the Basic Assessment Report;</li> <li>Care must be taken to ensure that no waste fall off disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised;</li> <li>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;</li> <li>Littering by construction workers shall not be permitted;</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>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;</li> <li>Minimise waste by sorting wastes into recyclable and non-recyclable waste;</li> <li>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;</li> <li>A bi-weekly (twice a week) litter patrol of the entire site shall be conducted by the designated Environmental Site Agent (ESA);</li> <li>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,</li> <li>A register must be kept of the quantities of waste disposed and proof of disposal must be available at the site office.</li> <li>The facility should be kept clean and tidy at all times;</li> <li>Any waste generated should be disposed of accordingly in registered waste (landfill) sites and not dumped on site or the surrounding area;</li> <li>All surfaces that are associated with waste and manure should have impermeable surfaces;</li> <li>Proper waste management during all phases of the activity, as well as storm water management, will have to be strictly enforced and monitored. This is to prevent any litter, rubble, or possible pollution to enter the watercourses downstream of the site and the surrounding environment in general;</li> </ul>				
<b>Nature of impact:</b> Increased risk of veld fires.	<b>Activity:</b> Due to the presence of construction personnel in natural areas, fires can occur if not managed to the correct standard. Fire may occur due to the presence and use of hazardous and flammable materials on site.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	6	4	6	4	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	2	2	2	2	-
<b>Irreplaceable:</b>	3	2	3	2	-
<b>Reversibility:</b>	3	2	3	2	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	48	24	48	24	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>The Contractor shall take all reasonable and precautionary steps to ensure that fires are not started as a consequence of the activities on site;</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>• 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;</li> <li>• Workers must be adequately trained in the handling of firefighting equipment, and can include but not limited to: <ul style="list-style-type: none"> <li>○ Regular fire prevention talks and drills; and,</li> <li>○ Posting of regular reminders to staff.</li> </ul> </li> <li>• No open fires are permitted anywhere on site;</li> <li>• Do not store any fuel or chemicals under trees;</li> <li>• Place containers of hazardous materials like fossil fuels and oil in designated areas (near existing buildings) and ensure that the entire surface is temporarily cemented and provided with low retaining walls right around the designated areas, flat drip trays can also be used, since they are movable;</li> <li>• Ensure that a good fire break around these designated areas for hazardous materials and around the footprint of the proposed project by removing grass with a scraper;</li> <li>• Do not store gas and liquid fuel in the same storage area (Hazardous substances to be stored in accordance with SANS);</li> <li>• Any fires that occur on site shall be reported to the ECO immediately and then to the relevant Authorities;</li> <li>• In the event of a fire, the Contractor shall immediately employ such plant and personnel as is at his disposal and take all necessary action to prevent the spread of the fire and bring it under control;</li> <li>• Do not permit any smoking within 3 m of any fuel or chemical storage area, or refuelling area. A designated smoking area must be established on site; and,</li> <li>• All construction vehicles must be fitted with at least one fire extinguisher.</li> </ul>				
<b>Nature of impact:</b> Traffic impacts associated with the movement of construction vehicles on site.	<b>Activity:</b> The movement of vehicles on site may result in the destruction of biodiversity, compaction of valuable topsoil and mortalities of fauna on site.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	1	2	1	-
<b>Reversibility:</b>	2	1	2	1	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	33	14	33	14	-
<b>Significance rating:</b>	L	L	L	L	-

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• During decommissioning create designated turning areas and strictly prohibit any off-road driving or parking of vehicles and machinery outside designated areas;</li> <li>• Monitor the establishment of (Alien) Invasive Species and remove as soon as detected, before regenerative material can be formed;</li> <li>• Abnormal loads and machinery should avoid movement over gravel roads during and immediately after rainfall events, to limit destruction of road surfaces and sedimentation of downhill rivers/streams;</li> <li>• 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;</li> <li>• Construction vehicles may not leave the designated roads and tracks, whilst U-Turns are prohibited on all roads;</li> <li>• Signage is always to be placed on vehicles;</li> <li>• All construction vehicles must adhere to construction sites and avoid off road to minimise impact on vegetation and soil;</li> <li>• 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,</li> <li>• Construction-related vehicles and machinery may not operate on site without reflective safety signage, car-top lights and reflective personnel gear.</li> </ul>				N/A
<b>Nature of impact:</b> Direct impact on vegetation and fauna during decommission and loss of species.	<b>Activity:</b> Decommissioning activities will result in the loss of vegetation and other ecological processes due to foundation excavation.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	1	1	1	1	-
<b>Reversibility:</b>	1	1	1	1	-
<b>Probability:</b>	4	2	4	2	-
<b>Total SP:</b>	36	14	36	14	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• All disturbed and compacted soils need to be ripped, re-profiled and reseeded and/or replanted with indigenous species;</li> <li>• Areas to be cleared should be agreed and demarcated before the start of the clearing operations;</li> <li>• Stabilise all erosion features on site;</li> <li>• No personnel are allowed to collect, harvest or destroy any species of flora or fauna on or off the site, unless specifically earmarked for removal;</li> <li>• Proper waste management during all phases of the activity, as well as storm water management, will have to be strictly enforced and monitored. This is to prevent any litter, rubble or possible pollution to enter the watercourses downstream of the site and the surrounding environment in general;</li> <li>• Maintain the buffer around the Dwarsspruit river as indicated in the Aquatic Biodiversity Impact Assessment.</li> <li>• No open fires are allowed on site during the construction.</li> <li>• Smoking must be restricted to designated smoking areas.</li> <li>• Vehicles used during the decommissioning phase must be restricted to designated roads.</li> <li>• Should any threatened species be observed on the development footprint, the species must be relocated in consultation with a faunal specialist.</li> <li>• All emergency numbers for human-wildlife conflict events must be located at the farm offices.</li> <li>• At least one decommissioning personnel must a trained snake handler (for example, the Designated Environmental Officer).</li> <li>• All personnel, during all phases of the decommissioning works, must be inducted to ensure that they are aware of the environmental sensitivities on the site.</li> <li>• Areas disturbed outside of the footprint must be rehabilitated effectively.</li> </ul>				N/A
<b>Nature of impact:</b> Dust nuisance generated by the operation of machinery and vehicles.	<b>Activity:</b> The decommissioning activities of the proposed project could potentially result in fugitive dust emissions.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	1	1	1	1	-
<b>Reversibility:</b>	2	2	2	2	-
<b>Probability:</b>	4	3	4	3	-
<b>Total SP:</b>	40	24	40	24	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	L	L	L	L	-

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Implement suitable dust management and prevention measures during the decommissioning phase;</li> <li>Ensure all vehicles remain on designated roads and avoid the opening of detour or by-pass tracks;</li> <li>Vehicles delivering or removing soil must be covered to reduce spills and windblown dust;</li> <li>Any complaints received by the Contractor regarding dust will be recorded and communicated to the ECO;</li> <li>Obtain a permanent tanker throughout the construction period to have access to “wet” roads when necessary; and,</li> <li>Areas around the proposed project footprint must be adequately rehabilitated to prevent significant dust emissions.</li> </ul>				N/A
<b>Nature of impact:</b> Disturbance of-/damage to aquatic and semi-aquatic faunal habitats, associated with the Dwarsspruit as a result of decommissioning activities	<b>Activity:</b> Disturbance of-/damage to aquatic and semi-aquatic faunal habitats, associated with the Dwarsspruit				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	2	2	4	2	-
<b>Duration:</b>	4	2	4	2	-
<b>Extent:</b>	2	1	2	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	3	1	3	1	-
<b>Probability:</b>	4	2	5	2	-
<b>Total SP:</b>	56	11	90	11	-
<b>Significance rating:</b>	M	L	MH	L	-
<b>Cumulative impact:</b>	M	L	M	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</li> <li>No site decommissioning basecamps may be established within the broader undeveloped landscape surrounding the proposed development footprint.</li> </ul>				N/A
<b>Nature of impact:</b> Terrestrial and aquatic alien invasive species establishment within the Dwarsspruit	<b>Activity:</b> The proposed decommissioning area could be prone to alien invasive species establishment, due to surface disturbance and vegetation clearance caused by decommissioning activities.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-



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Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
<b>Duration:</b>	4	1	4	1	-
<b>Extent:</b>	3	1	3	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	2	1	2	1	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	48	10	48	10	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	L	L	L	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>It is recommended that the Dwarspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed decommissioning footprint area.</li> <li>It is recommended that all individuals of the identified alien invasive species must be actively eradicated from the Dwarspruit, in accordance with the National Environmental Management: Biodiversity Act (Act 10 of 2004); Alien and Invasive Species Regulations, 2014. Removed materials must also be adequately disposed of.</li> <li>Implement an adequate Alien Invasive Species Management Plan during the decommissioning phases. Such a Management Plan must be compiled by a suitably qualified and experienced ecologist.</li> </ul>				N/A
<b>Nature of impact:</b> Impeding and contamination of the flow regime of the Dwarspruit, within the associated local and broader quaternary surface water catchment- and drainage area	<b>Activity:</b> Impeding and contamination of the flow regime of the Dwarspruit, within the associated local and broader quaternary surface water catchment- and drainage area				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	2	2	-
<b>Duration:</b>	2	1	4	2	-
<b>Extent:</b>	3	1	2	1	-
<b>Irreplaceable:</b>	3	1	3	1	-
<b>Reversibility:</b>	4	1	3	1	-
<b>Probability:</b>	3	2	4	2	-
<b>Total SP:</b>	48	12	56	11	-
<b>Significance rating:</b>	L	L	M	L	-
<b>Cumulative impact:</b>	L	L	L	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Implement an adequate Stormwater and Erosion Management Plan during the decommissioning phase of the proposed development, to sufficiently manage storm water runoff and clean/dirty water separation on site.</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area.</li> </ul>				
<b>Nature of impact:</b> Occupational health and safety.	<b>Activity:</b> During the decommissioning phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	10	4	10	4	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	2	2	2	2	-
<b>Irreplaceable:</b>	4	4	4	4	-
<b>Reversibility:</b>	4	4	4	4	-
<b>Probability:</b>	3	2	3	2	-
<b>Total SP:</b>	66	32	66	32	-
<b>Significance rating:</b>	M	L	M	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Ensure that PPE is available to personnel;</li> <li>Adhere to the Occupational Health and Safety Act;</li> <li>Keep the first aid kit stocked;</li> <li>Issue all workers with necessary health and safety items;</li> <li>Potentially hazardous areas must be demarcated with danger tape;</li> <li>Appropriate signage must be placed to caution employees and contractors not to enter certain structures without authorisation;</li> <li>Regular safety inspections must be conducted to ensure that participants are equipped with necessary safety equipment; and,</li> <li>All construction personnel are to wear hard hats and reflector jackets at all times.</li> </ul>				N/A
<b>Nature of impact:</b> Decommissioning activities may have a positive impact on the local and regional socio-economic conditions.	<b>Activity:</b> During the construction phase of the project the construction process may have a positive impact on the local and regional socio-economic conditions by means of job creation.				The proposed decommissioning will not take place and as such no socio-economic benefits will be derived from this decommissioning

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
					period. The impact will thus be a negative one.
<b>Magnitude:</b>	4	N/A	4	N/A	-
<b>Duration:</b>	2		2		-
<b>Extent:</b>	2		2		-
<b>Irreplaceable:</b>	0		0		-
<b>Reversibility:</b>	0		0		-
<b>Probability:</b>	4		4		-
<b>Total SP:</b>	32		32		-
<b>Significance rating:</b>	L (+)		L (+)		-
<b>Cumulative impact:</b>	-	-	-	-	
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Implement an adequate Stormwater and Erosion Management Plan during the decommissioning phase of the proposed development, to sufficiently manage storm water runoff and clean/dirty water separation on site.</li> <li>It is recommended that the Dwarspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area.</li> </ul>				N/A
<b>Nature of impact:</b> Damage and destruction of vertebrate fossils during excavation activities (Heritage).	<b>Activity:</b> 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. However, based on the previously disturbed nature of the property as well as the limited nature and scale of the proposed development, it is unlikely that the proposed development will negatively impact on significant archaeological or palaeontological heritage.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Magnitude:</b>	4	2	4	2	-
<b>Duration:</b>	2	2	2	2	-
<b>Extent:</b>	1	1	1	1	-
<b>Irreplaceable:</b>	2	2	2	2	-
<b>Reversibility:</b>	4	4	4	4	-
<b>Probability:</b>	2	1	2	1	-
<b>Total SP:</b>	26	11	26	11	-
<b>Significance rating:</b>	L	L	L	L	-
<b>Cumulative impact:</b>	-	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>A brief introduction to the process to follow in the event of possible accidental discovery of fossils should be conducted by the designated Environmental Control Officer (ECO) for the project, or the foreman or site agent in the absence of the ECO. It is recommended that copies of the attached poster and procedure are printed out and displayed at the site office so that</li> </ul>				N/A

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<p>workmen may familiarise themselves with them and are thereby prepared in the event that accidental discovery of fossil material takes place;</p> <ul style="list-style-type: none"> <li>• One person in the staff must be identified and appointed as responsible for the implementation of the protocol in instances of accidental fossil discovery and must report to the ECO or site agent. If the ECO or site agent is not present on site, then the responsible person on site should follow the protocol correctly in order to not jeopardize the conservation and well-being of the fossil material;</li> <li>• The procedure to follow if it is likely that the material identified is a fossil should be followed: <ul style="list-style-type: none"> <li>○ The ECO or site agent must ensure that all work ceases immediately in the vicinity of the area where the fossil or fossils have been found;</li> <li>○ The ECO or site agent must inform SAHRA of the find immediately. This information must include photographs of the findings and GPS co-ordinates; and,</li> <li>○ The ECO or site agent must compile a Preliminary Report and fill in the attached Fossil Discoveries: Preliminary Record Form within 24 hours without removing the fossil from its original position. The Preliminary Report records basic information about the find including: <ul style="list-style-type: none"> <li>▪ The date;</li> <li>▪ A description of the discovery;</li> <li>▪ A description of the fossil and its context (e.g. position and depth of find);</li> <li>▪ Where and how the find has been stored;</li> <li>▪ Photographs to accompany the preliminary report (the more the better): <ul style="list-style-type: none"> <li>-A scale must be used;</li> <li>-Photos of location from several angles;</li> <li>-Photos of vertical section should be provided;</li> <li>-Digital images of hole showing vertical section (side); and,</li> <li>-Digital images of fossil or fossils.</li> </ul> </li> </ul> </li> <li>○ Exposed finds must be stabilised where they are unstable and the site capped, e.g. with a plastic sheet or sandbags. This protection should allow for the later excavation of the finds with due scientific care and diligence. SAHRA can advise on the most appropriate method for stabilisation;</li> <li>○ If the find cannot be stabilised, the fossil may be collected with extreme care by the ECO or the site agent and put aside and protected until SAHRA advises on further action. Finds collected in this way must be safely and securely stored in tissue paper and an appropriate box; and,</li> <li>○ Care must be taken to remove all fossil material and any breakage of fossil material must be avoided at all costs.</li> </ul> </li> <li>• No work may continue in the vicinity of the find until SAHRA has indicated, in writing, that it is appropriate to proceed;</li> </ul>				

BASIC ASSESSMENT REPORT

Decommissioning Phase	Alternative 1		Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>					
	<ul style="list-style-type: none"> <li>• 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;</li> <li>• Excavations must be limited to the footprint area;</li> <li>• 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"> <li>○ All construction in the immediate 50 m vicinity radius of the site must cease;</li> <li>○ The Heritage Practitioner must be informed as soon as possible;</li> <li>○ In the event of obvious human remains SAPS must be notified;</li> <li>○ Mitigation measures (such as refilling, etc.) must not be attempted; and,</li> <li>○ The area in a 50 m radius of the find must be cordoned off with hazard tape.</li> </ul> </li> <li>• Public access must be limited, and the area must be placed under guard.</li> </ul>				

## 4.5 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.

As the proposed development of the chicken layer houses and evaporation ponds are placed as close as possible to the existing disturbed footprint on the same property to ensure that the potential impacts are reduced while taking into account the ease of access from cleaning the chicken houses and the treatment of the wash water in the evaporation ponds. The decommissioning of the current chicken layer houses will also take place on existing footprints.

All potential impacts on biological, geological, hydrological (wetlands) and physical, faunal and floral, noise, socio-economic and cultural-heritage aspects range from a medium to low significance without mitigation and management thereof, however it can all be mitigated to an acceptable low significance rating with implementation of the mitigation measures and strict compliance with the EMP'r.

The safe yield estimates (as indicated in the Yield Test Report in Appendix D) of all three boreholes are also within the predicted required usage capacity for operation activities.

However, the layout for Alternative 2 does result in more impact to the Aquatic CBA than Alternative 1 given that one of the chicken houses and evaporation ponds will be constructed within 150m of the Dwarsspruit River.

It is thus the opinion of the EAP, supported by the findings of the specialist determinations that the **Alternative 1** for construction of the new evaporation ponds and chicken layer houses, decommissioning of current chicken layer houses and usage of boreholes by Quantum Foods, with the guidance of the EMP'r, be authorised for construction and operation.

Impacts associated with this proposed project are described and the significance rating given in Section D.

### No-go alternative (compulsory)

The proposed expansion of the poultry farm is to increase the amount of chickens that can be kept on the premises. This will ensure an increase in revenue in the company and the job security of fifteen (15) employees. Furthermore, the Waste Management License is being applied for to construct twenty (20) evaporation ponds. These evaporation ponds will prevent wash water from the chicken houses entering into the environment.

Should the activities related to the expansion not be authorised, the following will occur:

- Loss of the potential job security and job generation for employees
- Loss of potential additional revenue for Quantum Foods
- Potential environmental degradation as a result of wash water running into the environment after washing the current chicken layer houses on the farm.

## 5. SECTION E: RECOMMENDATION OF PRACTITIONER

BASIC ASSESSMENT REPORT

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.

**Soil erosion:**

- Make use of geotextiles within disturbed areas of steeper topography to avoid erosion through surface water runoff;
- Construct within the low-flow (dry) period, as much as possible; and,
- Correct site reinstatement and landscaping following any disturbances will abate channel and gully formation.

**Dust Nuisance:**

- Implement dust suppression measures e.g. regular watering of dusty surfaces.

**Noise Nuisance:**

- Limit working hours of noisy equipment; and,
- Ensure that employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours.

**Site Specific Conditions:**

- The Evaporation Ponds should be lined by a liner that has been approved by DFFE and DWS.
- A 150m buffer around the Dwarsspruit River must implemented when constructing the chicken houses and evaporation ponds.

**Fire Protection:**

- All work must comply with Act 103 of 1977 and SABS 0400-1990; and,
- Fire extinguishers to comply with SABS 810, 889 & 1151.

Is an EMP'r attached?

YES  
X

The EMP'r must be attached as Appendix F.

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 B.

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

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

**Megan Smith**

NAME OF EAP



27/02/2022

BASIC ASSESSMENT REPORT

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SIGNATURE OF EAP

DATE



## 6. SECTION F: APPENDIXES

The following Appendixes must be attached as appropriate (this list is inclusive, but not exhaustive):

It is required that if more than one item is enclosed that a table of contents is included in the Appendix.

<b>Appendix A:</b>	Site plan(s) – Maps ( <i>must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers</i> )
<b>Appendix B:</b>	Photographs
<b>Appendix C:</b>	Facility Illustration(s)
<b>Appendix D:</b>	Specialists' Reports, Impact Statements & Declarations
<b>Appendix E:</b>	Public Participation
<b>Appendix F:</b>	EMP
<b>Appendix G:</b>	Additional Information
<b>Appendix H:</b>	Details of the EAP and Review EAP
<b>Appendix I:</b>	Impact Assessment
<b>Appendix J:</b>	Declaration of EAP
<b>Appendix K:</b>	Declaration of Applicant
<b>Appendix L</b>	Asset register and 2002 aerial imagery