

***ENVIRONMENTAL IMPACT ASSESSMENT
FOR THE CONSTRUCTION AND OPERATION
OF A CATTLE ABATTOIR ON PORTION A OF
PORTION 4 OF FARM OTJIHAVERA NO.62,
OTJOZONDJUPA REGION***

2023

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<p>Project Name:</p>	<p>ENVIRONMENTAL IMPACT ASSESSMENT FOR THE CONSTRUCTION AND OPERATION OF A CATTLE ABATTOIR ON PORTION A OF PORTION 4 OF FARM OTJIHAVERA NO. 62, OTJOZONDJUPA REGION</p>
<p>The Proponent:</p>	<div data-bbox="883 653 1149 894" data-label="Image"> </div> <p>Savanna Beef Processors Ltd P.O. Box 30098 Windhoek</p>
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EXECUTIVE SUMMARY

Green Earth Environmental Consultants were appointed by the Proponent, Savanna Beef Processors Ltd, to conduct an Environmental Impact Assessment to obtain an Environmental Clearance to construct and operate a cattle abattoir on Portion A of Portion 4 of Farm Otjihavera No. 62, Otjozondjupa Region. The land within the immediate vicinity of the project site is predominately characterized by commercial, and farming activities. In terms of the Regulations of the Environmental Management Act (No 7 of 2007) an Environmental Impact Assessment must be done to address the following 'Listed Activities':

WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES

- *The construction of facilities for waste sites, treatment of waste and disposal of waste.*
- *Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976.*
- *The import, processing, use and recycling, temporary storage, transit or export of waste.*

ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

The construction of facilities for –

- *The generation of electricity.*
- *The transmission and supply of electricity.*

WATER RESOURCE DEVELOPMENTS

- *The abstraction of ground or surface water for industrial or commercial purposes.*

HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE

- *The storage and handling of a dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.*
- *Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin.*

INFRASTRUCTURE

The route determination of roads and design of associated physical infrastructure where –

- *It is a public road.*
- *The road reserve is wider than 30 meters; or*
- *The road caters for more than one lane of traffic in both directions.*

The key characteristics/environmental impacts of the proposed project are as follows:

Impact on environment	Nature of impact
More efficient and intensive use of land.	Positive for the area and Namibia in general.
Creation of employment and transfer of skills.	Positive as employment will be created during construction and operation.
The creation of dust.	Negative during construction and use as some of the roads will be gravel roads.
There will be an impact on traffic.	Negative during construction and once operational as the site will result in the increase in traffic on the main roads in the area.
The creation of noise.	Negative during construction but low and on par with the noise levels associated with the general abattoir operational activities.
Possible impact on cultural/heritage aspects.	No items of archeologic value or graves were observed during the site visit which means the impact will be low. If any items or graves are found during construction, the impact will be high and irreversible.
Impact on fauna and flora.	Animals, reptiles, and birds will be disturbed during the clearing of the land to be used for the abattoir. Vegetation will also be removed to construct the roads. The construction of the powerline will have an impact on birds. Permits must be obtained to remove protected tree species.
There might be a possible visual impact.	Medium to high as land will be cleared for the alignment and construction of the abattoir.
Impact on groundwater, surface water and soil.	The impact will be negative in case of spilling of hazardous materials during construction and operation.
Impact on health and safety.	Low if mitigated during construction and operations.

The negative impacts associated with the project are the impact on the vegetation, birds and other animals, the natural drainage systems, ground and surface water, waste production, noise and dust during construction and operation, the danger of residents and visitors being injured during construction, the transmission of diseases from people or to people involved in construction and operations, the loss of land during the alignment and construction of roads. However, mitigation measures will be provided that

can control the extent, intensity, and frequency of these named impacts in order not to have substantial negative effects or results.

The type of activities that will be carried out on the site will not negatively affect the amenity of the locality and the activities do not adversely affect the environmental quality of the neighbouring farms, portions or areas. None of the potential impacts identified are regarded as having a significant impact to the extent that the proposed project should not be allowed. However, the operational activities further on need to be controlled and monitored by the assigned subcontractors and the proponent.

The Environmental Impact Assessment which follows upon this paragraph was conducted in accordance with the guidelines and stipulations of the Environmental Management Act (No 7 of 2007) meaning that all possible impacts have been considered and the details are presented in the report.

Based upon the conclusions and recommendations of the Environmental Impact Assessment Report and Environmental Management Plan following this paragraph, the Environmental Commissioner of the Ministry of Environment, Forestry and Tourism is herewith requested to:

1. Accept the Environmental Impact Assessment.
2. Approve the Environmental Management Plan.
3. Issue an Environmental Clearance to construct and operate a cattle abattoir on a portion of Portion 4 of Farm Otjihavera No. 62, Otjozondjupa Region and for the following "listed activities":

WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES

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- *Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976.*
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LIST OF ABBREVIATIONS

CAN	Central Area of Namibia
EC	Environmental Clearance
ECO	Environment Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
I&APs	Interested and Affected Parties
MEFT	Ministry of Environment, Forestry and Tourism
SQM	Square Meters

1. INTRODUCTION

The Proponent, Savanna Beef Processors Ltd, appointed Green Earth Environmental Consultants to conduct an Environmental Impact Assessment and develop an Environmental Management Plan to obtain an Environmental Clearance to construct and operate a cattle abattoir on Portion A of Portion 4 of Farm Otjihavera No. 62, Otjozondjupa Region.

The Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) stipulates that an Environmental Impact Assessment (EIA) report and management plan is required as the following 'Listed Activities' are involved:

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The Environmental Impact Assessment below contains information on the proposed project and the surrounding areas, the proposed activities, the applicable legislation to the study conducted, the methodology that was followed, the public consultation that was conducted, and the receiving environment's sensitivity and any potential ecological, environmental, and social impacts.

2. TERMS OF REFERENCE

To be able to implement the proposed project, an Environmental Impact Assessment and Environmental Clearance is required. For this environmental impact exercise, Green Earth Environmental Consultants followed the terms of reference as stipulated under the Environmental Management Act.

The aim of the environmental impact assessment was:

- To ascertain existing environmental conditions on the site to determine its environmental sensitivity.
- To inform I&APs and relevant authorities of the details of the proposed development and to provide them with an opportunity to raise issues and concerns.
- To assess the significance of issues and concerns raised.
- To compile a report detailing all identified issues and possible impacts, stipulating the way forward and identify specialist investigations required.
- To outline management guidelines in an Environmental Management Plan (EMP) to minimize and/or mitigate potentially negative impacts.
- To comply with Namibia's Environmental Management Act (2007) and its regulations (2012).

The tasks that were undertaken for the Environmental Impact Assessment included the evaluation of the following: climate, water (hydrology), vegetation, geology, soils, socio economic impact, cultural heritage, groundwater, sedimentation, erosion, biodiversity, sense of place, socio-economic environment, health, safety and traffic.

The EIA and EMP from the assessment will be submitted to the Environmental Commissioner for consideration. The Environmental Clearance will only be obtained (from the DEA) once the EIA and EMP has been examined and approved for the listed activity.

The public consultation process as per the guidelines of the Act has been followed. The methods that were used to assess the environmental issues and alternatives included the collection of data on the project site and surrounding area, info obtained from the proponent and the Ministry of Environment, Forestry and Tourism and identified and affected stakeholders. Consequences of impacts were determined in five categories: nature of impact, expected duration of impact, geographical extent of the event, probability of occurring and the expected intensity.

All other permits, licenses or certificates that are further on required for the operation of the proposed project still needs to be applied for by the proponent.

3. NEED, DESIRABILITY AND MOTIVATION

It is believed that there is a need for the proposed project and that the selected site is desirable for the project.

Need

A team of consultants including Windhoek Consulting Engineers, SGA Auditors and NDC Structural Engineering Consultants completed a 'Feasibility Study' in March 2020 on the beef value chain of Namibia. The need for a modern export abattoir was identified in this study. See copy of the Study attached.

Currently a large portion of Namibia's cattle is exported live on the hoof as weaners. This is because of the price interaction between the local slaughtering industry and the live export of young animals which is determined by macro-economic forces. The average weaner price equals approximately 60% of the ox slaughter price. The local price for ox slaughtered animals must consistently be higher than this 60% to retain the wieners in Namibia and to ensure a stable supply of slaughter-able cattle in Namibia and to allow for secondary value addition as well as to regain the loyalty and trust of Namibian producers.

When the profit margins of weaner and ox production are compared it shows that an incremental price increase in the ox slaughter prices will convince weaner producers to become ox produces, assuming that long term trust can be accomplished between producers and the export abattoir. It is argued that, at 2018/19 average prices, a premium of N\$6.25/kg would be sufficient to motivate producers to convert their production systems from weaner production to ox production. This calculation was based on the international prices, exchange rates, the competitive level of local abattoirs and the RSA feedlot equilibrium.

The proposed price increase will lower the weaner/ox price ratio and increase beef supply for local slaughtering which will require additional slaughter capacity. Climate change will also influence beef production. Ox production is less risky during periods of drought than weaner production.

It is assumed that the calculated incremental price increase would result into the slaughtering of an additional 250 carcasses daily, equalling 44,000 cattle annually. These cattle will be fattened and slaughtered locally once price incentives are in place and as weaner producers convert to ox producers.

The Study pointed out that the health standards for the global meat processing industry are tightening. This will require from processors to replace aging facilities to apply with modern standards to be able to compete globally. This will impact on existing Namibian abattoirs.

The above confirm that Namibia requires an additional 250 units per/day slaughter capacity which complies with standards as required in the global meat market.

Desirability

Portion A of Portion 4 of Farm Otjihavera No. 62, Otjozondjupa Region was identified as the ideal site for the placement of the proposed export beef abattoir because of the following reasons:

- The site is located in the centre of Namibia's main cattle production area and close to the main areas which currently export weaners to RSA.
- The site has good access as it is located directly next to Main Road B1 with an intersection located directly southwest of proposed Portion A. Large interlinked trucks used for transporting/delivering cattle can safely access the abattoir site via this access road.
- The railway line linking Windhoek and Okahandja is located directly east of Portion A which means it can also be used in future for transporting of animals/goods to and from the abattoir.
- The site is close to good and sustainable water sources. A geohydrological survey and test boreholes confirmed that the site has a significant sustainable groundwater source with good quality water. This source will be supplemented by water from the NamWater network. The NamWater pipeline linking Von Bach Dam with Windhoek is directly south of Portion A and a connection to Portion A has already been provided.
- The Portion is in proximity of an existing NamPower substation from which electricity can be obtained.
- The topography of the site is generally flat with a gradual slope and thus ideal to accommodate the abattoir and supporting infrastructure without the requirement of major landscaping/groundworks.
- The site is not close to any residential areas which are normally sensitive for odours associated with the operation of an abattoir.
- The site is close enough to Windhoek and Okahandja to allow employees to reside in one of these towns and commute to work daily.

The site is desirable for the proposed operations, the activities will have a limited impact on the bio-physical environment, enough water is available for construction and proper accesses can be provided to the proposed operations.

Determining what the impact of the operations would be are broken down into different categories and environmental aspects and dealt with in the Environmental Management Plan (EMP). As per the ISO 14001 definition: *an environmental aspect is an element of an organization's activities, products and/or services that can interact with the environment to cause an environmental impact e.g., land degradation or land deterioration among others, that will cause harm to the environment.*

All concerns and potential impacts raised during the public participation process and

consultative meetings were evaluated. Predictions were made with respect to their magnitude and an assessment of their significance was made according to the following criteria:

The Nature of the activity: The possible impacts that may occur are that water will be used in the construction and operational phases, wastewater will be produced that will be handled, land will be used for the proposed activities, a sewage system will be constructed, and general construction activities will take place, namely the building of infrastructure.

The Probability of the impacts to occur: The probability of the above-named impacts to occur and have a negative or harmful impact on the environment and the community is small since the Environmental Management Plan will also guide these activities. Water will still be used, and wastewater produced, however guidelines will be set that will ensure the impact is minimum.

The Extent of area that the project will affect: The specific project will most likely only have a small impact on the proposed project site itself and not on the surrounding or neighbouring land except for noise, traffic, roads, electricity and dust and there may be a visual impact because of the size of the proposed development. Therefore, the extent that the project will have a negative impact on is not extensive.

The Duration of the project: The duration of the project is uncertain. Water will still be used, and waste produced on a continuous basis and the structures that were constructed will remain and may be visually unpleasing to surroundings.

The Intensity of the project: The intensity of the project is mostly limited to the site however for the above-named items/processes where the intensity of the project will be felt outside the borders of the project site.

According to the information that was present while conducting the Environmental Impact Assessment for the construction and operation of the project, no high-risk impacts were identified and therefore it is believed that the operations will be feasible in the short and long run. Most of the impacts identified were characterized as being of a low impact on the receiving and surrounding environment and with mitigation measures followed, the impacts will be of minimum significance or avoided.

4. SAVANNA BEEF PROCESSORS

The Beef Value Chain Forum (BVCF) was established on 17 November 2020 to address and meet producers' beef production needs by focusing on exports and quotas. The BVCF's aim is to create a profitable and sustainable value addition in the beef production sector by processing meat products before they are exported. Savanna Beef Processors Ltd (part of the Beef Value Chain Forum) will be established as an export abattoir and be responsible for the optimal slaughtering, processing and marketing functions.

5. BACKGROUND INFORMATION ON PROJECT

5.1.SITE INFORMATION

5.1.1.LOCALITY

The proponent, Savanna Beef Processors Ltd (part of the Beef Value Chain Forum) identified a portion of Portion 4 (Wildfarm Teufelsschlucht) of the Farm Otjihavera No. 62, Otjozondjupa Region as ideal for the construction and operation of the abattoir. This Site, referred to as Portion A, is located between Windhoek and Okahandja approximately ± 30 km south of Okahandja and ± 40 km to the north of Windhoek along the eastern side of the B1 Trunk Road in the Otjozondjupa Region. 25 hectare is required for the abattoir and its supporting infrastructure.

Portion 4 (Wildfarm Teufelsschlucht) of the Farm Otjihavera No. 62 will be subdivided to create a 25ha portion (Portion A) for the abattoir. An application has been submitted by Du Toit Town Planning Consultants to obtain approval from the MAWLR's for the subdivision of the Farm. See below the locality plans of the project site:

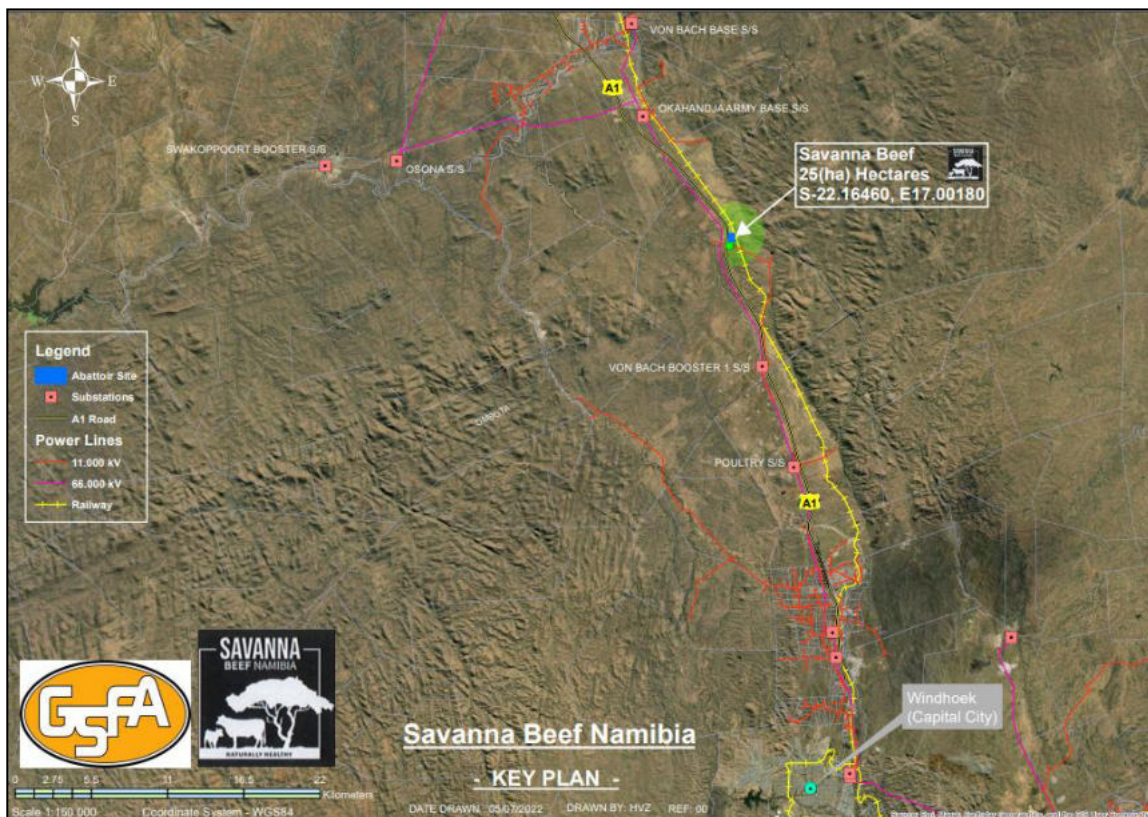


Figure 1: Location of Project Site (GSFA, 2022)

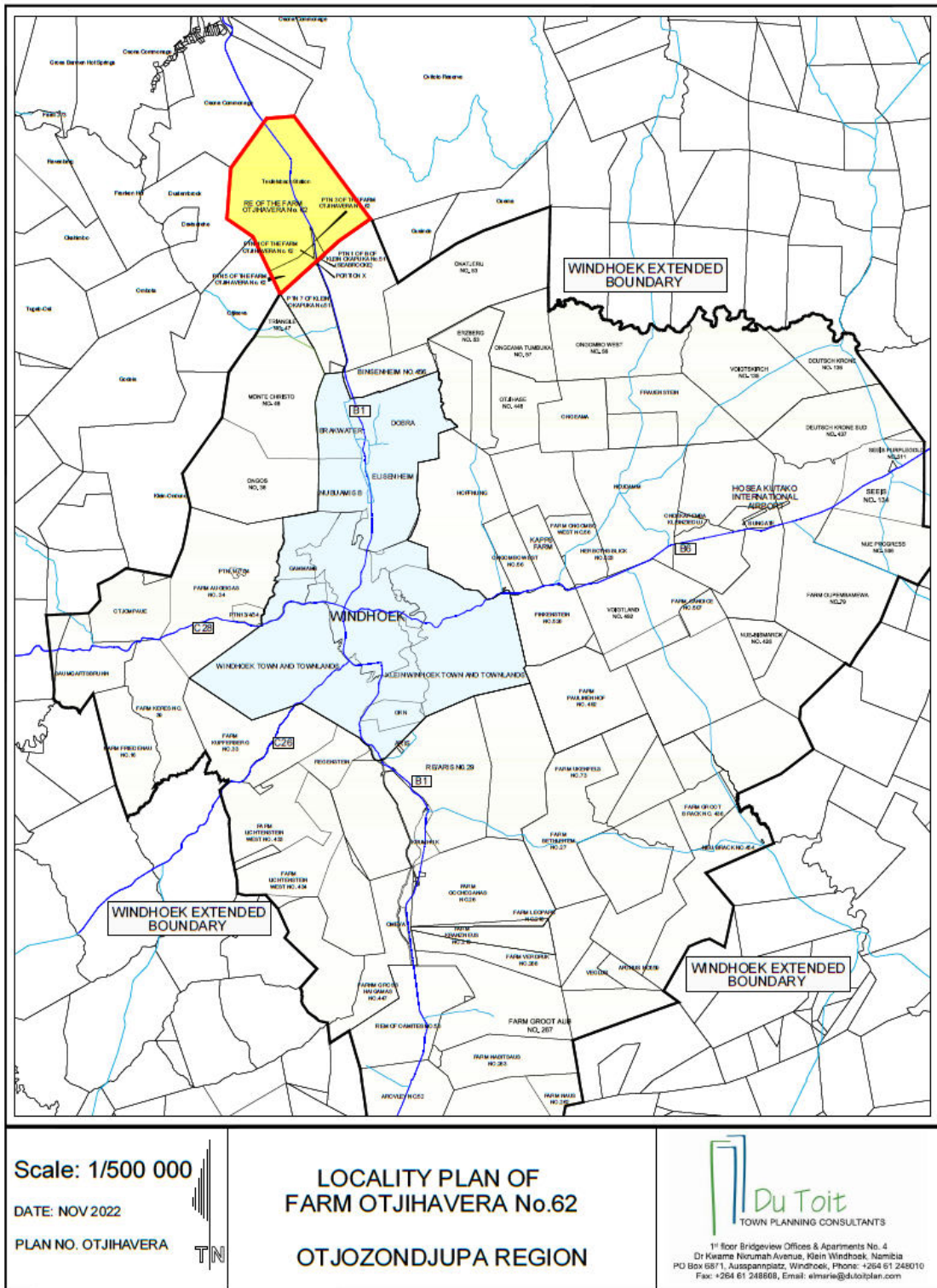


Figure 2: Locality Plan of Farm Otjihavera

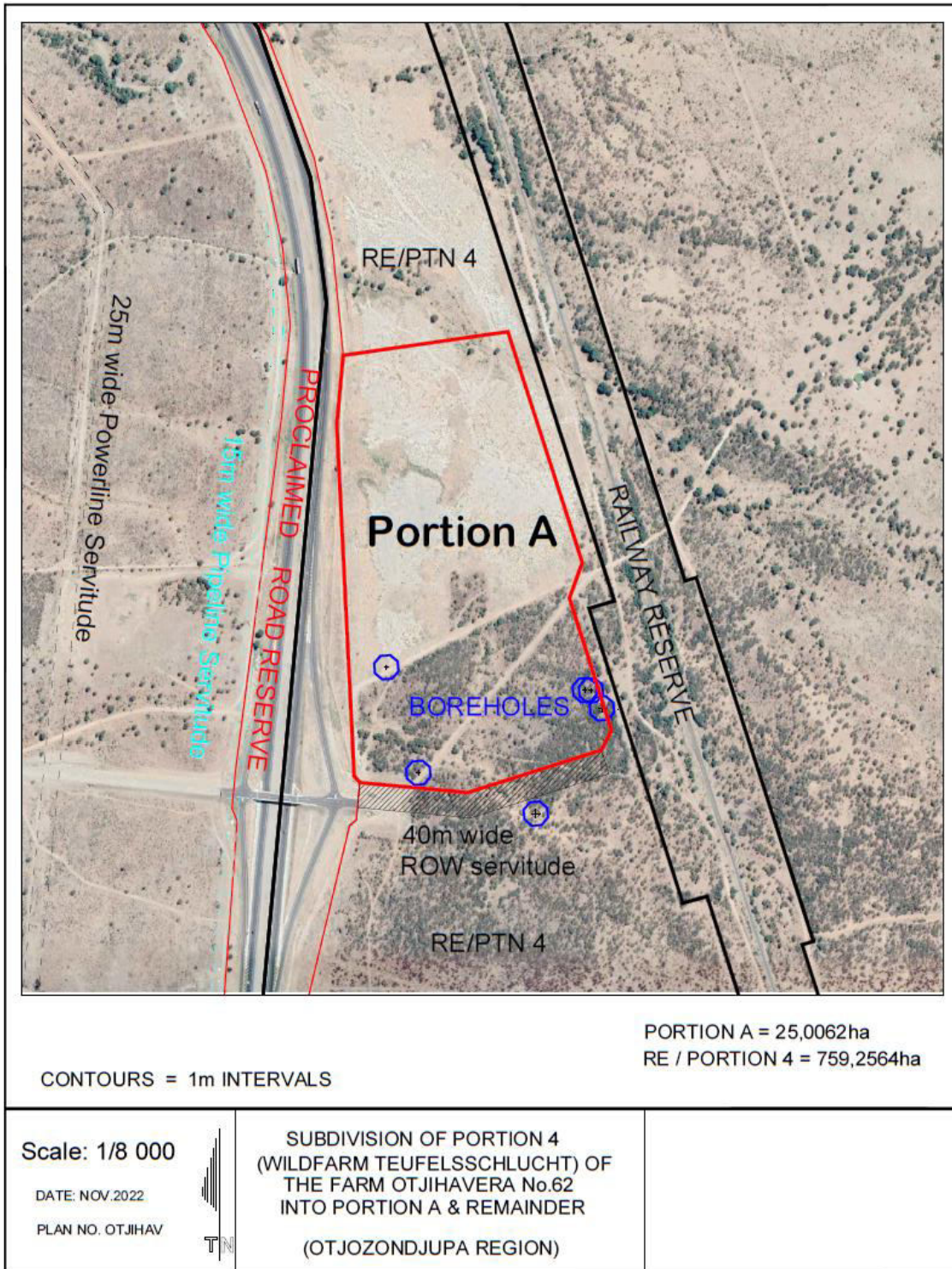


Figure 3: Location where boreholes are situated

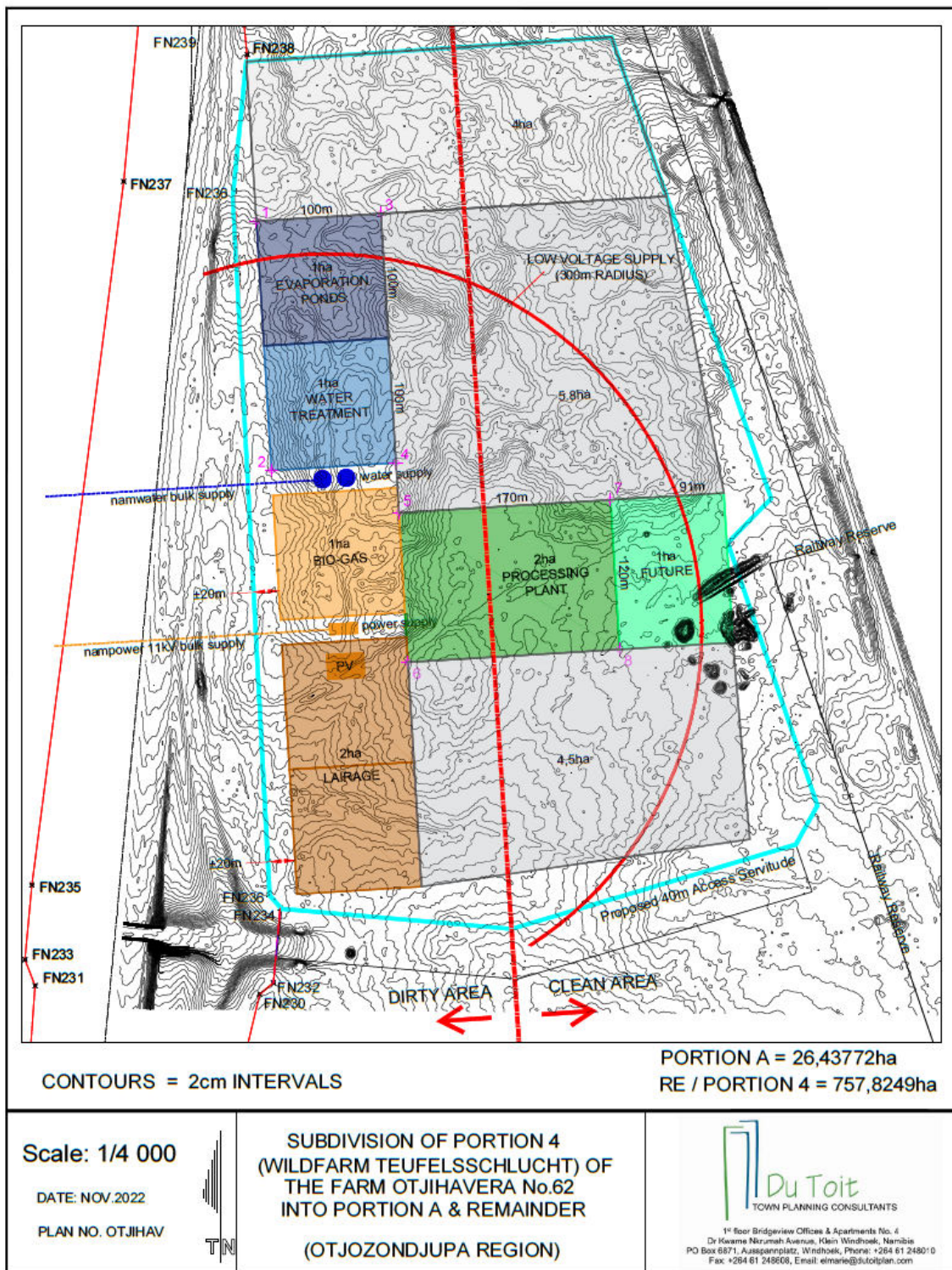


Figure 4: Site layout and placement of facilities

5.1.2. TOPOGRAPHY

The general slope of the area is from the south to the north towards the Swakop River. The area lies in northward extension of the Windhoek Valley with elevated areas to the east and west. The Ojihavera River, a tributary of the Swakop River, flows northward through the area and several west flowing smaller tributaries emanates from the highlands and joins the Otjihavera River. The site is relatively flat, but land scaping will be required for the placement of structures and to provide for surface drainage structures.

5.1.3. VEGETATION

The proposed site forms part of the Tree and Shrub Savannah Biome (specifically the Highland Savannah). The project site is showing evidence of some human interference namely de-bushed areas, old borrow pits as well as informal tracks where the vegetation was cleared.

5.1.4. CURRENT USE

The Portion is currently used for extensive stock and game farming.

6. THE PROPOSED PROJECT

It is the intension to construct and operate a cattle abattoir with supporting infrastructure like temporary cattle holding pens, administrative offices, a water treatment facility, water storage facilities and cold storage facilities on site. The proposed abattoir intends to slaughter 250 head of cattle per 8-hour shift and shall comprise of the following activities and facilities (the following information was obtained from *Procurement of an Engineering Procurement and Construction (EPC) contractor for the Savanna Beef Processing Plant (2022)*):

Abattoir inclusive of:

- Livestock receival by road transport, offloading, identify by ID (electronic tag), record, and live weighing.
- Ante-mortem veterinary inspection, lairing (overnight), pens with covering, and driving to stun (Feeding for stand-over, LSU compartments to be sized based on various types and categories detailed in Part F2, 500 LSU capacity for slaughter stock as well as an additional 3 x 20 LSUs pens to allow for the separation, backloading and return to producer – not eligible for slaughter).
- Stun, ritual slit and bleed, age determination, and hide dressing. Dedicated blood collection, (not into wash water) conveying to road tanker (provided by third party) for dispatch after shift to an off-site blood meal rendering plant or to an off-site biogas plant.
- Evisceration, synchronized inspection (head, hooves, offal with carcass), halving into sides, classification/grading, weigh, and identify by label.

- Sides chill down to 6°C “deep bone” and 2% moisture loss.
- Sides/quarters weigh out (capture in production control system), fresh load-out and dispatch.
- Process control system capturing and recording and transmitting by LSU for full traceability.
- Red offal separation into red offal products, wrapped, packed into cartons, weigh, label and strap.
- Rough offal separation and cleaning into edible white offal products, wrapped, packed into cartons, weighed, labelled and strapped.
- Paunch and intestines content (manure) to be captured separately and conveyed to waste containment and treatment (for potential future utilisation in biogas reactor), thereby minimizing organic solids load of abattoir effluent.
- Offal carton freeze down to -18°C.
- Offal frozen holding, and offal dispatch.
- Storage for packaging material / consumables – must be dust free and pest controlled.
- Storage for chemicals / pesticides / hazardous materials.

Value addition activities like - De-boning and other to the specification of specific markets:

- Weigh in sides and capture into production control system.
- Cut-up sides/quarters for bone-in products, wrap/pack, weigh, label.
- Remove primal cuts (from sides or quarters, preferred on rail method), trim, bag, vacuum pack, weigh, label, deep chill, pack into cartons, weigh, label, strap, and scan cartons.
- Wrap, pack factory beef into cartons, weigh, label, and strap.
- Chill or freeze packaged (bone-in/boneless) beef.
- Chilled and Frozen Holding.
- Load out and dispatch.
- The chain of full control and traceability must be unbroken at all times.
- Approximately 100m² space to accommodate future value addition, patty, mince.

Supporting facilities:

- Amenities (separation of “clean” and “dirty” in facility and flow):
 - Change Rooms and Ablutions
 - Laundry
 - Canteen
 - Welfare, Health, and Safety, inclusive of environmental compliance to Environmental Management Plan, Safety and Emergency plans, and Medical testing
 - Workshop / Maintenance facility
- Offices for:
 - Administration (General Management, Boardroom, Accounts, Procurement, Sales, Training/Meeting Room).

- Meat Industry Services: Veterinary – Animal & Public Health, Export Certification and Meat Board for classification/grading preferably close to the processing areas of the main building.
- Production and Quality Control and Laboratory for microbiological and product quality testing preferably close to the processing areas of the main building.

Supporting infrastructure and Services:

- Water Treatment systems: disinfection/chlorination of process water, heat exchangers, cooling towers, and boilers.
- Hot (84°C) and warm water (45°C) system for sterilization of equipment (knives, saws, cutters etc.).
- Fire detection, alarm and suppression/fighting systems according to SANS 10400 & NPFA standards.
- Refrigeration Plant and equipment.
- Waste, condemned material and hides are accumulated in appropriate containers, properly sealed and dispatched daily to an offsite rendering and / or biogas plant by a third party.
- Internal roads and hard standings within the processing plant fence, including guard house.
- External connection road from B1 off-ramp/turnoff to plant gate.
- Perimeter fence around Plant.
- Internal water distribution and reticulation within the processing plant fence.
- Internal electrical emergency generation, distribution and reticulation within the processing plant fence.
- Internal wastewater collection, pre-treatment and discharge to effluent treatment plant.
- Wash bay for departing cattle trucks.

Systems:

- A full traceability and production control system including weight capture, yield control and unbroken traceability from animal to product to customer – “Farm to Fork” guidelines.
- Production Control system.
- Quality Control & Assurance System inclusive of HACCP system and Laboratory LIMS system.
- ISO/FSSC22000 and / or BRC accreditation.
- Temperature Control, Recording and Monitoring System.
- Pest control and management system.
- Safety and Emergency Plan.
- Quality Control and Assurance System including Laboratory LIMS system.
- Product control down the slaughtering and processing lines, packing, transport and marketing to assess and control the product e.g. by bar codes, weights, etc.
- Security system, access control and security floodlights.

7. BULK SERVICES AND INFRASTRUCTURE

It must be noted that the proposed site of the abattoir is in a farming area without municipal or bulk services. The required bulk services must therefore be brought to the site or provided on the site. The abattoir will require the following bulk services:

7.1.ACCESS

The Portion will take access from the intersection from Trunk Road B1 directly southwest of Portion A. A 40m wide right of way servitude will be registered over the Remainder of Portion 4 (Wildfarm Teufelsschlucht) of the Farm Otjihavera No. 62, Otjozondjupa Region, directly to the south of Portion A from which the abattoir site will take access. The access to proposed Portion 4 is shown on the map below:

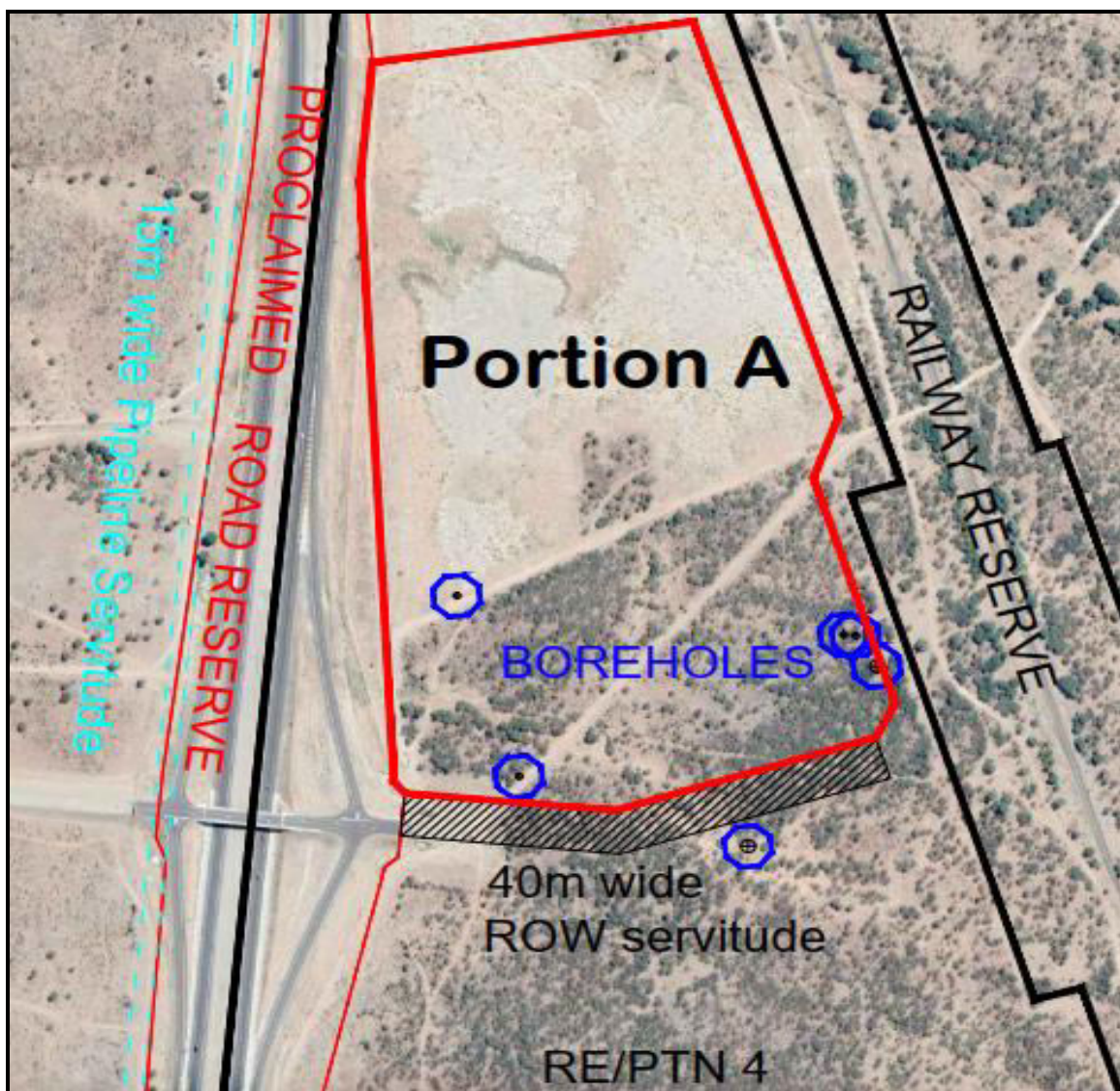


Figure 5: Access to Portion 4

This access has been approved and constructed by the Roads Authority.

7.2.WATER SUPPLY/ REQUIREMENTS

The proposed cattle abattoir and supporting infrastructure will require $\pm 360\text{m}^3$ water per day. The water demand is based on the assumption that a maximum of 300 livestock units will be slaughtered in peak supply periods and in non-peak periods 250 livestock units per day will be slaughtered. Water will be obtained from the following sources:

- NamWater – an application has been submitted to NamWater for a maximum demand of $360\text{m}^3/\text{day}$ – connection is available from the Von Bach Dam – Windhoek line located just west of Portion A, west of the Trunk Road.
- Onsite boreholes – these boreholes have sustainable capacity of $130\text{m}^3/\text{day}$. The MAWLR legalised five boreholes and approved a permit for the extraction of groundwater for processing and domestic purposes on Portion 4 (Wildfarm Teufelsschlucht) of the Farm Otjihavera No. 62 which will be used for the operations of the abattoir. See attached a copy of Permit 11687 and the MAWLR's approval letter.
- Recycling of water – it is estimated that 40% of the water used can be recycled.

The water demand/supply is summarized in the *Table* below:

Table 1: Water demand/supply

Resource used	Units	Units/month Estimated	Units/annum Estimated
Livestock units slaughtered	<i>300/day</i>	<i>6600</i>	<i>79200</i>
Total water requirement	<i>1.2m³/Livestock Unit or 360m³/day</i>	<i>10950m³</i>	<i>131400m³</i>
Water from boreholes	<i>130m³/day</i>	<i>3954,2m³</i>	<i>47450m³</i>
Recycled water	<i>40% of total daily use – 144m³</i>	<i>4380m³</i>	<i>52560m³</i>
Water to obtain from NamWater	<i>$\pm 86\text{m}^3/\text{day}$</i>	<i>2616m³</i>	<i>31390m³</i>

The infrastructure for connecting to NamWater and extracting water from the boreholes will be provided by the Proponent and / or their subcontractors.

7.3.ELECTRICITY

The abattoir and supporting activities will require $\pm 100\text{kWh}$ per livestock unit slaughtered. The electricity demand assumes that a maximum of 300 livestock units/day will be slaughtered in peak supply periods (average 250/day) as per the assumptions in the *Table* below. The *Table* below summarises the power requirements and how it will be supplied:

Table 2: Electricity requirements

Resource used	Units	Units/month Estimated	Units/annum Estimated
Livestock units slaughtered	<i>300/day</i>	<i>6600</i>	<i>79200</i>
Total electricity requirement	<i>kWh/Livestock Unit 100</i>	<i>500 000 kWh MD 1.2MVA?</i>	<i>6 MWh</i>
Electricity from NamPower	<i>?</i>	<i>500 000 kWh 1.2MVA?</i>	<i>6 MWh</i>
Electricity from green sources	<i>30 kWh/SU via MSBM</i>	<i>150 000kWh via MSBM</i>	<i>1.8MWh</i>

Electricity will be obtained from NamPower and an onsite 500kWh Photovoltaic Plant. The abattoir will be linked to the NamPower network at the NamWater Booster Station which is located $\pm 10\text{km}$ to the south of the site. The line will be a 11kV OHL (12m H-pole structures with cross arm and suspension insulators - average 100m spans between pole structures) and will be handed over to NamPower once constructed and in operation. The proposed alignment of the powerline is shown on the plan below:

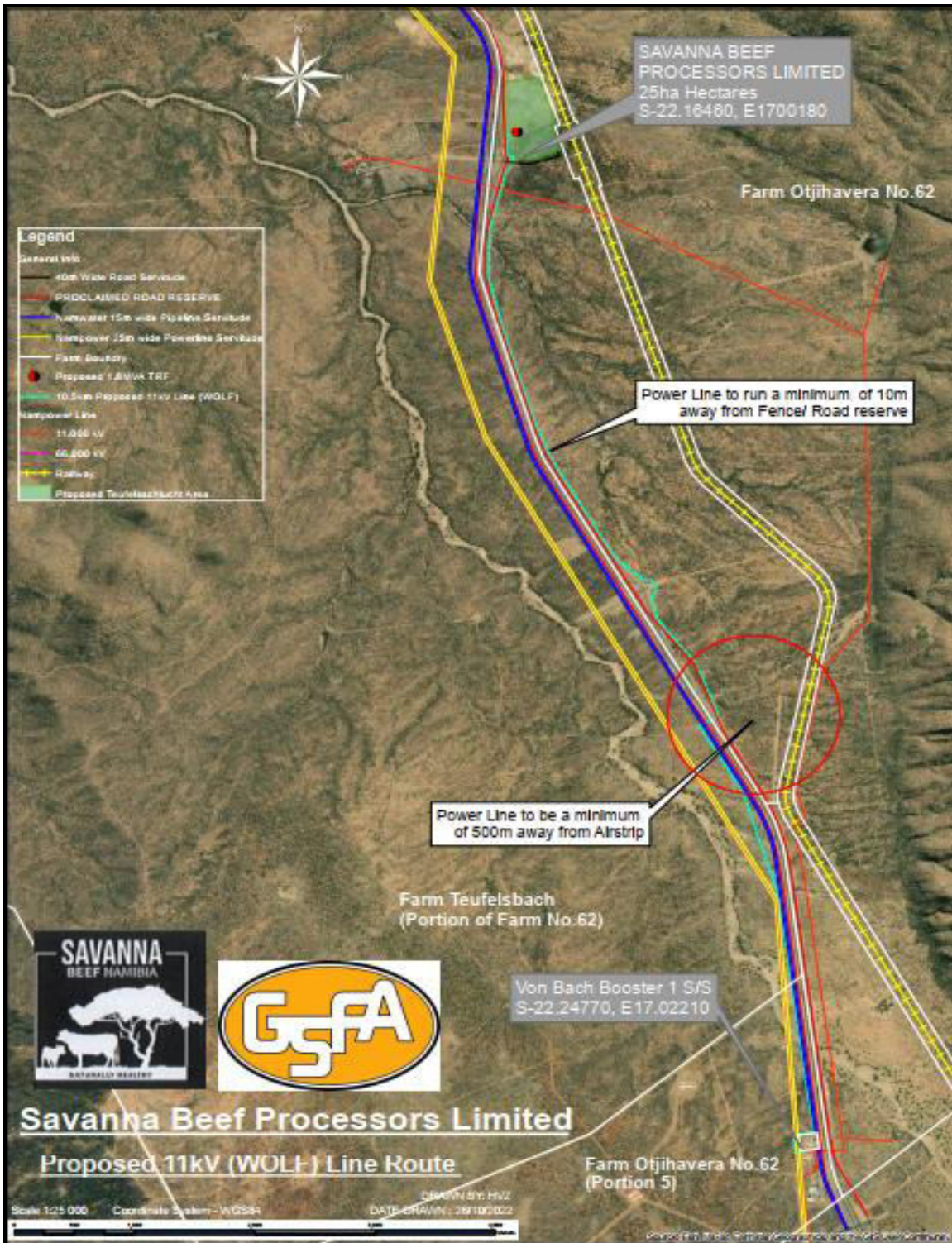


Figure 6: Proposed alignment of the powerline to the abattoir site

7.4. SEWAGE DISPOSAL

The abattoir and supporting facilities will generate 1125m³ of non-hazardous wastewater per week. The wastewater will be treated on site with an effluent treatment plant. The proponent intends to contract Aqua Services & Engineering (Pty) Ltd (ASE), a specialist

in water treatment, to provide the infrastructure and technologies and specialist services and to manage the treatment plant under a subcontractor's agreement with the option to take over the function after a specified time. ASE will provide and manage the effluent treatment and reclamation plant for the treatment of effluent originating from abattoir processes and supporting facilities. The plant includes an advanced biological treatment plant incorporating a pond system followed by a new generation trickling filter plant, filtration and advanced reverse osmosis system. ASE will also be responsible to monitor water quality and assure that required standards are maintained. The proposed plant will be designed on a treatment capacity of 300m³/day which will be mainly discharged during the day, for 5 days per week, but will be treated over a 24 hour period for 7 days per week, therefore averaging 200 m³/d (7-day average). The final water quality should reach a standard (Potable Standard) that it can be reused in the factory and that approximately above 80% of effluent can be reused.

7.5. STORM WATER AND DRAINAGE

The general slope of the site is from the south to the north. Old borrow pits are located on the site. Seasonal flooding of these pits and surroundings have been observed. The natural flow of storm water and drainage must be minimally disturbed, and the natural flow accommodated where possible. Provision must be made for the accommodation of surface water/stormwater management as it may endanger infrastructure. It is also advised that the 1:50 year flood risk area is identified, and that no infrastructure development is done in the flood risk area.

7.6. SOLID WASTE

The *Table* below summarise the type of waste as well as estimated quantities to be generated from the activities of the abattoir and supporting facilities:

Table 3: Solid waste to be produced on site

Kind of waste	Hazardous (H) vs. Non-Hazardous (NH) waste	Quantity per Week (kg) / week Estimated	Cost of Waste Disposal N\$	Disposed (place / site / method)
Paunch Content and Manure	NH	46 155		Biomass Plant
Special risk material	i.e. Spinal cord etc.	500	1 800/m ³	To be collected and treated by specialist

				subcontractor
Condemned Material	NH	20 900	1 800/m ³	Rendering off-site by specialist contractor
Blood	NH	23 100		Rendering off-site by specialist contractor
Sludge	NH	unknown	unknown	Biomass Plant
General waste	NH	unknown	unknown	To be collect on site by specialist waste recycler

The Proponent intends to appoint and contract specialist waste managers to collect and dispose of the waste generated on the site. The proponent must ensure that the subcontractors complied with the applicable Namibian Legislation, Policies and Practices.

7.7. FIRE PROTECTION

The Proponent will put in the necessary fire protection infrastructure / extinguishers as per requirements. It is advised that a specialist Fire Protection Specialist is contracted to introduce a proper fire protection plan with the required infrastructure and to oversee the annual auditing and maintenance of the infrastructure.

8. APPROACH TO THE STUDY

The assessment included the following activities:

- a) Desktop sensitivity assessment

Literature, legislation and guidance documents related to the natural environment and land use activities available on the portion and area in general were reviewed to determine potential environmental issues and concerns.

b) Site assessment (site visit)

The proposed project site and the immediate neighbourhood and surrounding area were assessed through several site visits to investigate the environmental parameters on site to enable further understanding of the potential impacts on site.

c) public participation

The public was invited to give input, comments and opinions regarding the proposed project. Notices were placed in the Namibian and New Era Newspapers on two consecutive weeks inviting public participation and comments on the proposed project. A notice was also displayed on the site. The final date for receiving comments was 13 January 2023. See attached copies of the notices.

d) Scoping

Based on the desk top study, site visit and public participation, the environmental impacts were determined in five categories: nature of project, expected duration of impact, geographical extent of the event, probability of occurring and the expected intensity. The findings of the scoping have been incorporated in the environmental impact assessment report below.

e) Environmental Management Plan (EMP)

To minimize the impact on the environment, mitigation measures have been identified to be implemented during planning, construction, and implementation. These measures have been included in the Environmental Management Plan to guide the planning, construction and operation of the development which can also be used by the relevant authorities to ensure that the project is planned, developed, and operated with the minimum impact on the environment.

9. ASSUMPTIONS AND LIMITATIONS

It is assumed that the information provided by the proponent, the engineers, the geologist, the water recyclers and town planners is accurate. No alternative portions/farms for the proposed project were examined. The site was visited several times and any happenings after this are not mentioned in this report. (The assessment was based on the prevailing environmental conditions and not on future happenings on the site.) However, it is assumed that there will be no significant changes to the proposed project, and the environment will not adversely be affected between the compilation of the assessment and the implementation of the proposed activities.

10. ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programs and policies deemed to have adverse impacts on the environment require an EIA according to Namibian legislation. The administrative, legal and policy requirements to be considered during the Environmental Assessment for the proposed project are the following:

- The Namibian Constitution
- The Environmental Management Act (No. 7 of 2007)
- Other Laws, Acts, Regulations and Policies

THE NAMIBIAN CONSTITUTION

Article 95 of Namibia's constitution provides that:

“The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the following:

Management of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; in particular, the Government shall provide measures against the dumping or recycling of foreign nuclear and toxic waste on Namibian territory.” This article recommends that a relatively high level of environmental protection is called for in respect of pollution control and waste management.

Article 144 of the Namibian Constitution deals with environmental law and it states:

“Unless otherwise provided by this Constitution or Act of Parliament, the general rules of public international agreements binding upon Namibia under this Constitution shall form part of the law of Namibia”. This article incorporates international law, if it conforms to the Constitution, automatically as “law of the land”. These include international agreements, conventions, protocols, covenants, charters, statutes, acts, declarations, concords, exchanges of notes, agreed minutes, memoranda of understanding, and agreements (Ruppel & Ruppel-Schlichting, 2013). It is therefore important that the international agreements and conventions are considered (see section 4.9).

In considering these environmental rights, Savanna Beef Processors Ltd (the Proponent) should consider the following in devising an action plan in response to these articles:

- Implement a “zero-harm” policy at that would guide decisions.
- Ensure that no management practice or decision result in the degradation of future natural resources.
- Take a decision on how this part of the Constitution will be implemented as part of the Proponent's Environmental Control System (ECS).

ENVIRONMENTAL MANAGEMENT ACT (NO. 7 OF 2007)

The Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) of the Environmental Management Act (No. 7 of 2007) that came into effect in 2012 requires/recommends that an Environmental Impact Assessment and an Environmental Management Plan (EMP) be conducted for the following listed activities to obtain an Environmental Clearance Certificate:

WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES

- *The construction of facilities for waste sites, treatment of waste and disposal of waste.*
- *Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976.*
- *The import, processing, use and recycling, temporary storage, transit or export of waste.*

ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

The construction of facilities for –

- *The generation of electricity.*
- *The transmission and supply of electricity.*

WATER RESOURCE DEVELOPMENTS

- *The abstraction of ground or surface water for industrial or commercial purposes.*

HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE

- *The storage and handling of a dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.*
- *Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin.*

INFRASTRUCTURE

The route determination of roads and design of associated physical infrastructure where –

- *It is a public road.*
- *The road reserve is wider than 30 meters; or*
- *The road caters for more than one lane of traffic in both directions.*

Cumulative impacts associated with the development must be included as well as public consultation. The Act further requires all major industries and mines to prepare waste management plans and present these to the local authorities for approval.

The Act, Regulations, Procedures and Guidelines have integrated the following sustainability principles. These need to be given due consideration, particularly to achieve proper waste management and pollution control:

Cradle to Grave Responsibility

This principle provides that those who handle or manufacture potentially harmful products must be liable for their safe production, use and disposal and that those who initiate potentially polluting activities must be liable for their commissioning, operation and decommissioning.

Precautionary Principle

It provides that if there is any doubt about the effects of a potentially polluting activity, a cautious approach must be adopted.

The Polluter Pays Principle

A person who generates waste or causes pollution must, in theory, pay the full costs of its treatment or of the harm, which it causes to the environment.

Public Participation and Access to Information

In the context of environmental management, citizens must have access to information and the right to participate in decisions making.

CONCLUSION AND IMPACT

The proposed activity will fit in with the surrounding activities and not have a negative impact on the prevailing environment. It will be ensured that all protected trees and plant species will be retained where possible.

OTHER LAWS, ACTS, REGULATIONS AND POLICIES

The laws, acts, regulations, and policies listed below have also been considered during the Environmental Assessment.

Table 1: Laws, Acts, Regulations and Policies

Laws, Acts, Regulations & Policies consulted:		
Electricity Act (No. 4 of 2007)	In accordance with the Electricity Act (No. 4 of 2007) which provides for the establishment of the Electricity Control Board and provide for its powers and functions; to provide for the	The Proponent must abide to the Electricity Act.

	requirements and conditions for obtaining licenses for the provision of electricity; to provide for the powers and obligations of licenses; and to provide for incidental matters: the necessary permits and licenses will be obtained.	
Pollution Control and Waste Management Bill (guideline only)	The Pollution Control and Waste Management Bill is currently in preparation and is therefore included as a guideline only. Of reference to the mining, Parts 2, 7 and 8 apply. Part 2 provides that no person shall discharge or cause to be discharged, any pollutant to the air from a process except under and in accordance with the provisions of an air pollution license issued under section 23. Part 2 also further provides for procedures to be followed in license application, fees to be paid and required terms of conditions for air pollution licenses. Part 7 states that any person who sells, stores, transports or uses any hazardous substances or products containing hazardous substances shall notify the competent authority, in accordance with subsection (2), of the presence and quantity of those substances. The competent authority for the purposes of section 74 shall maintain a register of substances notified in accordance with that section and the register shall be maintained in accordance with the provisions. Part 8 provides for emergency preparedness by the person handling hazardous substances, through emergency response plans.	The Proponent must adhere to the Pollution Control and Waste Management Bill.
Water Resources Management Act	The Water Resources Management Act (No. 11 of 2013) stipulates conditions that ensure effluent that is produced to be of a	The Act must be consulted. Fresh water abstraction and waste-water discharge permits should be obtained when

	certain standard. There should also be controls on the disposal of sewage, the purification of effluent, measures should be taken to ensure the prevention of surface and groundwater pollution and water resources should be used in a sustainable manner.	required.
Solid and Hazardous Waste Management Regulations: Local Authorities 1992	Provides for management and handling of industrial, business and domestic waste.	The Proponent must abide to the solid waste management provisions.
Hazardous Substances Ordinance (No. 14 of 1974)	The Ordinance applies to the manufacture, sale, use, disposal and dumping of hazardous substances, as well as their import and export and is administered by the Minister of Health and Social Welfare. Its primary purpose is to prevent hazardous substances from causing injury, ill-health or the death of human beings.	The Proponent must abide to the Ordinance's provisions.
Atmospheric Pollution Prevention Ordinance of Namibia (No. 11 of 1976)	Part 2 of the Ordinance governs the control of noxious or offensive gases. The Ordinance prohibits anyone from carrying on a scheduled process without a registration certificate in a controlled area. The registration certificate must be issued if it can be demonstrated that the best practical means are being adopted for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process.	The proponent should adhere to the stipulations of the Atmospheric Pollution Prevention Ordinance.
Nature Conservation Ordinance	The Nature Conservation Ordinance (No. 4 of 1975) covers game parks and nature reserves, the hunting and protection of wild animals, problem animals, fish and indigenous plant species. The	The proposed project implementation is not located in a demarcated conservation area, national park or unique environments.

	Ministry of Environment, Forestry and Tourism (MEFT) administer it and provides for the establishment of the Nature Conservation Board.	
Forestry Act	The Forestry Act (No. 12 of 2001) specifies that there be a general protection of the receiving and surrounding environment. The protection of natural vegetation is of great importance, the Forestry Act especially stipulates that no living tree, bush, shrub or indigenous plants within 100m from any river, stream or watercourse, may be removed without the necessary license.	No removal of protected tree species or removal of mature trees should happen. The Ministry of Environment, Forestry and Tourism should be consulted when required.
Labour Act	The Labour Act (No. 11 of 2007) contains regulations relating to the Health, Safety and Welfare of employees at work. These regulations are prescribed for among others safety relating to hazardous substances, exposure limits and physical hazards. Regulations relating to the Health and Safety of Employees at Work are promulgated in terms of the Labour Act 6 of 1992 (GN156, GG1617 of 1 August 1997).	The proponent and contractor should adhere to the Labour Act.
Communal Land Rights	Communal land is land that belongs to the State and is held in trust for the benefit of the traditional communities living in those areas. Communal land cannot be bought or sold, but one can be given a customary land right or right of leasehold to a part of communal land in accordance with the provisions of the Communal Land Reform Act (No. 5 of 2002) and Communal Land Reform Amendment Act (No. 13 of 2013) . The Communal Land Reform Act provide for the allocation of rights in respect of communal land to establish Communal Land Boards to provide	Consent should be obtained from Traditional Authorities, Communal Boards, Chiefs, Kings, Queens etc. if required.

	for the powers of Chiefs and Traditional Authorities and boards in relation to communal land and to make provision for incidental matters. Consent and access to land for the proposed project should be requested from the relevant traditional authority through the Regional Council and Regional Communal Land Boards.	
Traditional Authorities Act (No. 17 of 1995)	The Traditional Authorities Act (No. 17 of 1995) provide for the establishment of traditional authorities, the designation and recognition of traditional leaders; to define their functions, duties and powers; and to provide for matters incidental thereto.	Traditional Authorities should be consulted when required.
Public and Environmental Health Act	The Public and Environmental Health Act (No. 1 of 2015) provides with respect to matters of public health in Namibia. The objects of this Act are to: (a) promote public health and wellbeing; (b) prevent injuries, diseases and disabilities; (c) protect individuals and communities from public health risks; (d) encourage community participation in order to create a healthy environment; and (e) provide for early detection of diseases and public health risks.	The proponent and contractor should adhere to the Public and Environmental Health Act.
Coronavirus (Covid-19) Pandemic	The current global Coronavirus (Covid-19) pandemic and the associated State of Emergency and health restrictions globally may result in some delays and logistic disruptions. The pandemic might have an impact on obtaining equipment, specialist workforce mobilisation and implementation of the project. The health restrictions may have an impact on campsite set-up, traveling of personal/workers and building of the infrastructure. The proponent, contractor and subcontractors	The proponent, contractor and workforce should adhere to the restrictions and regulations.

	should adhere to all the international, regional and local Covid-19 health restrictions and protocols.	
National Heritage Act (No. 27 of 2004)	All protected heritage resources discovered need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before it may be relocated. This should be applied from the NHC.	The National Heritage Council should be consulted when required.
National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979	No person shall destroy, damage, excavate, alter, remove from its original site or export from Namibia: (a) any meteorite or fossil; or (b) any drawing or painting on stone or a petroglyph known or commonly believed to have been executed by any people who inhabited or visited Namibia before the year 1900 AD; or (c) any implement, ornament or structure known or commonly believed to have been used as a mace, used or erected by people referred to in paragraph; or (d) the anthropological or archaeological contents of graves, caves, rock shelters, middens, shell mounds or other sites used by such people; or (e) any other archaeological or palaeontological finds, material or object; except under the authority of and in accordance with a permit issued under this section.	The proposed site for development is not within any known monument site both movable or immovable as specified in the Act, however in such an instance that any material or sites or archeologic importance are identified, it will be the responsibility of the developer to take the required route and notify the relevant commission.
Public Health Act (No. 36 of 1919)	Under this act, in section 119: “No person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.”	The proponent will ensure that all legal requirements of the project in relation to protection of the health of their employees and surrounding residents is protected and will be included in the EMP. Relevant protective equipment shall be provided for employees in construction.

		The development shall follow requirements and specifications in relation to water supply and sewerage handling and solid waste management so as not to threaten public health of future residents on this piece of land.
Soil Conservation Act (No. 76 of 1969)	The objectives of this Act are to: Make provisions for the combating and prevention of soil erosion; Promote the conservation, protection and improvement of the soil, vegetation, sources and resources of the Republic;	Only the area required for the operations should be cleared from vegetation to ensure the minimum impact on the soil through clearance for construction.
Air Quality Act (NO. 39 of 2004)	The Air Quality Act (No. 39 of 2004) intends to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto.	The proponent and contractor should adhere to the Air Quality Act.
Vision 2030 and National Development Plans	Namibia's overall development ambitions are articulated in the Nation's Vision 2030. At the operational level, five-yearly national development plans (NDP's) are prepared in extensive consultations led by the National Planning Commission in the Office of the President. Currently the Government has so far launched a 4th NDP which pursues three overarching goals for the Namibian nation: high and sustained economic growth; increased income equality; and employment creation.	The proposed project is an important element in employment creation.

CONCLUSION AND IMPACT

It is believed the above administrative, legal and policy requirements which guide and governs development will be followed and complied with in the planning, implementation and operations of the activity.

A flowchart indicating the entire EIA process is shown in the *Figure* below.

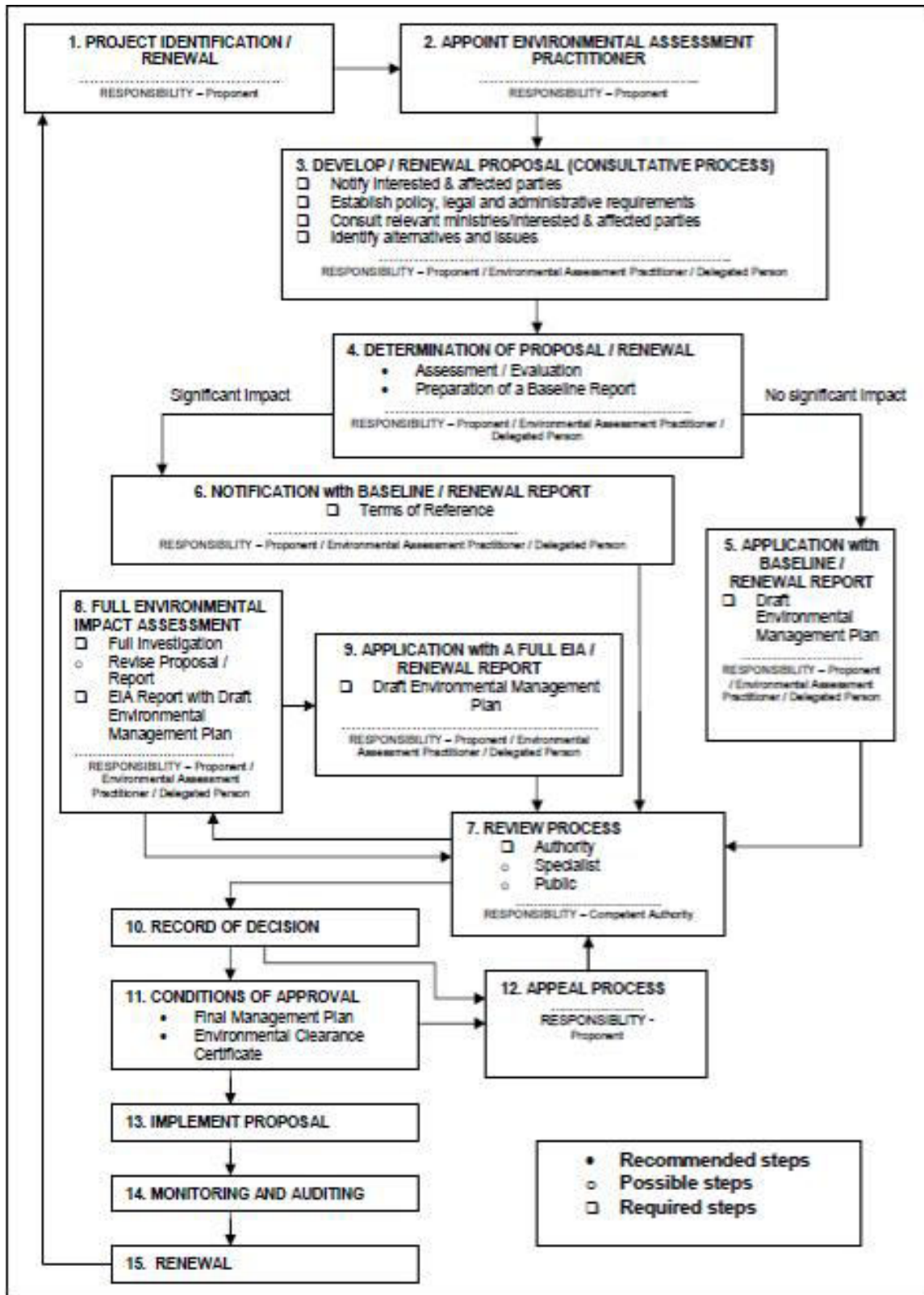


Figure 7: Flowchart of the Impact Process

11. AFFECTED RECEIVING ENVIRONMENT

11.1. BIODIVERSITY AND VEGETATION

Portion 4, Otjihavera forms part of the Tree and Shrub Savannah Biome (specifically the Highland Savannah). The project site is showing evidence of some human interference namely borrow pits, informal tracks are present and vegetation was cleared on some areas of the farm and a few gravel roads are present on the site.

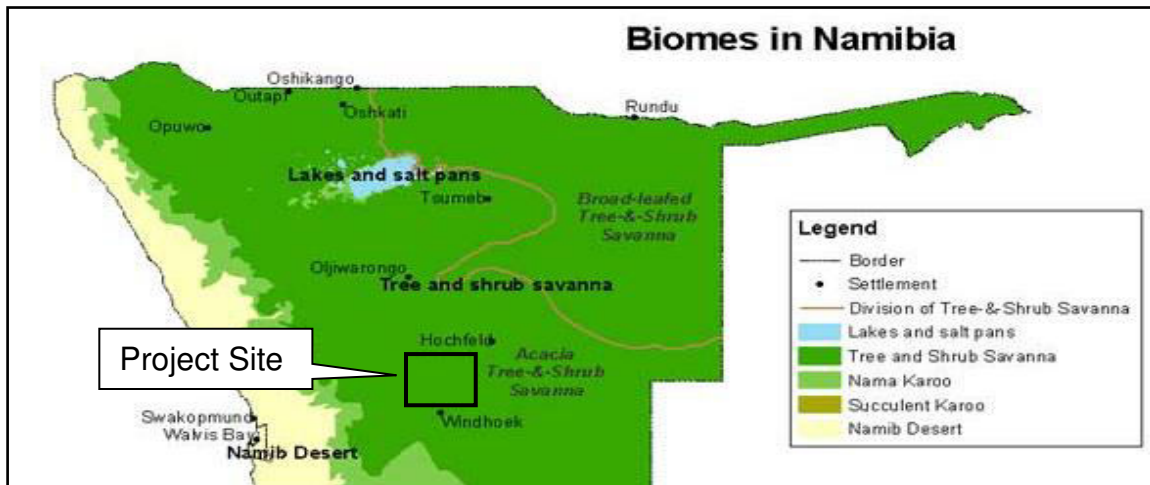


Figure 8: Biomes in Namibia (Atlas of Namibia, 2002)



Figure 9: Vegetation on the site

Only the necessary plants/vegetation will be removed for the construction phase. The natural characteristics of the project site namely the vegetation clearance and the destruction of habitats is expected to further on have a low impact on the environment before the mitigation measures are taken and after the mitigation measures are taken, the impact will be very low.

11.2. AVIFAUNA

Power will be supplied to the abattoir from the NamPower network at the NamWater Booster Station which is located $\pm 10.5\text{km}$ to the south of the site. The line will be a 11kV OHL (12m H-pole structures with cross arm and suspension insulators - average 100m spans between pole structures) and will be $\pm 10.5\text{km}$ long. It will be aligned as per the plan below:

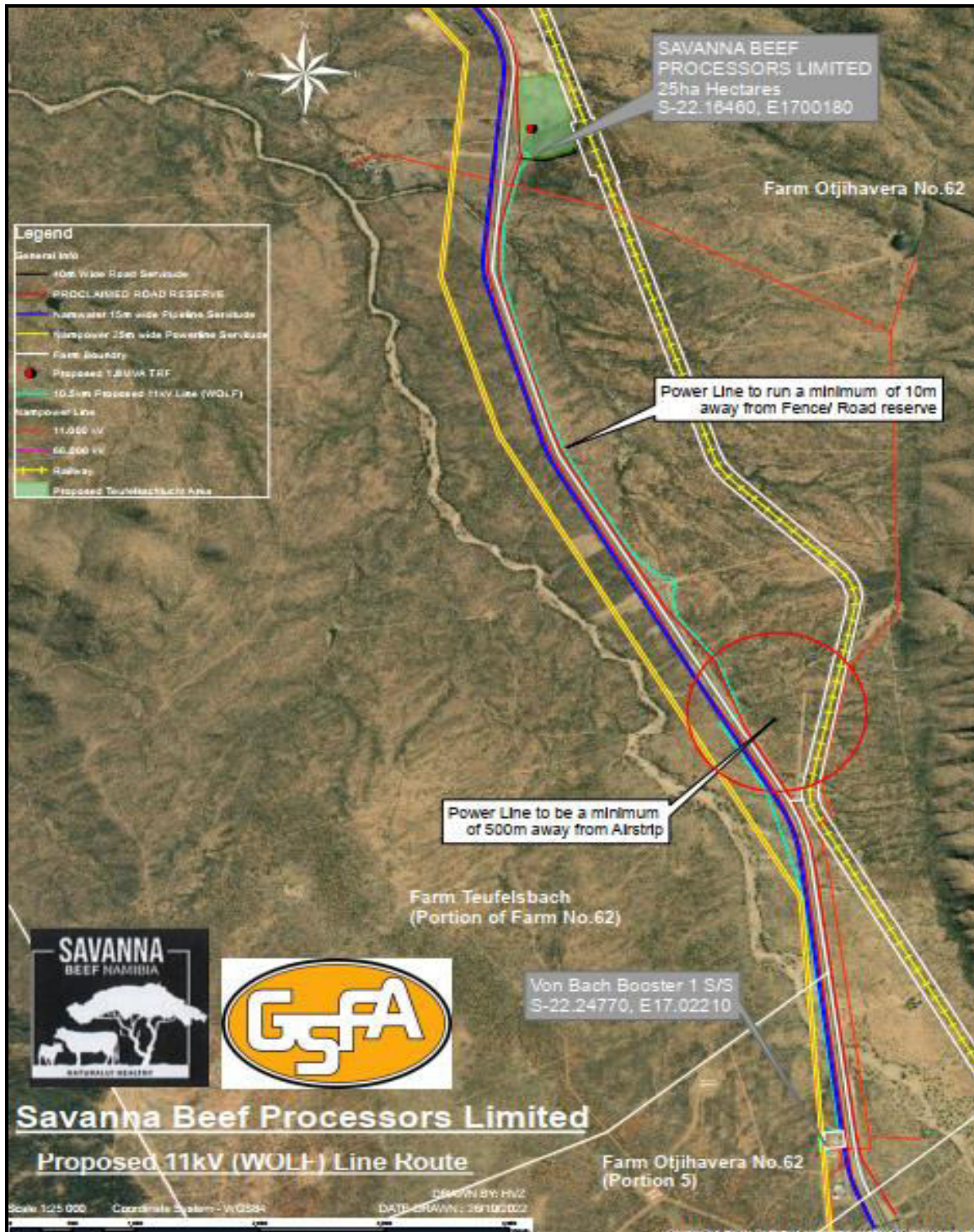


Figure 7: Powerline alignment



Figure 8: Powerline alignment with surrounding activities

The *table* below indicates the avian diversity known and/or expected to occur in the general Windhoek area. This *table* excludes marine and other aquatic birds (e.g., Petrel, Albatross, Skua, & various ducks, etc.) and species breeding extralimital (e.g., stints, sandpipers, etc.) and rather focuses on birds that are breeding residents or can be found in the area during any time of the year. This would imply that many more birds (e.g., Palearctic migrants) could occur in the area depending on “favourable” environmental conditions.

Table 4: Avian diversity known/expected to occur in the general Windhoek area

Species: Scientific name	Species: Common name	Status: Namibia	Status: Southern Africa
<i>Struthio camelus</i>	Common Ostrich		
<i>Scleroptila levaillantoides</i>	Orange River Francolin		Near endemic
<i>Pternistis hartlaubi</i>	Hartlaub's Spurfowl	Endemic	Near endemic
<i>Pternistis adspersus</i>	Red-billed Spurfowl		Near endemic
<i>Pternistis swainsonii</i>	Swainson's Spurfowl		
<i>Coturnix coturnix</i>	Common Quail		
<i>Coturnix delegorguei</i>	Harlequin Quail		
<i>Numida meleagris</i>	Helmeted Guineafowl		
<i>Turnix sylvaticus</i>	Kurrichane Buttonquail		
<i>Indicator minor</i>	Lesser Honeyguide		
<i>Campethera bennettii</i>	Bennett's Woodpecker		
<i>Campethera abingoni</i>	Golden-tailed Woodpecker		
<i>Dendropicos fuscescens</i>	Cardinal Woodpecker		
<i>Dendropicos namaquus</i>	Bearded Woodpecker		
<i>Tricholaema leucomelas</i>	Acacia Pied Barbet		Near endemic
<i>Tockus monteiri</i>	Monteiro's Hornbill	Endemic	
<i>Tockus damarensis</i>	Damara Hornbill	Endemic	Near endemic
<i>Tockus leucomelas</i>	Southern Yellow-billed Hornbill		Near endemic
<i>Tockus nasutus</i>	African Grey Hornbill		
<i>Upupa africana</i>	African Hoopoe		
<i>Phoeniculus purpureus</i>	Green Wood-Hoopoe		
<i>Phoeniculus damarensis</i>	Violet Wood-Hoopoe	Endemic	
<i>Rhinopomastus cyanomelas</i>	Common Scimitarbill		
<i>Coracias caudatus</i>	Lilac-breasted Roller		
<i>Coracias naevius</i>	Purple Roller		
<i>Merops hirundineus</i>	Swallow-tailed Bee-eater		
<i>Merops persicus</i>	Blue-cheeked Bee-eater		
<i>Colius colius</i>	White-backed Mousebird		Endemic
<i>Urocolius indicus</i>	Red-faced Mousebird		
<i>Poicephalus rueppellii</i>	Rüppell's Parrot	Endemic	Near endemic
<i>Agapornis roseicollis</i>	Rosy-faced Lovebird	Endemic	Near endemic

<i>Cypsiurus parvus</i>	African Palm Swift		
<i>Tachymarptis melba</i>	Alpine Swift		
<i>Apus bradfieldi</i>	Bradfield's Swift		Near endemic
<i>Apus affinis</i>	Little Swift		
<i>Apus horus</i>	Horus Swift		
<i>Apus caffer</i>	White-rumped Swift		
<i>Corythaixoides concolor</i>	Grey Go-away Bird		
<i>Tyto alba</i>	Barn Owl		
<i>Otus senegalensis</i>	African Scops-Owl		
<i>Ptilopsis granti</i>	Southern White-faced Scops- Owl		
<i>Bubo africanus</i>	Spotted Eagle Owl		
<i>Bubo lacteus</i>	Verreaux's Eagle-Owl		
<i>Glaucidium perlatum</i>	Pearl-spotted Owlet		
<i>Glaucidium capense</i>	African Barred Owlet		
<i>Caprimulgus pectoralis</i>	Fiery-necked Nightjar		
<i>Caprimulgus tristigma</i>	Freckled Nightjar		
<i>Caprimulgus rufigena</i>	Rufous-cheeked Nightjar		
<i>Columba livia</i>	Rock Dove		
<i>Columba guinea</i>	Speckled Pigeon		
<i>Streptopelia capicola</i>	Cape Turtle Dove		
<i>Streptopelia senegalensis</i>	Laughing Dove		
<i>Oena capensis</i>	Namaqua Dove		
<i>Neotis ludwigii</i>	Ludwig's Bustard		Near endemic
<i>Ardeotis kori</i>	Kori Bustard		
<i>Lophotis ruficrista</i>	Red-crested Korhaan		Near endemic
<i>Afrotis afraoides</i>	Northern Black Korhaan		Endemic
<i>Eupodotis rueppellii</i>	Rüppell's Korhaan	Endemic	Near endemic
<i>Pterocles namaqua</i>	Namaqua Sandgrouse		Near endemic
<i>Pterocles bicinctus</i>	Double-banded Sandgrouse		Near endemic
<i>Pterocles burchelli</i>	Burchell's Sandgrouse		Near endemic
<i>Burhinus capensis</i>	Spotted Thick-knee		
<i>Vanellus armatus</i>	Blacksmith Lapwing		
<i>Vanellus coronatus</i>	Crowned Lapwing		
<i>Rhinoptilus africanus</i>	Double-banded Courser		
<i>Rhinoptilus chalcopterus</i>	Bronze-winged Courser		
<i>Cursorius rufus</i>	Burchell's Courser		Near endemic

<i>Cursorius temminckii</i>	Temminck's Courser		
<i>Elanus caeruleus</i>	Black-shouldered Kite		
<i>Gyps africanus</i>	White-backed Vulture		
<i>Aegypius tracheliotos</i>	Lappet-faced Vulture		
<i>Circaetus pectoralis</i>	Black-chested Snake-Eagle		
<i>Circaetus cinereus</i>	Brown Snake-Eagle		
<i>Polyboroides typus</i>	African Harrier-Hawk		
<i>Melierax canorus</i>	Southern Pale Chanting Goshawk		Near endemic
<i>Melierax gabar</i>	Gabar Goshawk		
<i>Accipiter badius</i>	Shikra		
<i>Accipiter minullus</i>	Little Sparrowhawk		
<i>Buteo vulpinus</i>	Steppe Buzzard		
<i>Buteo augur</i>	Augur Buzzard		
<i>Buteo rufofuscus</i>	Jackal Buzzard		Endemic
<i>Aquila rapax</i>	Tawny Eagle	Endangered	
<i>Aquila verreauxii</i>	Verreaux's Eagle	Near Threatened	
<i>Aquila spilogaster</i>	African Hawk-Eagle		
<i>Aquila pennatus</i>	Booted Eagle		
<i>Aquila wahlbergi</i>	Wahlberg's Eagle		
<i>Polemaetus bellicosus</i>	Martial Eagle	Endangered	
<i>Sagittarius serpentarius</i>	Secretarybird		
<i>Polihierax semitorquatus</i>	Pygmy Falcon		
<i>Falco rupicolus</i>	Rock Kestrel		
<i>Falco rupicoloides</i>	Greater Kestrel		
<i>Falco chicquera</i>	Red-necked Falcon		
<i>Falco biarmicus</i>	Lanner Falcon		
<i>Falco peregrinus</i>	Peregrine Falcon		
<i>Egretta garzetta</i>	Little Egret		
<i>Ardea cinerea</i>	Grey Heron		
<i>Ardea melanocephala</i>	Black-headed Heron		
<i>Bubulcus ibis</i>	Cattle Egret		
<i>Scopus umbretta</i>	Hamerkop		
<i>Leptoptilos crumeniferus</i>	Marabou Stork		
<i>Dicrurus adsimilis</i>	Fork-tailed Drongo		
<i>Terpsiphone viridis</i>	African Paradise-Flycatcher		
<i>Nilaus afer</i>	Brubru		
<i>Tchagra australis</i>	Brown-crowned Tchagra		
<i>Laniarius atrococcineus</i>	Crimson-breasted Shrike		Near endemic
<i>Telophorus zeylonus</i>	Bokmakierie		Near endemic
<i>Lanioturdus torquatus</i>	White-tailed Shrike	Endemic	Near endemic

<i>Batis pririt</i>	Pririt Batis		Near endemic
<i>Corvus capensis</i>	Cape Crow		
<i>Corvus albus</i>	Pied Crow		
<i>Lanius collaris</i>	Common Fiscal		
<i>Eurocephalus anguitemens</i>	Southern White-crowned Shrike		Near endemic
<i>Anthoscopus minutes</i>	Cape Penduline Tit		Near endemic
<i>Parus carpi</i>	Carp's Tit	Endemic	Near endemic
<i>Parus cinerascens</i>	Ashy Tit		Endemic
<i>Riparia paludicola</i>	Brown-throated Martin		
<i>Hirundu albigularis</i>	White-throated Swallow		
<i>Hirundo dimidiata</i>	Pearl-breasted Swallow		
<i>Hirundo cucullata</i>	Greater Striped Swallow		
<i>Hirundo semirufa</i>	Red-breasted Swallow		
<i>Hirundo fuligula</i>	Rock Martin		
<i>Delichon urbicum</i>	Common House Martin		
<i>Pycnonotus nigricans</i>	African Red-eyed Bulbul		Near endemic
<i>Achaetps pycnopygius</i>	Rockrunner	Endemic	Near endemic
<i>Sylvietta rufescens</i>	Long-billed Crombec		
<i>Eremomela icteropygialis</i>	Yellow-bellied Eremomela		
<i>Eremomela gregalis</i>	Karoo Eremomela		Endemic
<i>Eremomela usticollis</i>	Burnt-necked Eremomela		
<i>Turdoides bicolor</i>	Southern Pied Babbler		Endemic
<i>Parisoma layardi</i>	Layard's Tit-Babbler		Endemic
<i>Parisoma subcaeruleum</i>	Chestnut-vented Tit-Babbler		Near endemic
<i>Zosterops pallidus</i>	Orange River White-eye		Endemic
<i>Cisticola chiniana</i>	Rattling Cisticola		
<i>Cisticola rufilatus</i>	Tinkling Cisticola		
<i>Cisticola subruficapilla</i>	Grey-backed Cisticola		Near endemic
<i>Cisticola juncidis</i>	Zitting Cisticola		
<i>Cisticola jaridulus</i>	Desert Cisticola		
<i>Prinia flavicans</i>	Black-chested Prinia		
<i>Malcorus pectoralis</i>	Rufous-eared Warbler		Endemic
<i>Camaroptera brevicaudata</i>	Grey-backed Camaroptera		
<i>Calamonastes fasciolatus</i>	Barren Wren-Warbler		Near endemic
<i>Miraфра passerina</i>	Monotonous Lark		
<i>Miraфра africana</i>	Rufous-naped Lark		

<i>Mirafra fasciolata</i>	Eastern Clapper Lark	Near endemic
<i>Mirafra sabota</i>	Sabota Lark	
<i>Calendulauda africanoides</i>	Fawn-coloured Lark	Near endemic
<i>Pinarocorys nigricans</i>	Dusky Lark	
<i>Chersomanes albofasciata</i>	Spike-heeled Lark	Near endemic
<i>Certhilauda subcoronata</i>	Karoo Long-billed Lark	Endemic
<i>Eremopterix leucotis</i>	Chestnut-backed Sparrowlark	
<i>Eremopterix verticalis</i>	Grey-backed Sparrowlark	Near endemic
<i>Calandrella cinerea</i>	Red-capped Lark	
<i>Alauda starki</i>	Stark's Lark	Near endemic
<i>Monticola brevipes</i>	Short-toed Rock Thrush	
<i>Psophocichla litsitsirupa</i>	Groundscraper Thrush	
<i>Bradornis inuscatus</i>	Chat Flycatcher	Near endemic
<i>Melaenornis mariquensis</i>	Marico Flycatcher	Near endemic
<i>Muscicapa striata</i>	Spotted Flycatcher	
<i>Cercotrichas leucophrys</i>	White-browed Scrub-Robin	
<i>Cercotrichas paena</i>	Kalahari Scrub-Robin	
<i>Oenanthe monticola</i>	Mountain Wheatear	Near endemic
<i>Oenanthe pileata</i>	Capped Wheatear	
<i>Cercomela schlegelii</i>	Karoo Chat	Near endemic
<i>Cercomela familiaris</i>	Familiar Chat	
<i>Myrmecocichla formicivora</i>	Ant-eating Chat	Endemic
<i>Onychognathus nabouroup</i>	Pale-winged Starling	Near endemic
<i>Lamprotornis nitens</i>	Cape Glossy Starling	
<i>Lamprotornis australis</i>	Burchell's Starling	
<i>Cinnyricinclus leucogaster</i>	Violet-backed Starling	
<i>Creatophora cinerea</i>	Wattled Starling	
<i>Chalcomitra senegalensis</i>	Scarlet-chested Sunbird	
<i>Nectarinia fusca</i>	Dusky Sunbird	Near endemic
<i>Cinnyris mariquensis</i>	Marico Sunbird	
<i>Bualornis niger</i>	Red-billed Buffalo-Weaver	
<i>Sporopipes squamifrons</i>	Scaly-feathered Finch	Near endemic
<i>Plocepasser mahali</i>	White-browed Sparrow-	

	Weaver	
<i>Philetairus socius</i>	Sociable Weaver	Endemic
<i>Ploceus intermedius</i>	Lesser Masked-Weaver	
<i>Ploceus velatus</i>	Southern Masked-Weaver	
<i>Ploceus rubiginosus</i>	Chestnut Weaver	
<i>Quelea quelea</i>	Red-billed Quelea	
<i>Euplectes orix</i>	Southern Red Bishop	
<i>Ortygospiza atricollis</i>	African Quailfinch	
<i>Amadina erythrocephala</i>	Red-headed Finch	Near endemic
<i>Estrilda erythronotos</i>	Black-faced Waxbill	
<i>Estrilda astrild</i>	Common Waxbill	
<i>Granatina granatina</i>	Violet-eared Waxbill	
<i>Uraeginthus angolensis</i>	Blue Waxbill	
<i>Pytilia melba</i>	Green-winged Pytilia	
<i>Vidua macroura</i>	Pin-tailed Whydah	
<i>Vidua paradisaea</i>	Long-tailed Paradise-Whydah	
<i>Vidua regia</i>	Shaft-tailed Whydah	
<i>Passer domesticus</i>	House Sparrow	
<i>Passer motitensis</i>	Great Sparrow	Near endemic
<i>Passer melanurus</i>	Cape Sparrow	Near endemic
<i>Passer griseus</i>	Southern Grey-headed Sparrow	
<i>Motacilla aguimp</i>	African Pied Wagtail	
<i>Motacilla capensis</i>	Cape Wagtail	
<i>Anthus cinnamomeus</i>	African Pipit	
<i>Anthus vaalensis</i>	Buffy Pipit	
<i>Anthus similes</i>	Long-billed Pipit	
<i>Serinus alario</i>	Black-headed Canary	Endemic
<i>Crithagra atrogulariis</i>	Black-throated Canary	
<i>Serinus flaviventris</i>	Yellow Canary	Near endemic
<i>Serinus albogularis</i>	White-throated Canary	Near endemic
<i>Emberiza impetواني</i>	Lark-like Bunting	Near endemic
<i>Emberiza tahapisi</i>	Cinnamon-breasted Bunting	
<i>Emberiza capensis</i>	Cape Bunting	Near endemic
<i>Emberiza flaviventris</i>	Golden-breasted Bunting	

Status – southern Africa: “endemic” & “near endemic” (Hockey *et al.* 2006)

Status – Namibia: “endemic” (Brown *et al.* 1998); “endangered” & “near threatened” (Simmons & Brown 2009)

Source for literature review: Brown *et al.* (1998), Hockey *et al.* (2006), Komen (n.d.), Maclean (1985) & Tarboton (2001).

Although Namibia's avifauna is comparatively sparse compared to the high rainfall equatorial areas elsewhere in Africa, approximately 658 species have already been recorded with a diverse and unique group of arid endemics (Brown *et al.* 1998, Maclean 1985). Fourteen species of birds are endemic or near endemic to Namibia with most Namibian endemics occurring in the savannas (30%), of which ten species occur in a north-south belt of dry savannah in central Namibia (Brown *et al.* 1998).

Bird diversity is viewed as "high" in the general Windhoek area with >230 species estimated and 6-7 species being endemic (Mendelsohn *et al.* 2000). Simmons (1998a) suggests 4-6 endemic species and a "high" ranking for southern African endemics and "average" ranking for red data birds expected from the general area. Although the Windhoek area is not classified as an Important Birding Area (IBA) in Namibia (Simmons 1998a) the closest such sites are located at the coast – e.g., Sandwich, Walvis Bay, etc. – Naukluft and Hardap dams, all approximately 300 km from Windhoek, central Namibia.

At least 209 species of terrestrial ["breeding residents"] birds occur and/or could occur in the general Windhoek area at any time (Hockey *et al.* 2006, Maclean 1985, Tarboton 2001). All the migrant and aquatic species have been excluded here. Ten of the 14 Namibian endemics are expected to occur in the general area (71.4% of all Namibian endemic species or 4.8% of all the species expected to occur in the area).

Sixty one species (29.2% of all the birds expected) have a southern African conservation rating with 13 species classified as endemic (21.3% of southern African endemics or 6.2% of all the birds expected) and 48 species classified as near endemic (78.7% of southern African endemics or 23% of all the birds expected) (Hockey *et al.* 2006).

The most important birds are viewed as the endemic species, especially Monteiro's & Damara Hornbills, Rüppell's Parrot, Rüppell's Korhaan as well as the larger raptors of conservation concern – e.g., Tawny, Martial & Verreaux's Eagles. None of the species are exclusively associated with the area.

Important Species and Areas

The high proportion of endemics – 10 of the 14 endemics to Namibia (i.e., 71% of all endemics) – expected to occur in the general Windhoek area underscore the importance of this area. Furthermore 21% are classified as southern African endemics (or 6% of all the birds expected) and 79% are classified as southern African near-endemics (or 23% of all the birds expected). The most important species known/expected – although not exclusively associated with the proposed development area – are viewed as Monteiro's & Damara Hornbills, Rüppell's Parrot and Rüppell's Korhaan as well as the larger raptors of conservation concern – e.g., Tawny, Martial & Verreaux's Eagles – all of which breed in the general area, but not exclusively associated with the area. None of the species are exclusively associated with the area.

Important Areas – “hotspot”

Mountainous and rocky features in the Highland Savannah are viewed as unique and often critical habitat to a variety of vertebrate fauna of concern – e.g., *Python anchietae* (endemic; insufficiently known; protected game; CITES Appendix II) & Verreaux’s Eagle (“Near Threatened”). Such habitats should be protected, especially isolated patches thereof, as these often have an “island” effect with a variety of rock and crevasse dwelling species dependent on these areas.

Ephemeral drainage lines with associated riparian habitat, especially bigger trees, and temporary pools (and/or perennial springs and seeps) are also viewed as important habitat for a variety of vertebrate fauna – e.g., bark roosting bats; South African Gallago; cavity nesting birds (Monteiros & Damara Hornbills and Rüppells Parrot), etc.

Conclusion (Avian Diversity)

Endemic birds are well represented in the general area (71% of all Namibian endemics) which also includes a high proportion of southern African endemics (6%) and near-endemics (23%). The most problematic species are probably Monteiros & Damara Hornbills, Rüppells Parrot and Rüppells Korhaan as well as some of the larger raptors (e.g., Tawny, Martial & Verreaux’s Eagles), especially species which breed along the ephemeral drainage lines and adjacent rocky areas.

Important habitats – i.e., “hotspot” areas – are viewed as rocky ridges, hills, mountains and ephemeral drainage lines with associated riparian vegetation (especially bigger trees) with temporary pools, seeps, fountains, etc.

Portion A of Portion 4 (Wildfarm Teufelsschlucht) of the Farm Otjihavera No. 62 is generally sloping from the south to the north towards the Swakop River. The area lies in northward extension of the Windhoek Valley with elevated areas to the east and west. The Otjihavera River, a tributary of the Swakop River, flows northward through the area and several west flowing smaller tributaries emanates from the highlands and joins the Otjihavera River. No rocky ridges, mountains and ephemeral drainage lines with associated riparian vegetation (especially bigger trees) with temporary pools, seeps, fountains have been observed on the site. Due to this gradual topography as well as the sparse cover in vegetation, a relatively small diversity of Avian Species is observed on the site.

The following are general images of a typical 11kV line (like the one to be constructed), the project site where bird interaction could lead to potential impacts:



Figure 9: Potential Harm to Avifauna

Data on the avifauna and electricity interactions shows some species in the project area may be affected as follows:

Powerline & Bird Interactions

Red Data Species and nest-problem species (1820BB) - at most 15 species have been found to be affected by electricity infrastructure in the project area. The transmission line to be constructed between the NamPower Booster Station and the abattoir will have an impact. The lines will be visible (fitted with bird flight divertors) to prevent birds from flying into the lines.

Potential impacts arising from habitat damage

The following birds are either present or moving through the project area: African Fish-Eagle (V), African Marsh-Harrier (E), African Skimmer (V), Bateleur (E), Black-winged Pratincole (NT), Lappet-faced Vulture (V), Marabou Stork (NT), Martial Eagle (E), Rufous-bellied Heron (E), Tawny Eagle (E), White-backed Vulture (E) and White-headed Vulture (V) (Chris Brown). The habitats of these birds could be damaged by the proposed activities. Care should be taken to avoid damage to the habitats of these birds.

Faults caused by nests

Birds make nests on the lines which cause faults in the systems. Care should be taken to make sure birds avoid making nests on the lines. Various trees are in the area that can be used as structures for birds to make nests.



Figure 10: Structures that birds might use to build nests in

Mitigating interaction of birds & power grids

Powerlines are one of the major causes of unnatural deaths for birds. Electricity transmission lines, conductors and towers causes injury and death to bird species. The risks should be minimized in the short and long term to prevent bird populations from being reduced.

To lower the risk of injury and death of birds, it is proposed that the following practices be considered and implemented during the planning and construction of the powerline:

- A steel perching bar for birds could be considered for some of the key poles (e.g., every third pole), including the bend points. This horizontal bar should be >500 mm long, and fitted onto the top of each pole, 220 mm above the pole top.
- A standard mitigation for electrocutions on wooden power line poles is to "gap" the earth wire near the top of the pole, i.e., the earth wire on each power line pole should stop at least 300 mm below the lowest phase to provide an air space safety gap, to reduce the electrocution risk.

- Transformer/switchgear structures should be designed in such a way that they are not attractive as bird perches/nesting sites; selected live components should be insulated (e.g., using PVC piping or LDPE pipe). A steel perching bar could also be included, above the highest point.
- On strain structures where "jumper" wires are used, at least the centre jumper should be insulated, using PVC piping or LDPE pipe. Jumpers should be offset where possible.
- The stay wires should also be "gapped" using an insulator.
- The need for regular ongoing monitoring and for reporting power line incidents should be stressed, and reporting procedures clarified.
- Any sections that subsequently still prove to be problematic in terms of either electrocutions or collisions should be retro mitigated, by way of adaptive management. For collisions, the Viper Live Bird Flapper ("Viper") could be considered as a mitigation.

Conclusion on impact on avifauna

Green Earth Environmental Consultants are of the opinion that the impact on birds of the ±10.5km 11kV line to be constructed will be low if mitigated as proposed. The reasons mentioned above are in support of that.

11.3. VISUAL IMPACTS

The construction of any overhead powerline will have an unavoidable visual impact. Other powerlines have been constructed in this area. There is the 66kV line between Windhoek and Okahandja as well as several other lines servicing farms in the area. Green Earth Environmental Consultants are of the opinion that the impact of the proposed ±10.5km 11kV power line will be low due to its alignment and the activities on site.

11.4. GEOLOGY AND SOILS

Portion 4, Otjihavera is located in the Khomas Trough on a geological area classified as Damara Supergroup and Gariiep Complex. The surface geology of the area also consists of formations of Damara granite intrusions. See *Map* below:

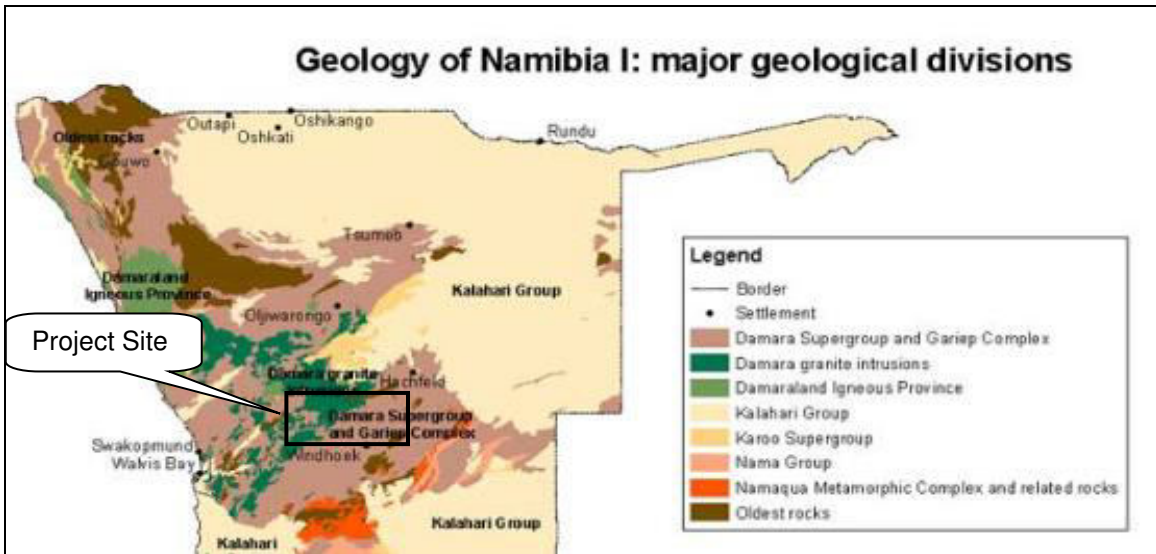


Figure 11: Geology of Namibia (Atlas of Namibia Project, 2002)

The Khomas Trough was formed during sedimentation of the Late Proterozoic Damara Sequence. The basin that was filled by a thick sequence, now preserved as metagreywackes and pelites of the Kuiseb Formation, which were subsequently multiply deformed and thrust during the Damaran Orogeny. Minor lithologies included are graphite schists, calc-silicates and scapolite schists (Grunert, 2003).



Figure 12: Mica schists outcrops on the site

The project site is generally even with some higher areas at places. Natural slopes are seen near natural drainage courses on the project site. The soil is suitable for development however the soil is also erodible and should not be cleared unnecessarily from vegetation if not required for the placement of buildings or roads. Unnecessary clearing of soil will lead to erosion (*Grunert, 2003*).

11.5. SOCIO ECONOMIC ENVIRONMENT

The majority of land uses around the project site are characterized by residential, commercial and farming activities; therefore, the development will not have a negative impact on the social environment.

The proposed development will have a positive impact on the socio-economic environment. Positive impacts associated with the project will be in the form of additional job opportunities during construction as well as in operation. The community will also benefit from skills and technology transfer. The spending power of locals is likely to increase because of employment during the construction and operational phase.

11.6. CLIMATE

In broad terms, the climate can be described as semi-arid, with summer rainfalls and highest temperatures occurring during October and February. Maximum temperatures recorded in the area vary just under 40 degrees Celsius with an average annual temperature of more than 22 degrees Celsius (*Weather - the Climate in Namibia, 1998 – 2012*).

Rainfall in the form of thunderstorms is experienced in the area during the summer months between October and April. It is further characterised by relatively high average mean annual rainfall of 400 - 600mm in comparison to 250mm for the entire country. Over 70% of the rainfall occurs in the period between November and March with mean annual gross evaporation of 2600-2800mm (*Weather - the Climate in Namibia, 1998 – 2012*).

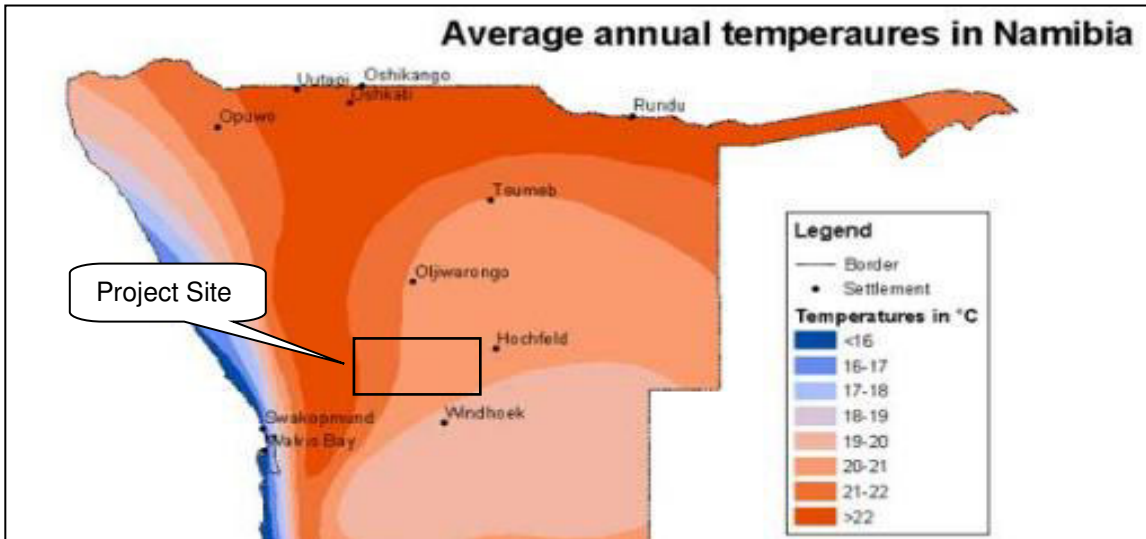


Figure 13: Average temperatures (Atlas of Namibia Project, 2002)

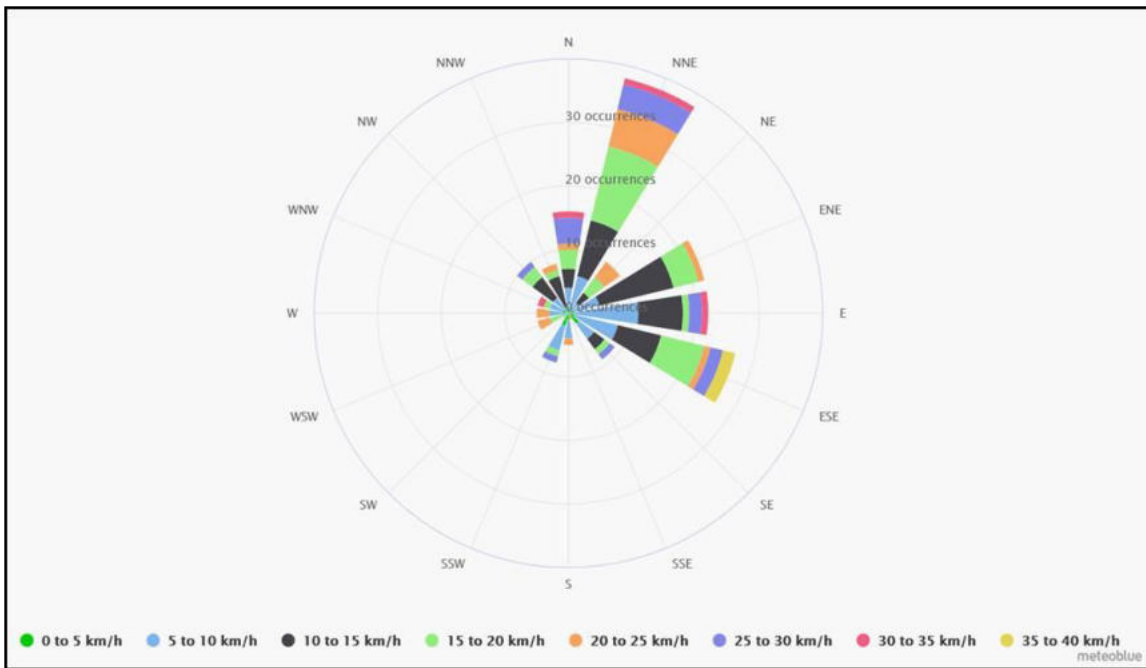


Figure 14: Wind rose of the area (Meteoblue, 2022)

11.7. CULTURAL HERITAGE

The proposed project site is not known to have any historical significance prior to or after Independence in 1990. The specific area does not have any National Monuments and the specific site has no record of any cultural or historical importance or on-site resemblance of any nature. No graveyard or related article was found on the site.

12. IMPACT ASSESSMENT AND EVALUATION

The Environmental Impact Assessment sets out potential positive and negative environmental impacts associated with the proposed project site. The following assessment methodology will be used to examine each impact identified:

Table 5: Impact Evaluation Criterion (DEAT 2006)

Criteria	Rating (Severity)	
Impact Type	+	Positive
	O	No Impact
	-	Negative
Significance of impact being either	L	Low (Little or no impact)
	M	Medium (Manageable impacts)
	H	High (Adverse impact)

Probability:	Duration:
5 – Definite/don't know	5 - Permanent
4 – Highly probable	4 – Long-term (impact ceases)
3 – Medium probability	3 – Medium term (5 – 15 years)
2 – Low probability	2 – Short-term (0 – 5 years)
1 – Improbable	1 - Immediate
0 - None	
Scale:	Magnitude:
5 – International	10 – Very high/don't know
4 – National	8 - High
3 – Regional	6 - Moderate
2 – Local	4 - Low
1 – Site only	2 - Minor
	0 - None

The impacts on the receiving environment are discussed in the paragraphs below:

12.1. IMPACTS DURING THE CONSTRUCTION ACTIVITY

Some of the impacts that the development has on the environment includes water will be used for the construction and operation activities, electricity will be used, a sewer system will be constructed and wastewater will be produced on the site that will have to be handled.

12.1.1. WATER USAGE

Water is a scarce resource in Namibia and therefore water usage should be monitored and limited in order to prevent unnecessary wastage. The proposed project might make use of water in its construction phase and operations.

Water will be obtained from the following sources:

- NamWater – an application has been submitted to NamWater for a maximum demand of 360m³/day – connection is available from the Von Bach Dam – Windhoek line located just west of Portion A, west of the Trunk Road.
- Onsite boreholes – these boreholes have sustainable capacity of 130m³/day. The MAWLR legalised five boreholes and approved a permit for the extraction of groundwater for processing and domestic purposes on Portion 4 (Wildfarm Teufelsschlucht) of the Farm Otjihavera No. 62 which will be used for the operations of the abattoir. See attached a copy of Permit 11687 and the MAWLR’s approval letter.
- Recycling of water – it is estimated that 40% of the water used can be recycled.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Water	-	2	2	4	2	L	L

12.1.2. ECOLOGICAL IMPACTS

The proposed infrastructure will be constructed in a semi disturbed natural area which is partly covered with vegetation. Special care should be taken to limit the destruction or damage of the vegetation. However, impacts on fauna and flora are expected to be minimal. Disturbance of areas outside the designated working zone is not allowed.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology	-	1	2	4	2	L	L

12.1.3. DUST POLLUTION AND AIR QUALITY

Dust generated during the transportation of building materials; construction and installation of bulk services, and problems thereof are expected to be low and site specific. Dust is expected to be worse during the winter months when strong winds occur. Release of various particulates from the site during the construction phase and exhaust fumes from vehicles and machinery related to the construction of bulk services are also expected to take place. Dust is regarded as a nuisance as it reduces visibility, affects the human health and retards plant growth. It is recommended that regular dust suppression be included in the construction activities, when dust becomes an issue.

Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust & Air Quality	-	2	2	2	2	M	L

12.1.4. NOISE IMPACT

An increase of ambient noise levels at the proposed site is expected due to the construction activities. Noise pollution due to heavy-duty equipment and machinery might be generated. It is not expected that the noise generated during construction will impact any third parties due to the distance of the neighbouring activities. Ensure all mufflers on vehicles are in full operational order; and any audio equipment should not be played at levels considered intrusive by others. The construction staff should be equipped with ear protection equipment.

Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Noise	-	2	1	4	2	M	L

12.1.5. HEALTH, SAFETY AND SECURITY

The safety, security and health of the labour force, employees and general public are of great importance. Workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Personal Protective Equipment). A health and safety officer should be employed to manage, coordinate and monitor risk and hazard and report all health and safety related issues in the workplace.

Safety issues could arise from the earthmoving equipment and tools that will be used on site during the construction phase. This increases the possibility of injuries and the contractor must ensure that all staff members are made aware of the potential risks of injuries on site. The presence of equipment lying around on site may also encourage criminal activities (theft).

Sensitize operators of earthmoving equipment and tools to switch off engines of vehicles or machinery not being used. The contractor is advised to ensure that the team is equipped with first aid kits and that these are available on site, at all times. Workers should be equipped with adequate personal protective gear and properly trained in first aid and safety awareness.

No open flames, smoking or any potential sources of ignition should be allowed at the project location. Signs such as 'NO SMOKING' must be prominently displayed in parts where inflammable materials are stored on the premises. Proper barricading and/or fencing around the site especially trenches for pipes and drains should be erected to avoid entrance of animals and/or unauthorized persons. Safety regulatory signs should be placed at strategic locations to ensure awareness. Adequate lighting within and around the construction locations should be erected, when visibility becomes an issue.

Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Safety & Security	-	1	2	4	2	M	L

12.1.6. CONTAMINATION OF GROUNDWATER

Care must be taken to avoid contamination of soil and groundwater. Use drip trays when doing maintenance on machinery. Maintenance should be done on dedicated areas with linings or concrete flooring. The risk can be lowered further through proper training of staff. All spills must be cleaned up immediately. Excavations should be backfilled and sealed with appropriate material, if it is not to be used further.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Groundwater	-	2	2	2	2	M	L

12.1.7. SEDIMENTATION AND EROSION

The area is mostly covered by vegetation. The vegetation is stabilizing the area against wind and water erosion. Vegetation clearance and creation of impermeable surfaces could result in erosion in areas across the proposed area. The clearance of vegetation will further reduce the capacity of the land surface to slow down the flow of surface water, thus decreasing infiltration, and increasing both the quantity and velocity of surface water runoff. The proposed construction activities will increase the number of impermeable surfaces and therefore decrease the amount of groundwater infiltration. As a result, the amount of storm water during rainfall events could increase. If proper storm water management measures are not implemented this will impact negatively on the water courses close to the site.

The general slope of the site is from the south to the north. Old borrow pits is located on the site. Seasonal flooding of these pits and surroundings have been observed. The natural flow of storm water and drainage must be minimally disturbed, and the natural flow accommodated where possible. Provision must be made for the accommodation of surface water/stormwater management as it may endanger infrastructure. It is also advised that the 1:50 year flood risk area is identified, and that no infrastructure development is done in the flood risk area.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Erosion and Sedimentation	-	1	2	4	2	M	L

12.1.8. GENERATION OF WASTE

This can be in a form of rubble, cement bags, pipe and electrical wire cuttings. The waste should be gathered and stored in enclosed containers to prevent it from being blown away by the wind. Contaminated soil due to oil leakages, lubricants and grease from the construction equipment and machinery may also be generated during the construction phase.

The oil leakages, lubricants and grease must be addressed. Contaminated soil must be removed and disposed of at a hazardous waste landfill. The contractor must provide

containers on-site, to store any hazardous waste produced. Regular inspection and housekeeping procedure monitoring should be maintained by the contractor.

The Proponent intends to appoint and contract specialist waste managers to collect and dispose of the waste generated on the site. The proponent must ensure that the subcontractors complied with the applicable Namibian Legislation, Policies and Practices.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Waste	-	1	2	4	2	M	L

12.1.9. CONTAMINATION OF SURFACE WATER

Contamination of surface water might occur through oil leakages, lubricants and grease from the equipment and machinery during the installation, construction and maintenance of bulk services at the site. Oil spills may form a film on water surfaces in the nearby streams causing physical damage to water-borne organisms.

Machinery should not be serviced at the construction site to avoid spills. All spills should be cleaned up as soon as possible. Hydrocarbon contaminated clothing or equipment should not be washed within 25m of any surface water body.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Surface water	-	2	2	4	3	M	L

12.1.10. TRAFFIC AND ROAD SAFETY

All drivers of delivery vehicles and construction machinery should have the necessary driver's licenses and documents to operate these machines. Speed limit warning signs must be erected to minimise accidents. Heavy-duty vehicles and machinery must be tagged with reflective signs or tapes to maximize visibility and avoid accidents.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Traffic	-	2	2	4	3	M	L

12.1.11. FIRES AND EXPLOSIONS

There should be sufficient water available for firefighting purposes. Ensure that all firefighting devices are in good working order and are serviced. All personnel have to be trained about responsible fire protection measures and good housekeeping such as the removal of flammable materials on site. Regular inspections should be carried out to inspect and test firefighting equipment by the contractor.

The Proponent will put in the necessary fire protection infrastructure / extinguishers as per requirements. It is advised that a specialist Fire Protection Specialist is contracted to introduce a proper fire protection plan with the required infrastructure and to oversee the annual auditing and maintenance of the infrastructure.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Fires and Explosions	-	2	2	4	2	M	L

12.1.12. SENSE OF PLACE

The placement, design and construction of the proposed project should be as such as to have the least possible impact on the natural environment. The proposed activities will not have a large/negative impact on the sense of place in the area since it will be constructed in a manner that will not affect the neighbouring portions and it will not be visually unpleasing.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Nuisance Pollution	-	1	1	2	2	L	L

12.2. IMPACTS DURING THE OPERATIONAL PHASE

12.2.1. ECOLOGICAL IMPACTS

Staff and visitors should only make use of walkways and existing roads to minimise the impact on vegetation. No firewood may be collected on the site. Minimise the area of disturbance by restricting movement to the designated working areas during maintenance and drives.

The proposed power line presents a potential risk in terms of collisions and electrocutions of birds. There are several potentially sensitive bird species in the area that could be impacted in this way. The lines will be visible (fitted with bird flight divertors) in order to prevent birds from flying into the lines. There will be a 15-meter-wide servitude on both sides of the line. There will be only a limited amount of vegetation clearance and site leveling required for the operations to be carried out for the construction. The site will be fenced in with an electrical fence to prevent people and animals from entering the site. A security guard will also be appointed to protect the site. A small guard house will be erected.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology Impacts	-	1	2	4	2	L	L

12.2.2. DUST POLLUTION AND AIR QUALITY

Vehicles transporting goods and staff will contribute to the release of hydrocarbon vapours, carbon monoxide and sulphur oxides into the air. Possible release of sewer odour, due to sewer system failure of maintenance might also occur. All maintenance of bulk services and infrastructure at the project site has to be designed to enable environmental protection.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust & Air Quality	-	2	2	4	4	M	L

12.2.3. CONTAMINATION OF GROUNDWATER

Spillages might also occur during maintenance of the sewer system. This could have impacts on groundwater especially in cases of large sewer spills. Proper containment should be used in cases of sewerage system maintenance to avoid any possible leakages. Oil and chemical spillages may have a health impact on groundwater users. Potential impact on the natural environment from possible polluted groundwater also exists.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Groundwater contamination	-	2	2	4	2	L	L

12.2.4. GENERATION OF WASTE

Household waste from the activities at the site and from the staff working at the site will be generated. This waste will be collected, sorted to be recycled and stored in on site for transportation and disposal at an approved landfill site.

The Proponent intends to appoint and contract specialist waste managers to collect and dispose of the waste generated on the site. The proponent must ensure that the subcontractors complied with the applicable Namibian Legislation, Policies and Practices.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Waste Generation	-	1	2	2	2	M	L

12.2.5. FAILURE IN RETICULATION PIPELINES

There may be a potential release of sewage, stormwater or water into the environment due to pipeline/system failure. As a result, the spillage could be released into the environment and could potentially be health hazard to surface and groundwater. Proper reticulation pipelines and drainage systems should be installed. Regular bulk services infrastructure and system inspection should be conducted.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Failure of Reticulation Pipeline	-	1	1	4	2	M	L

12.2.6. FIRES AND EXPLOSIONS

Food will be prepared on gas fired stoves. There should be sufficient water available for firefighting purposes. Ensure that all fire-fighting devices are in good working order and are serviced. All personnel have to be trained about responsible fire protection measures and good housekeeping such as the removal of flammable materials on site. Regular inspections should be carried out to inspect and test firefighting equipment by the contractor.

The Proponent will put in the necessary fire protection infrastructure / extinguishers as per requirements. It is advised that a specialist Fire Protection Specialist is contracted to introduce a proper fire protection plan with the required infrastructure and to oversee the annual auditing and maintenance of the infrastructure.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Fires and Explosions	-	2	1	4	2	M	L

12.2.7. HEALTH, SAFETY AND SECURITY

The safety, security and health of the labour force, employees and neighbours are of great importance, workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Personal Protective Equipment). Workers should be warned not to approach or chase any wild animals occurring on the site. No open flames, smoking or any potential sources of ignition should be allowed at the project location. Signs such as 'NO SMOKING' must be prominently displayed in parts where inflammable materials are stored on the premises.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Safety & Security	-	1	2	4	2	M	L

12.3. CUMULATIVE IMPACTS

These are impacts on the environment, which results from the incremental impacts of the construction and operation of the proposed project when added to other past, present, and reasonably foreseeable future actions regardless of what person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. In relation to an activity, it means the impact of an activity that in it may not become significant when added to the existing and potential impacts resulting from similar or diverse activities or undertakings in the area.

Possible cumulative impacts associated with the proposed project include sewer damages/maintenance, vegetation and animal disturbance, uncontrolled traffic and destruction of the natural environment. These impacts could become significant especially if it is not properly supervised and controlled. This could collectively impact on the environmental conditions in the area. Cumulative impacts could occur in both the operational and the construction phase.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Cumulative Impacts	-	1	3	4	3	L	L

13. ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan (EMP) provides management options to ensure impacts of the proposed construction are minimised. An EMP is an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the operations are prevented, and the positive benefits of the projects are enhanced.

The objectives of the EMP are:

- ✓ to include all components of the proposed project.
- ✓ to prescribe the best practicable control methods to lessen the environmental impacts associated with the project.
- ✓ to monitor and audit the performance of the project personnel in applying such controls.
- ✓ To ensure that appropriate environmental training is provided to responsible project personnel.

The EMP acts as a document that can be used during the various phases of the proposed project. The contractor as well as the management and staff should be made aware of the contents of the EMP. See *Appendix* for EMP.

14. CONCLUSION

The EIA has been completed in line with the requirements of the Environmental Management Act, 2007 and Regulations and it is concluded and recommended that the specific site identified namely Portion A of Portion 4 of Farm Otjihavera No. 62, Otjozondjupa Region, has the full potential to be used for the proposed activities. The identified environmental and social impacts can be minimized and managed through implementing preventative measures and sound management systems. It is recommended that the environmental performance be monitored regularly to ensure compliance and that corrective measures be taken if necessary.

In general, the construction and operation of the proposed project would pose limited environmental risks, provided that the EMP for the activity is used properly. The EMP should be used as an onsite tool during the construction and operation of the project. Parties responsible for non-conformances of the EMP should be held responsible for any rehabilitation that has to be undertaken. After assessing all information available on this project, Green Earth Environmental Consultants are of the opinion that the proposed project site is suitable for the proposed activities. The accompanying EMP will focus on mitigation measures that will remediate or eradicate the negative or adverse impacts.

15. RECOMMENDATION

It is therefore recommended that the Ministry of Environment, Forestry and Tourism through the Environmental Commissioner support and approve the Environmental Clearance to construct and operate a cattle abattoir on Portion A of Portion 4 of Farm Otjihavera No. 62, Otjozondjupa Region and to issue an Environmental Clearance for the following 'Listed Activities':

WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES

- *The construction of facilities for waste sites, treatment of waste and disposal of waste.*
- *Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976.*
- *The import, processing, use and recycling, temporary storage, transit or export of waste.*

ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

The construction of facilities for –

- *The generation of electricity.*
- *The transmission and supply of electricity.*

WATER RESOURCE DEVELOPMENTS

- *The abstraction of ground or surface water for industrial or commercial purposes.*

HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE

- *The storage and handling of a dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.*
- *Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin.*

INFRASTRUCTURE

The route determination of roads and design of associated physical infrastructure where –

- *It is a public road.*
- *The road reserve is wider than 30 meters; or*
- *The road caters for more than one lane of traffic in both directions.*

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Stabenrauch Planning Consultants cc was appointed by NAMDBE to apply to the Orangeamund Town Council and the Urban and Regional Planning Board (URPB) for the following:

- RE ZONING OF ERF 2098, ORANJERUND EXTENSION 7 FROM "LOCAL AUTHORITY" TO "GENERAL BUSINESS WITH A BULK OF 1.0".
- INCLUSION OF THE AMENDED ZONING INTO THE EXTENDED SCHEME PREPARED FOR ORANJERUND.

Erf 2098 is located in the neighbourhood of Oranjerund Extension 7 and measures 1,0818 ha in extent. According to the former abattoir building forms part of this node. Once rezoned the property can be used for retail purposes as permitted by the Orangeamund Zoning Scheme. Please take note that the application, locality map and supporting documents lies open for inspection during normal office hours on the town planning notice board at the Orangeamund Town Council and SPE Office, 45 Field Street, Windhoek.

Further to be notified that a person objecting to the proposed change in land use as set out above may lodge such objection together with their grounds thereof, with the Orangeamund Town Council and the applicant in writing before 30 January 2023.

Applicant: Stabenrauch Planning Consultants cc
 P.O. Box 41404
 Windhoek
 Tel: (+264) 61 281189
 Our Ref: W193036

CALL FOR PUBLIC PARTICIPATION/COMMENTS ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN TO OBTAIN AN ENVIRONMENTAL CLEARANCE FOR THE CONSTRUCTION AND OPERATION OF A CATTLE ABATTOIR ON PORTION A OF PORTION 4 (WILDFARM TEUFELSCHLUCHT) OF FARM OIJIHVERA NO. 62, OIJOZONDUPA REGION.

Green Earth Environmental Consultants have been appointed to attend to and complete an Environmental Impact Assessment and Environmental Management Plan (EMP) to obtain an Environmental Clearance Certificate as per the requirements of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) to construct and operate a cattle abattoir on Portion A of Portion 4 (Wildfarm Teufelschlucht) of Farm Oijihvera No. 62, Ojizondupa Region. Name of proponent: Savanna Beef Processors Ltd. Project location and description: It is the intention of the proponent to construct and operate a cattle abattoir on Portion A of Portion 4 (Wildfarm Teufelschlucht) of Farm Oijihvera No. 62, Ojizondupa Region. Portion A is located between Windhoek and Okahandja approximately 30km to the north of Windhoek along the eastern side of the B1 Trunk Road. Portion A is 25 hectares in extent. It is intended to slaughter 2500 cattle on a daily basis at the abattoir. A locality plan of the site is available at the offices of Green Earth Environmental Consultants at Bridgeview Offices, No. 4 Dr. Kwame Nkrumah Avenue, Klein Windhoek. Interested and affected parties are hereby invited to register in terms of the assessment process to give input, comments, and opinions regarding the proposed project. A public meeting will be held only if there is enough public interest. Only I&APs that registered will be notified of the possible public meeting to be held. The last date for comments and/or registration is 13 January 2023.

Contact details for registration and further information: Green Earth Environmental Consultants
 Contact Persons: Charlie Du Toit/Carlen van der Walt
 Tel: 0811273 545
 E-mail: carlen@greenearth.namibia.com

CALL FOR PUBLIC PARTICIPATION/COMMENTS ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN TO OBTAIN AN ENVIRONMENTAL CLEARANCE FOR THE CONSTRUCTION AND OPERATION OF A NEW SEWAGE TREATMENT PLANT FOR NDORO MEMORIAL PRIMARY SCHOOL, OMEGA III, ZAMBEZI REGION.

Green Earth Environmental Consultants have been appointed to attend to and complete an Environmental Impact Assessment and Environmental Management Plan (EMP) in order to obtain an Environmental Clearance Certificate as per the requirements of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) for the construction and operation of a new sewage treatment plant for Ndoro Memorial Primary School, Luhono, Zambezi Region. Name of proponent: Ministry of Education Arts and Culture. Project location and description: It is the intention of the proponent to construct and operate a new sewage treatment plant for Ndoro Memorial Primary School, Omega III, Zambezi Region. The proposed treatment plant will have the capacity to treat 400 people equivalent of sewer to special standard which will allow that the treated water may be used for irrigation purposes. A locality plan of the site is available at the offices of Green Earth Environmental Consultants at Bridgeview Offices, No. 4 Dr. Kwame Nkrumah Avenue, Klein Windhoek. Interested and affected parties are hereby invited to register in terms of the assessment process to give input, comments, and opinions regarding the proposed project. A public meeting will be held only if there is enough public interest. Only I&APs that registered will be notified of the possible public meeting to be held. The last date for comments and/or registration is 13 January 2023.

Contact details for registration and further information: Green Earth Environmental Consultants
 Contact Persons: Charlie Du Toit/Carlen van der Walt
 Tel: 0811273 545
 E-mail: carlen@greenearth.namibia.com

CALL FOR PUBLIC PARTICIPATION/COMMENTS ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED SEAL PROCESSING PLANT ON PORTION 3354 HERTIES BAY TOWNLAND NO. 13, ERONGO REGION.

Notice is hereby given to all interested and affected Parties (I & APs) that an application will be made to the Environmental Commissioner in terms of the Environmental Management Act (No. 7 of 2007) and its Regulation (2012) for the following intended activity: Project Name: Township establishment (Mixed Land Use). Project Location: Portion 3354, Herties bay Townland No. 133 (Herties bay Usakos road), Erongo Region. Proponent: White Seal Investment cc. Project Description: The proposed project entails the proposed development and establishment of a township establishment. Mixed land use development in Herties bay Townland No. 133 (South of Herties bay) on a 25 Hectars. Consultant: GMAC Investments cc. All Interested and Affected Parties (I & APs) are encouraged to register and raise concerns or provide comments and opinions on or before 20 January 2023. Background Information Document (BID) document will be provided upon indication as an I&AP. A public meeting will be held only if there is sufficient public interest & attendance. Public Consultation meeting date: 8 January 2023. Venue: Kamwandu Combined School @ 10h00-12h00. Should you wish to register as I & AP please contact the GMAC Investment Consultant. Call: +264 812317252 / +264814554221. Email: gmacinvest@gmac.com

CALL FOR PUBLIC PARTICIPATION/COMMENTS ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN TO OBTAIN AN ENVIRONMENTAL CLEARANCE FOR THE CONSTRUCTION AND OPERATION OF A NEW SEWAGE TREATMENT PLANT FOR SCHUCKMANSBURG MEMORIAL SCHOOL, LUHONO, ZAMBEZI REGION.

Green Earth Environmental Consultants have been appointed to attend to and complete an Environmental Impact Assessment and Environmental Management Plan (EMP) in order to obtain an Environmental Clearance Certificate as per the requirements of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) for the construction and operation of a new sewage treatment plant for Schuckmansburg Memorial School, Luhono, Zambezi Region. Name of proponent: Ministry of Education Arts and Culture. Project location and description: It is the intention of the proponent to construct and operate a new sewage treatment plant for Schuckmansburg Memorial School, Luhono, Zambezi Region. The proposed treatment plant will have the capacity to treat 400 people equivalent of sewer to special standard which will allow that the treated water may be used for irrigation purposes. A locality plan of the site is available at the offices of Green Earth Environmental Consultants at Bridgeview Offices, No. 4 Dr. Kwame Nkrumah Avenue, Klein Windhoek. Interested and affected parties are hereby invited to register in terms of the assessment process to give input, comments, and opinions regarding the proposed project. A public meeting will be held only if there is enough public interest. Only I&APs that registered will be notified of the possible public meeting to be held. The last date for comments and/or registration is 13 January 2023.

Contact details for registration and further information: Green Earth Environmental Consultants
 Contact Persons: Charlie Du Toit/Carlen van der Walt
 Tel: 0811273 545
 E-mail: carlen@greenearth.namibia.com

REPUBLIC OF NAMIBIA MINISTRY OF TRADE & INDUSTRY LIQUOR ACT 1988 NOTICE OF APPLICATION TO A COMMITTEE IN TERMS OF THE LIQUOR ACT, 1988 (Regulation 14, 2018/30)

Notice is given that an application in terms of the Liquor Act, 1988, for a license of which appears below to be made to the Regional Liquor Licensing Committee, Region: CARABEED.

- Name and postal address of applicant, RESIDENTIAL BROADBENT, P.O. BOX 8009 SWACHTZ
- Name of business or propose of business in which applicant wishes to carry on business, CENTRE
- Address/location of premises to which application relates, LUSSEBE AREA, MUALACHALI VILLAGE, KARBEL, BENESE ROAD
- Name and details of applicant, SHERRIN LIQUOR LICENCE
- Class of the court with whom application will be lodged, KATUWA MAGISTRATE COURT

8 Date on which application will be lodged: 08 NOVEMBER 2022
 9 Date of the meeting of Committee at which application will be heard: 14 DECEMBER 2022

Any objection or written submission in terms of section 20 of the Act in relation to the application must be sent or delivered to the Secretary of the Committee in terms of the Act on or before the 21st day before the date of the meeting of the Committee at which the application will be heard.

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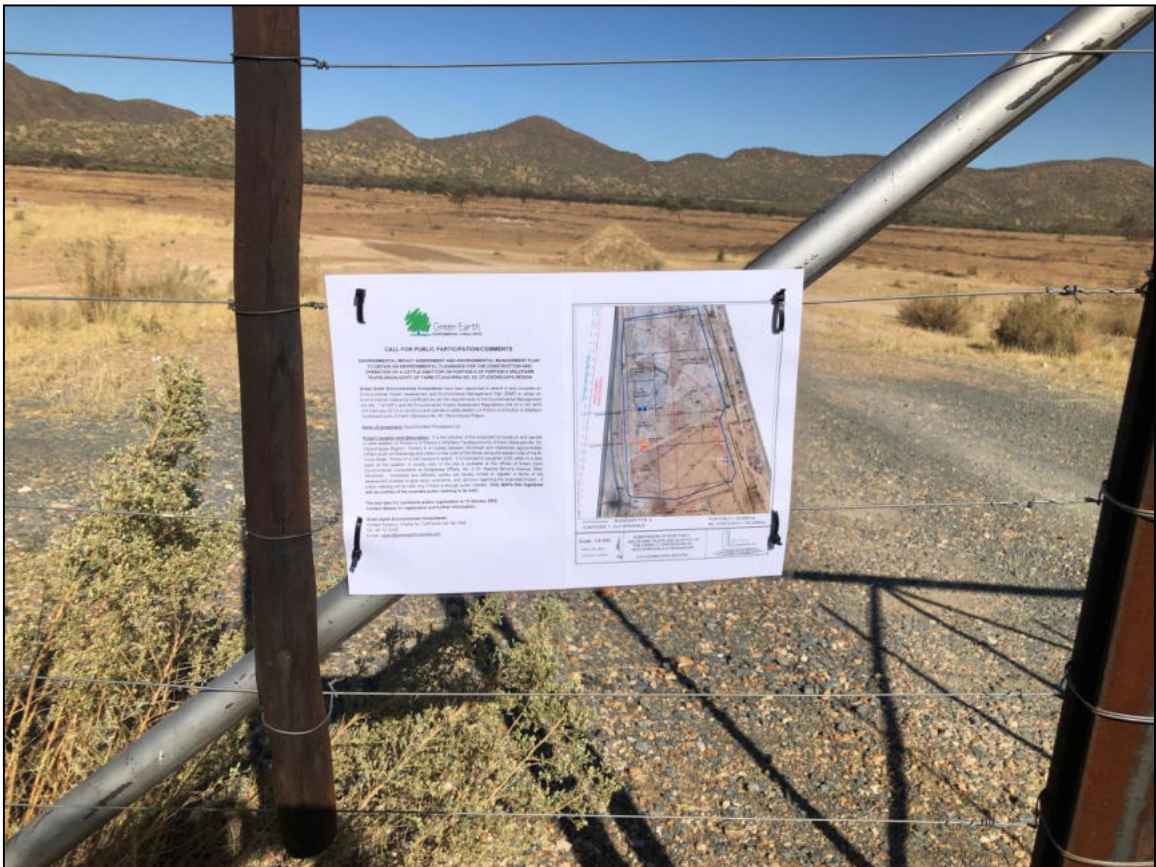
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APPENDIX B: NOTICE ON SITE



APPENDIX C: BOREHOLE PERMITS



REPUBLIC OF NAMIBIA

MINISTRY OF AGRICULTURE, WATER AND LAND REFORM

Tel.: (061) 2087228
Fax: (061) 2087697
Enquiries: J N Mouton
Email: James.Mouton@mawlr.gov.na
Reference: PJ 62/4

Government Office Park
Private Bag 13184
WINDHOEK

Mr P M Marais
Wildfarm Teufelsschlucht CC
P O Box 20690
WINDHOEK

Dear Mr Marais

APPLICATION FOR THE LEGALIZATION OF FIVE EXISTING BOREHOLES AND FOR THE ABSTRACTION OF GROUNDWATER FOR PROCESSING AND DOMESTIC PURPOSES ON PORTION 4 (WILDFARM TEUFELSSCHLUCHT) OF THE FARM OTJIHAVERA NO. 62, OKAHANDJA DISTRICT

1. The above-mentioned application has been approved. Attached please find permit number 11687 which authorizes the abstraction of water for processing and domestic purposes.
2. You are kindly requested to comply with all the permit conditions, especially conditions number 4 and 5.
3. Please be informed to engage in water saving methods and that a high amount of over abstraction of the given quota can lead to the withdrawal of the permit.

Yours Sincerely


Ndiyakubi Nghituwamata (Ms)
EXECUTIVE DIRECTOR



All official correspondence must be addressed to the Executive Director



REPUBLIC OF NAMIBIA

MINISTRY OF AGRICULTURE, WATER AND LAND REFORM

Tel.: (061) 2087228
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Enquiries: J N Mouton
Email: James.Mouton@mawlr.gov.na
Reference: PJ 62/4

Government Office Park
Private Bag 13184
WINDHOEK

PERMIT NUMBER: 11 687

DATE: 21 DECEMBER 2022

PERMIT ISSUED IN TERMS OF REGULATIONS 5 AND 9 OF GOVERNMENT NOTICE R1278 OF 23 JULY 1971 AS PROMULGATED UNDER SECTION 30(2) OF THE WATER ACT, 1956 (ACT 54 OF 1956), AS AMENDED

NAME OF PERMIT HOLDER : Wildfarm Teufelsschlucht CC

ADDRESS : P O Box 20690, Windhoek

REGISTERED PROPERTY : Portion 4 (Wildfarm Teufelsschlucht) of Otjihavera No. 62

DISTRICT : Okahandja

VALIDITY PERIOD : 3 (Three) Years

BOREHOLES TO BE USED : Serial numbers WW 206534, WW 206535, WW 206536, WW 206537 and WW 206538

PURPOSE FOR WHICH WATER MAY BE USED : Irrigation Purposes

ABSTRACTION PER YEAR : 47 450 m³ maximum

This permit authorizes the holder (or his successors in title) to further abstract and use groundwater for the purpose as stated above, from the existing boreholes identified as WW 206534, WW 206535, WW 206536, WW 206537 and WW 206538 on the farm planning map, attached as Annexure A, subject to the following conditions:

All official correspondence must be addressed to the Executive Director

APPLICATION FOR THE LEGALIZATION OF FIVE EXISTING BOREHOLES AND FOR THE ABSTRACTION OF GROUNDWATER FOR PROCESSING AND DOMESTIC PURPOSES ON PORTION 4 (WILDFARM TEUFELSSCHLUCHT) OF THE FARM OTJIHAVERA NO. 62, OKAHANDJA DISTRICT, WILDFARM TEUFELSSCHLUCHT CC

1. The validity period shall be from 31 January 2023 to 30 January 2026. Notwithstanding the validity period of the permit for three years, this permit may be withdrawn or reduced at any time, should the groundwater level reach or approach a critical predetermined level.
2. An application for the extension of the validity period shall be in the possession of the Executive Director at least 6 (six) months before the expiry date of the permit.
3. Enclosed please find number plates for the boreholes. The number plates shall be prominently placed for easy identification of the boreholes. (Do not attach to movables such as the pump or engine). Each borehole should be identified with the correct number plate.
4. The permit is incident to the property and if the present owner sells the property, the permit shall be handed over to the new owner.
5. All water abstracted shall pass through a water meter and the permit holder shall bear all costs for the supply, installation and maintenance of this meter. The Executive Director shall be informed beforehand if a water meter is to be installed so that an inspection, if necessary, can be conducted. Installation of the meter shall be to the satisfaction of the Executive Director.
6. The permit holder shall record at the end of each month the readings on the water meters and enter such monthly readings on the prescribed Abstraction Return Form, which shall be submitted quarterly on or before the 10th day of the following quarter. Official quarters are understood to end on the last day of March, June, September and December of each year. Completed Abstraction Return Forms must be sent to the Control Officer: Abstraction Control, Private Bag 13193, Windhoek. If no water was abstracted during the quarter, a nil return must nevertheless be submitted. If the permit holder fails to send in returns regularly, this could lead to the withdrawal of the permit.
7. The permit holder shall record the water levels of the pumped sources once in three months at a time before the pumps are switched on in order to obtain the rest water levels and enter it on the above-mentioned return form.
8. Where a borehole is situated in a riverbed no embankments shall be constructed around the borehole in the riverbed which could result in the river damming up or its normal flow being impeded.
9. All installations, reservoirs, pipes, taps troughs and reticulation systems shall be leak proof to prevent any spillage of water. The permit holder shall take the necessary precautions to use the water on his property to the best advantage.

3.

APPLICATION FOR THE LEGALIZATION OF FIVE EXISTING BOREHOLES AND FOR THE ABSTRACTION OF GROUNDWATER FOR PROCESSING AND DOMESTIC PURPOSES ON PORTION 4 (WILDFARM TEUFELSSCHLUCHT) OF THE FARM OTJIHAVERA NO. 62, OKAHANDJA DISTRICT, WILDFARM TEUFELSSCHLUCHT CC

10. The Executive Director or his authorized representative in consultation with the Minister shall have the right to:
 - (a) withdraw, amend or replace any condition of this permit or withdraw this permit in its entirety, after reasonable notice to the permit holder.
 - (b) inspect the sources and installations at all reasonable times to determine whether the permit conditions are adhered to.
11. The Executive Director shall not accept liability for damage or loss suffered by the permit holder should the relevant sources wane or run dry or the period of validity of the permit not be extended or renewed.
12. Should the permit holder not comply with any of the permit conditions:
 - (a) the Executive Director may seal the boreholes until the conditions are complied with;
 - (b) the permit holder may be held liable for any costs which the Executive Director may incur as a result thereof, and
 - (c) the permit holder shall be guilty of an offence and shall, on conviction, be liable to the penalties prescribed in Section 170 of the Water Act, 1956 (Act 54 of 1956).


Ndiyakupi Ngituwamata (Ms)
EXECUTIVE DIRECTOR



APPENDIX D: PRE-FEASIBILITY STUDY

APPENDIX E: CURRICULUM VITAE OF CHARLIE DU TOIT

1. **Position:** Environmental Practitioner
2. **Name/Surname:** Charl du Toit
3. **Date of Birth:** 29 October 1960
4. **Nationality:** Namibian

5. **Education:**

Name of Institution	University of Stellenbosch, South Africa		
Degree/Qualification	Hons B (B + A) in Business Administration and Management		
Date Obtained	1985-1987		
Name of Institution	University of Stellenbosch, South Africa		
Degree/Qualification	BSc Agric Hons (Chemistry, Agronomy and Soil Science)		
Date Obtained	1979-1982		
Name of Institution	Boland Agricultural High School, Paarl, South Africa		
Degree/Qualification	Grade 12		
Date Obtained	1974-1978		

6. **Membership of Professional Association:** EAPAN Member (Membership Number: 112)

7. **Languages:**

	<u>Speaking</u>	<u>Reading</u>	<u>Writing</u>
English	Good	Good	Good
Afrikaans	Good	Good	Good

8. **Employment Record:**

	<u>From</u>	<u>To</u>	<u>Employer</u>	<u>Position(s) held</u>
	2009	Present	Green Earth Environmental Consultants	Environmental Practitioner
	2005	2008	Elmarie Du Toit Town Planning Consultants	Manager
	2003	2005	Pupkewitz Megabuild	General Manager
	1995	2003	Agra Cooperative Limited Namibia	Manager Trade Chief Agricultural

1989	1995	Development Corporation	Consultant
1985	1988	Ministry of Agriculture	Agricultural Researcher

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.



Charl du Toit

APPENDIX F: CURRICULUM VITAE OF CARIEN VAN DER WALT

1. **Position:** Environmental Consultant
2. **Name/Surname:** Carien van der Walt
3. **Date of Birth:** 6 August 1990
4. **Nationality:** Namibian

5. **Education:**

Institution	Degree/Diploma	Years
University of Stellenbosch	B.A. (Degree) Environment and Development	2009 to 2011
University of South Africa	B.A. (Honours) Environmental Management	2012 to 2013

6. **Membership of Professional Associations:**

EAPAN Member (Membership Number: 113)

7. **Languages:**

Language	Speaking	Reading	Writing
English	Good	Good	Good
Afrikaans	Good	Good	Good

8. **Employment Record:**

From	To	Employer	Positions Held
07/2013	Present	Green Earth Environmental Consultants	Environmental Consultant
06/2012	03/2013	Enviro Management Consultants Namibia	Environmental Consultant
12/2011	05/2012	Green Earth Environmental Consultants	Environmental Consultant

9. **Detailed Tasks Assigned:**

Conducting the Environmental Impact Assessment, Environmental Management Plan, Public Participation, Environmental Compliance and Environmental Control Officer

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engage.

Carien van der Walt

APPENDIX G: ENVIRONMENTAL MANAGEMENT PLAN