

Environmental Management Plan
for
Operations of Juda Haus Lodge in Katima Mulilo Area, Zambezi
Region



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Juda Haus Lodge
P. O. Box 1378
Ngweze
Namibia

Project Information

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<i>Proponent</i>	Juda House Lodge P. O. Box 1378 Ngweze Namibia
<i>Consultancy Firm</i>	Namib Consulting Services CC P. O. Box 96093 Windhoek Namibia Cell: +264 85 694 9740/ +264 81 408 3679 namibconsulting@gmail.com
<i>Lead Environmental Assessment Practitioner, Qualification and professional affiliations</i>	Siyamana Mulele Master of Environmental Management and Sustainability (2013) Senior Professional Geoscientist with the Geoscience Council of Namibia Lead Practitioner with the Environmental Assessment Professionals Association of Namibia
<i>Contributing Environmental Assessment Practitioner</i>	Sililo Sitengu BSc. Hons. Environmental Technology (2008)
<i>Signature by Lead EAP</i>	



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Abbreviations

ECC	: Environmental Clearance Certificate
EMP	: Environmental Management Plan
DEAF	: Directorate of Environmental Affairs and Forestry
MEFT	: Ministry of Environment, Forestry and Tourism

1. INTRODUCTION

Juda Haus Lodge is located on the outskirts of the town of Katima Mulilo in the Zambezi Region. The Lodge provides accommodation and related hospitality services to local and transient visitors. This referred activity is among those listed in the Annexure to Schedule (GN. No. 29 of 2012) of the Environmental Management Act (No. 7 of 2007), that cannot be undertaken without an environmental clearance certificate (ECC). Therefore, Juda Haus Lodge requires to comply with the referred legislative requirements for its operations.

Namib Consulting Services CC was appointed to provide services related to submitting an application to the Ministry of Environment, Forestry and Tourism (MEFT) for an environmental clearance certificate for the services rendered by the Proponent. Subsequently, this document is composed in compliance to the requirements of the MEFT, to develop an environmental management plan (EMP) for the operations of Juda Haus Lodge.

2. OBJECTIVE

The objective of this document is to assess and review the operations of Juda Haus Lodge to determine the environmental and social consequences towards the development of an EMP. The EMP will provide a framework to ensure the operations comply with the requirements of the Environmental Management Act (No. 7 of 2007) and its regulations.

3. LOCALITY

Juda Haus Lodge is located some 6 km east on the outskirts of the town of Katima Mulilo. The site is on the Southern bank of the Zambezi River, and can be accessed through the B8 Highway, however turning immediate east some 5 kilometres from the central business district (CBD) eastwards.

The lodge consists an area of 1.6 hectares' and has several facilities onsite including; kitchen and restaurant facility, guest rooms with an additional family guestroom, a storage room for equipment, administrative office, a laundry facility and a private family house. These facilities operate to provide accommodation and hospitality services.

4. LAND OWNERSHIP AND USE

4.1 Land Ownership

Juda Haus Lodge started as a family home for many years and was developed into a lodge in 2021. The 1.6 hectare of land is in communal area and is owned by the Kakona Family with part of the lodge area utilised for family home residence. Land ownership in communal areas is administered through the traditional systems with letter letters of approval for allocation of land and subsequent registration with the local land board proceeds thereon.

4.2 Land Uses

The characteristics land use around the Lodge are typically those in communal areas that include; crop farming areas, village residences and other similar hospitality facilities. On the Northern side of the Lodge is the Zambezi River, although the Lodge is only adjacent to the tributary of the main river course.

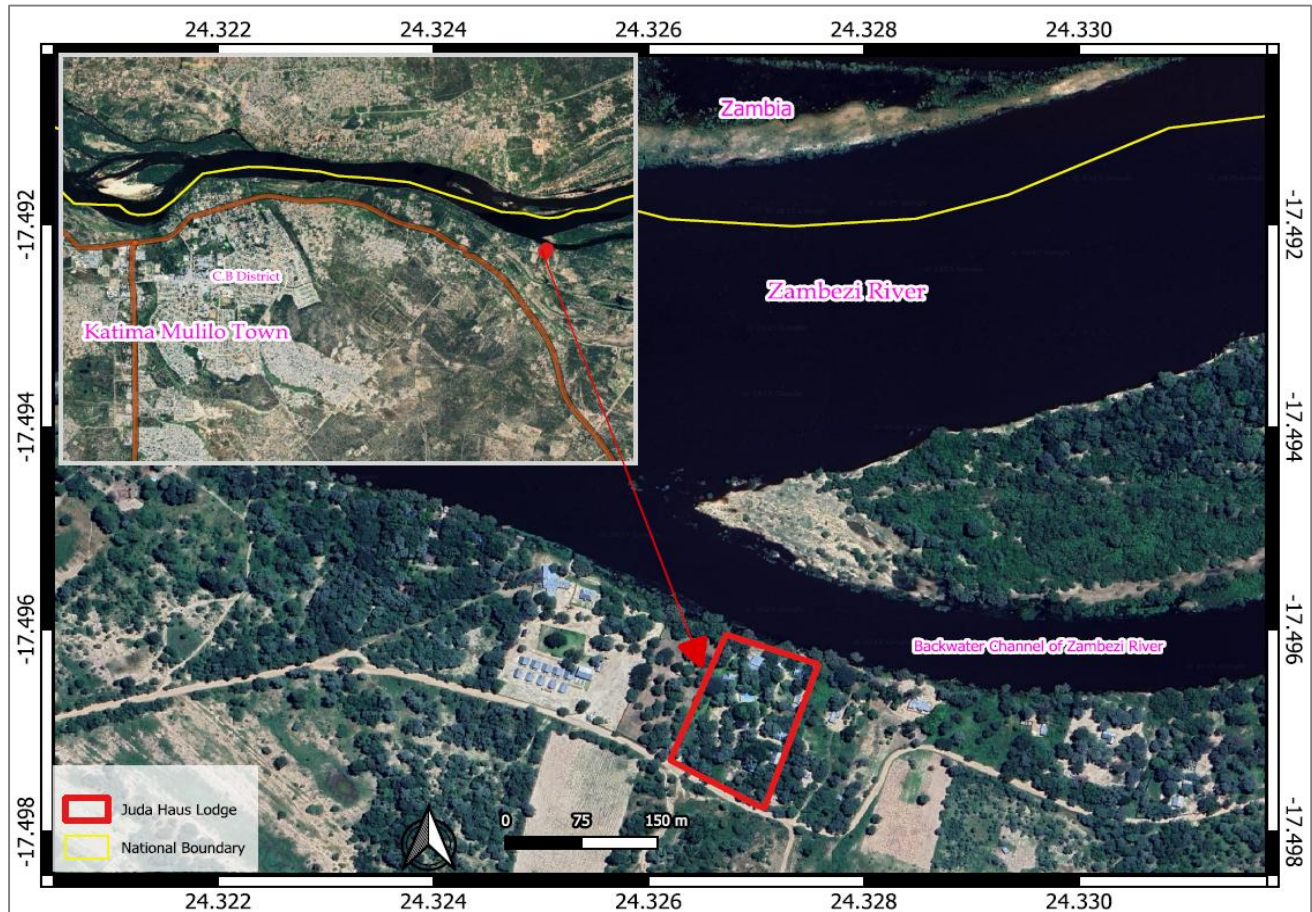


Figure 4:1 Location of Juda Haus Lodge

5. DESCRIPTION OF ACTIVITY

The operations at the Lodge focus around providing accommodation and hospitality services. It is therefore that these activities are grouped into the following facilities services:

- i. Accommodation
- ii. The kitchen and restaurant
- iii. Storage
- iv. Laundry activities
- v. Lodge administration and staff services
- vi. Waste management facilities

These facilities are described in details below:

- i. *Accommodation facilities*- these comprise eleven (11) guestrooms and two (2) family guest room that are self-contained with bathrooms. these are served with housekeeping on daily basis that includes clean linen, refuse removal as well as general cleaning and sanitizing of areas. Wastewater from bathrooms is channelled to a septic tank located on the outside of the premises. Refuse from the rooms collects at a solid waste site located inside the premises.
- ii. *Kitchen and restaurant* - these facilities are for meal preparations and servings to stay or day guests to the lodge. The restaurant has its own public bathroom for guests. Waste water from these facilities is conveyed to the septic tank located within the premises of the lodge, while refuse of various types including papers, plastics, bottles, cans and packaging of various material types are conveyed to the collection point.

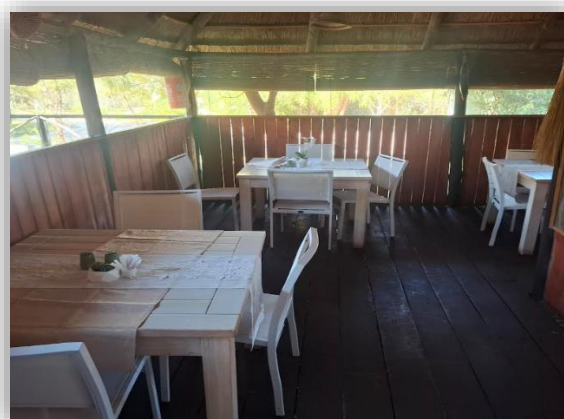


Figure 2 Outlook of the kitchen

- iii. *Storage room* – this facility is utilised for storage of materials and equipment used for various services including maintenance on the lodge. The following were observed in the storage; lawn mowers, fuel containers, gas cylinders, containers, paint and many other loose items.



Figure 3 Outlook inside the storeroom

- iv. *Laundry Operations* – the laundry supplies clean linen for the upkeep of guest rooms. The laundry room consists of two (2) laundry machines that are operated on daily basis as needed for housekeeping purposes of guest rooms. Wastewater from the laundry activities is channelled through sewer reticulating lines to the septic tank located on the outside of the lodge. Refuse from the laundry room includes packaging papers of both plastics and hard paper such as cardboards and bottles of plastic and glass including cans that are conveyed to the waste collection point.

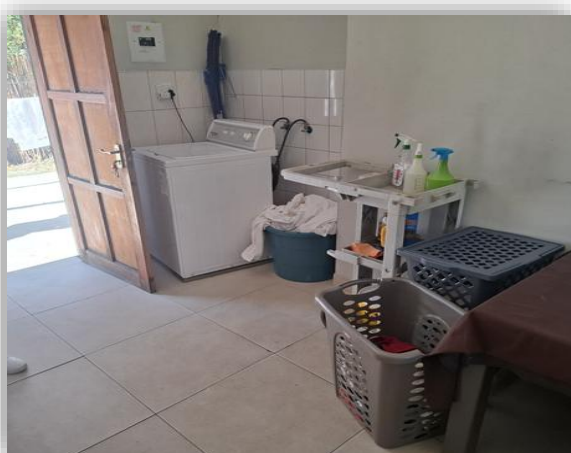


Figure 4 Outlook inside the laundry room

- v. *Lodge Administration and staff services*- the administrative part of the lodge includes an office with staff bathrooms. While the office serves the work of the administrator of the lodge, the
- vi. *The waste management facilities* - on the lodge includes there are two septic tanks of which the inside serves the office building, staff bathrooms and kitchen and restaurant public bathrooms, while the outside tank serves all other facilities including the laundry room and all guestrooms and the family home. Beside the wastewater, the lodge has a solid waste collection point located outside the lodge where all kinds of refuse are assembled. Once refuse accumulates substantially, this is collected and conveyed to the Katima Mulilo Town Council's waste disposal site. On the other hand, a contractor is called to drain sewer and convey for disposal at the Katima Mulilo Town Council wastewater disposal site.



Figure 5 Outlook of Septic tanks and refuse holding/collection point.

6. RELEVANT LEGISLATION

A review of relevant legislation to operations of Juda Huas Lodge provides those listed along with the requirements and relevance in Table 1.

Table 1 Relevant legislation to the proposed activity

Legislative Instrument	Requirement	Applicability
Namibian Constitution (1990)	Article 95 on maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources in a sustainable way for the benefit of all Namibians, both present and future.	A relatively high level of environmental protection is called for in respect of pollution control and waste management and protection of natural resources

Environmental Management Act No. 7 Of 2007 And Environmental Impact Assessment Regulations GN of 2012 and	Aims to promote the sustainable management of the environment and the use of natural resources. further provides for a process of assessment and control of activities which may have significant effects on the environment. The Act and its regulations prescribe the requirements for obtaining an ECC for listed activities.	As listed activity this project is to align with the requirements to develop an EMP towards compliance with the Act.
The Water Resources Management Act (No 11 of 2013)	Sections 68: places individuals or Institutions responsible for an activity that has potential for pollution to take necessary steps to prevent occurrence.	Take all necessary efforts to prevent the pollution of the water source.
Labour Act Of 2007	The objectives of the Act are to ensure the health, safety and welfare of employees but also outlines the rights and obligation of employers.	The welfare of workers need be safeguarded in the work environment.
Soil Conservation Act 76 of 1969	Intends to combat and prevent soil erosion, and for the conservation, protection and improvement of the soil, vegetation and the sources and resources of the water supplies. Under section 4 the Minister may by means of a direction order the owner of land to construct the soil conservation works.	Operations shall not lead to exacerbated erosion.
Communal Land Reform Act 5 of 2002 (section 30)	To provide for the allocation of rights in respect of communal land; to establish Communal Land Boards; to provide for the powers of Chiefs and Traditional Authorities and boards in relation to communal land; and to make provision for incidental matters.	Rights over the portion of land need to follow necessary allocation process for security of the operations.
Namibia Tourism Board Act 21 of 2000	Section 30 of the act requires persons that establish accommodation facilities to register with the Namibia Tourism Board.	Registration with the Namibia Tourism Board.
National Solid Waste Management Strategy	The strategy aims to strengthen institutional and legal framework for management of solid waste serving as a guide to institutions such as local authorities on sound waste management practices.	Provides a guide to managing solid waste based on sustainable development principles.

7. IMPACT IDENTIFICATION AND MITIGATION

Although there are various approaches to impact identification, these all will agree to the terms; aspects, impacts and mitigation. Aspects refers to activities, products or services that interact with the environment or people has and could lead to an impact. The resultant impacts may potentially be positive or adverse and thus necessitate some intervention in form of mitigations.

7.1 Aspects

The following aspects are identified from onsite operations:

- i. *Kitchen and restaurant facilities*– services rendered from kitchen and restaurant has the following aspects with potential impacts on the environment or people; surplus food and refuse as well as wastewater from bathroom facilities.
- ii. *Accommodation facilities*- these facilities are associated with generation of wastewater from bathrooms and refuse of various.
- iii. *Storage room* – the storeroom is used to store hazardous and non-hazardous substances and thus there is potential for such material exposed to open surfaces or people.
- iv. *Laundry Operations* – laundry operations utilise detergents leading to generating wastewater but also produces refuse in various forms.
- v. *Lodge administrative and staff services*- the administrative office and staff facilities produces refuse of various types, while the associated staff bathrooms also generate wastewater.
- vi. *Waste management facilities* – these are collecting points for both solid waste and waste water. If these are unmanaged can lead to overflow of wastewater into the environment, while refuse can scatter beyond the site on to adjacent land and into the stream.

7.2 Impacts

The following impacts are identified from the lodge operations:

Table 2 Operational aspects and associated impacts

Aspect	Impact
Unmanaged Surplus food	<ul style="list-style-type: none">– Can create unhygienic and nuisance conditions to human health and welfare– Can lead to loss of aesthetic value of the local environment
Various refuse across lodge facilities to the waste collection point	<ul style="list-style-type: none">– Contaminate the local environment (land and stream) if not well managed– Can lead to loss of aesthetic value of the local environment
Wastewater across bathrooms and laundry facilities to the septic tanks	<ul style="list-style-type: none">– Create an unhygienic and nuisance condition that threaten human health and welfare– Contaminate the local subsurface water resources.
Hazardous substances storage and use	<ul style="list-style-type: none">– Spillage or leakage can contaminate soil or cause fires or end up in adjacent water sources.– If not well-handled can harm workers.
Storage, emptying and waste collecting facilities and transportation to disposal sites.	<ul style="list-style-type: none">– Spillages can create unhygienic conditions– Contaminate the local subsurface water resources.

7.3 Mitigation

The following mitigation controls are identified for the identified impacts:

Table 3 Impact mitigations

Impact	Mitigation Controls
Unhygienic and nuisance conditions that threaten human health and welfare	<ul style="list-style-type: none"> – Separate surplus food refuse from other waste for better handling. – Consider the recycling of food waste through composting or alternatively supply to other users for pig farming or worm rearing
Loss of aesthetic value of the local environment	<ul style="list-style-type: none"> – No food waste should be discarded to an unmanaged site – Waste food storage or disposal site shall be secured in a fence area. – Ensure any waste food supplied to other users is well handled for intended use
Contaminate the local environment (land and stream) if not well managed.	<ul style="list-style-type: none"> – No random disposal of refuse to be allowed onsite the lodge or the surrounding area – As far as practically possible, introduce waste separation into plastics, cans and hard papers/packaging's or boxes. – Non-recyclable waste to be delivered at a local designated waste disposal site. – Collaboration with any local waste recyclers for collection and reuse. – Ensure the transportation for non-recyclable waste does not allow spread of litter in transit.
Loss of aesthetic value of the local environment	<ul style="list-style-type: none"> – No refuse shall be allowed to clutter the local lodge t and surrounding environment.
Create an unhygienic condition that threaten human health	<ul style="list-style-type: none"> – No wastewater shall be allowed to spill or leak into the local environment – The use of septic tanks for wastewater management as per practice is highly recommended.
Contaminate the local subsurface water resources.	<ul style="list-style-type: none"> – Carry out regular inspection of conservancy tanks for any signs of leakage and address soonest. – Monitor the levels of the conservancy tank and address potential for overflows. – Inspect all integrity of the reticulating lines for leakages and address where necessary
Spillage or leakage to contaminate soil or water sources	<ul style="list-style-type: none"> – All substances should be securely stored – Practice good housekeeping in the stores with some marked ordering of materials stored.
Health hazard to the workers	<ul style="list-style-type: none"> – Substance with potential hazards shall be marked accordingly. – Practice good housekeeping in the stores with some marked ordering of materials stored.

Spillages can create unhygienic conditions	– Practice use of drip buckets when contractor empties septic tanks.
	– Septic tank to be fenced off and all vegetation in and around the area cleaned

8. ENVIRONMENTAL MANAGEMENT PLAN

8.1 Objective

This Environmental Management Plan (EMP) establishes a framework aimed at addressing adverse impacts from the operation of Juda Haus Lodge. It is the overall objective of the EMP that activities at the site are carried out in a systematic approach towards mitigation of identified adverse impacts whilst enhancing the derivable benefits.

8.2 Roles and Responsibilities

The following roles and responsibilities are established towards the implementation and compliance to the EMP.

8.2.1 The Proponent

The Proponent remains the Juda Haus Lodge, through the designated area operational manager. The following responsibilities will reside with the stated area operational manager;

- Ensure implementation of all requirements of the EMP, inclusive of legislative and financial requirements to ensure that the Proponent is compliant at all times with the entire scope of measures prescribed.
- Keep the Proponent constantly informed of the implementation of the EMP and all matters relating to monitoring, review, and updates.
- Lobby and secure resources required for comprehensive implementation of the EMP.
- Keep and maintain a monitoring, review, and update schedule on the progress of implementing the EMP.
- Ensure other relevant stakeholders are updated and informed on the implementation of EMP. (i.e. the conservancy, local headmen, and village development representatives).
- Designated an environmental and safety officer towards comprehensive implementation of the EMP.
- Ensure that all the required environmental licenses and permits have been obtained as required.
- Ensure environmental inspections, audits and monitoring of environmental factors as established in EMP.
- Produce reports on environmental and social performance as per monitoring plan at stipulated intervals.
- Ensure that operations are reviewed and new impacts identified from unforeseen activities and recommend necessary measures for avoidance, or mitigation.

8.2.2 Lodge Administrator

The Lodge Administrator shall be designated to the individual responsible for site and with the limited nature of the operations of the lodge, the administrator assumes the role and responsibilities assigned to the Environment and Safety Officer. The Site Administrator shall carry out the following:

- Ensure that all relevant measures contained in the EMP are comprehensively implemented.
- Establish and maintain information and record system on incidents, corrective actions, grievances process and outcomes.
- Liaise with relevant authorities and contractors regarding compliance to legislation requirements.
- Ensure compliance to established safety standards and requirements for safer operations.

- Providing recommendations for remedial action in the event of any non-compliance.
- Ensure an incident logbook is established, maintained, updated.
- Investigation as so necessary of grievances or incidents towards the resolution process.

8.2.3 Environmental Control Officer

The role of an Environmental Control Officer is critical to the implementation of an environmental management plan, however, the limitation to employ such designations for small operations has been obvious. Therefore, while the site administrator takes on the role to oversee the necessities of the measures contained in the EMP continuously on the site, the role of ECO is recommended to an environmental consultant to offer internment auditing and inspections towards meeting compliance to the ECC requirements.

8.3 Implementation Plan

The following table sets out a plan to comprehensively manage the identified impacts, further outlining the responsibilities and frequency of effecting the measures.

Table 4 Operational management schedule

Aspect	Impact	Mitigation Controls	Frequency	Responsible
1. Unmanaged surplus food.	1.1 Unhygienic conditions to human health and welfare.	Separate surplus food refuse from other waste Consider the recycling of food waste though composting or alternatively supply to other user for pig farming or worm rearing	Continually Continually	Lodge administrator
	1.2 Loss of aesthetic value of the local environment	No food waste should be discarded to an unmanaged site Waste food storage or disposal site shall be secured in a fence area.	Continually Continually	Lodge Administration
2. Various refuse across lodge facilities.	2.1 Contaminate the local environment (land and stream) if not well managed	All refuse to be managed from random disposal or allow to clutter the local environment	Continually	Lodge Administration
		Introduce waste separation in different waste bins for plastics, cans and hard papers/packaging's or hard paper.	Once-off and continually	Proponent
		Unrecyclable waste to be delivered at a local designated waste disposal site	Weekly	Proponent
		Collaboration with any local waste recyclers for collection and reuse.	Continually	Proponent
		Refuse holding point to fenced off.	Once-off	Lodge Administrator
		Control the burning of waste to an improvised incinerator container/drum.	As necessary	Lodge Administrator
	2.2 Loss of aesthetic value of the local environment	No refuse shall be allowed to clutter the local environment.	Continually	Lodge Administrator

3. Wastewater across bathroom facilities	3.1 Create an unhygienic condition that threaten human health	No wastewater shall be allowed to spill or leak into the local environment	Continually	Lodge Administrator
		The use of conservancy tanks for wastewater management as per practice is highly recommended to continue as standard practice.		Proponent
		Carry out regular inspection of conservancy tanks for any signs of leakage and address soonest.	B-weekly	Lodge Administrator
		Monitor the levels of the conservancy tank and address potential for overflows.	Weekly	
		Inspect all integrity of the reticulating lines for leakages and address where necessary	Monthly	
4. Hazardous substances storage and use	4.1 Health hazard to the workers	Substance with potential hazards shall be marked accordingly.	Once-off and maintained	Lodge Administrator
		Practice good housekeeping in the stores with some marked ordering of materials stored.	Once-off and maintained	Lodge Administrator
5. Sewerage collection/emptying of septic tanks and transfer to disposal sites	5.1 Contaminate the local subsurface water resources. Spillage or leakage to contaminate soil or water sources	Practice use of drip buckets when contractor empties septic tanks.	Continually	Lodge Administrator
		Septic tank to be fenced off and all vegetation in and around the area cleaned.	Once-off	Proponent

8.4 Review of the Plan

This EMP must be used as an on-site reference document in the operation of the Lodge. The validity of the EMP is determined by the duration of the ECC that will further stipulate required reporting requirements. It is therefore, necessary that regular self-auditing on quarterly basis is implemented should an ECC be issued. In the absence of an ECO, an environmental expert should be acquired to consolidate reports in alignment with reporting requirements.

9. CONCLUSION AND RECOMMENDATIONS

Conclusion

Juda Haus Lodge offers accommodation and hospitality services on the outskirts of the town of Katima Mulilo. This operation is among those listed in the requirements of Environmental Management Act and the EIA Regulations, that cannot be undertaken without an environmental clearance certificate.

In the review of onsite operations, it was found that the major environmental challenges are potential pollution and health hazards from various sources that include;

- a) Effluent from the various facilities onsite
- b) Refuse of various types
- c) Hazardous substance

Premised on the above established potential impacts, mitigation measures were identified and consolidated into a management plan. These measures are based on standard practice in the field of environmental management and more so considered standard practice.

The Proponent through the established roles shall be liable for the implementation of the EMP and to achieve required level of implementation. Non-compliance shall be subject to legislative requirements and subsequent applicable processes by the Environmental Commissioner.

Recommendation

The Environmental Assessment Practitioner recommends to the Environmental Commissioner, that this developed EMP is a sufficient tool and framework to adequately manage the potential significant adverse impacts established in the report from the operations at Juda Haus Lodge. It is therefore the Proponent is recommended that for issuance of an environmental clearance certificate.