



**ECC**  
**ENVIRONMENTAL**  
**COMPLIANCE CONSULTANCY**



ECC-09-263-REP-01-D

# **ENVIRONMENTAL MANAGEMENT PLAN FOR JUMBO CHARCOAL FACTORY AND BRIQUETTE PLANT**

PREPARED FOR

JUMBO CHARCOAL PTY LTD



FEBRUARY 2020

## TITLE AND APPROVAL PAGE

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## DEFINITIONS AND ABBREVIATIONS

BSCI	Basic Association Compliance Initiative
COC	Chain of Custody
ECC	Environmental Compliance Consultancy
EIA	Environmental Impact Assessment
EMA	Environmental Management Act, 2007
EMP	Environmental Management Plan
FSC	Forest Stewardship Council
MET	Ministry of Environment and Tourism
MME	Ministry of Mines and Energy
MSDS	Material Safety Data Sheet
PPE	Personal Protective Equipment
SHE	Safety Health and Environment
SOP	Standard Operating Procedures

# 1 INTRODUCTION

## 1.1 BACKGROUND DESCRIPTION

Jumbo charcoal factory and briquette plant hereinafter referred to as Jumbo, is a charcoal packaging and export company located in Okahandja, Namibia. Jumbo was established in 1989 and has since become one of the largest exporters of barbecue charcoal. Charcoal is exported internationally mainly to the Mediterranean, Central Europe, and the United Kingdom.

Jumbo sources its raw material from local farmers who produce sustainable charcoal in accordance with the Forest Stewardship Council (FSC) and Fairtrade standards. The charcoal is made entirely of Namibian hardwood encroacher species such as *Dichrostachys cinerea*, *Terminalia sericea*, *Terminalia sericea*, *Acacia Millerfera*, etc. The charcoal is produced on-site and delivered to jumbo where it is inspected, screened and graded before being packaged. Trucks then transport the bags of charcoal to the closest port, Walvis Bay, where it is transported to various destinations.

Jumbo is certified by the Forest Stewardship Council (FSC) which is either Forest Management or Chain of Custody (COC) and is subject to annual audits by independent external auditors. These audits emphasis on social, economic and environmental issues of the entire production chain.

Jumbo takes pride in the contribution made to the Namibian economy over the past 29 years by creating over 200 direct employment and further 1000 indirect jobs. Furthermore, Jumbo contributes to the socio-economic and natural environment through continued dedication to the production of an environmentally sustainable product.

Jumbo is located on Farm Ongombeomuriu No. 56 and is subdivided and zoned as general industrial. The area is located in the north-eastern sector (Portion A) of Portion 1, and its buildings and works occupy an area of approximately 4.7 hectares (refer To Appendix A). The farm is approximately 3km west of Okahandja on the B2 highway in the Otjozondjupa Region, Namibia (see FIGURE 1).







## 1.2 THE PROPONENT OF THE PROJECT

The proponent details are provided in Table 1.

**TABLE 1 – PROPONENT DETAILS**

NAME	ADDRESS	E-MAIL	TELEPHONE
Ian Galloway	P O Box 51, Okahandja	<a href="mailto:jumbo@mweb.com.na">jumbo@mweb.com.na</a>	+264 (64) 503838

## 1.3 ENVIRONMENTAL REGULATORY REQUIREMENTS

The Jumbo charcoal factory and briquette plant predates the implementation and development of the Environmental Management Act (EMA) 2007. Facilities predating the EMA are required to ensure potential environmental risks and impacts are minimised and managed, through the development and implementation a site-specific Environmental Management Plans (EMP).

The application for an environmental clearance certificate, as set out in the instruction from the Ministry of Environment and Tourism (MET) is for facilities predating the EMA require an application for an environmental clearance in the form of an official application (Form 1) supported with the site's environmental management plan (this document) and a risk assessment to determine the potential impacts operations of the Jumbo charcoal factory and briquette plant have on the environment and safety.

## 1.4 PURPOSE AND SCOPE OF THIS REPORT

This EMP is a live document and shall be reviewed at predetermined intervals, and/or updated to reflect material changes to the operations and to allow for continual improvement. All personnel working in the facility are legally required to comply with the standards set out in this EMP.

The scope of this EMP includes all operations of the Jumbo charcoal factory and briquette plant. The proponent shall be responsible for each phase of the project and the implementation of this EMP.

## 1.5 LEGAL REQUIREMENTS

Jumbo ensures compliance with legislation and standards applicable to the factory. The pertinent legislation and standards which may be applicable on the project, are included in Appendix B.

## 1.6 DOCUMENT HIERARCHY

In terms of the Namibian Environmental Impact Assessment (EIA) Regulations (Government Notice (GN) 28, 29, and 30 promulgated on 6 February 2012) enacted in terms of the Namibian Environmental Management Act (Act no. 7 of 2007) (EMA), the proposed activity requires an Environmental Management Plan.

This Environmental Management Plan (EMP) has been developed to assist Jumbo during the operations of its facility. Where there is any conflict between the provisions of this EMP and any obligations under their respective contracts, including statutory requirements (such as licences, project approval conditions, permits, standards, guidelines, and relevant laws), the contract and statutory requirements are to take precedence.

In the event of any real or perceived ambiguity between elements of this EMP, and/or statutory requirements, the proponent shall first gain clarification prior to implementing that element of the EMP over which the ambiguity is identified.


## 1.7 OBJECTIVES



The objective of this environmental management plan is to address environmental issues on premises and during the factory packaging and to detail the environmental management framework, practices, and procedures that will be followed during the operations of the facility with the aim of minimising potential environmental impacts and ensuring that statutory requirements and other obligations are fulfilled. The main objective is, therefore, the reduction or mitigation of environmental consequences resulting from the operations and actions during the packaging process.




## 1.8 OPERATIONAL ACTIVITIES



Approximately 2500 tons of charcoal is packed and exported per month. All equipment is serviced and maintained and replaced when required. TABLE 2 and FIGURE 2 describes the various activities of Jumbo.

**TABLE 2 – OPERATIONAL ACTIVITIES OF THE JUMBO CHARCOAL FACTORY AND BRIQUETTE PLANT**

ACTIVITIES	DESCRIPTION
<p><b>Delivery and Offloading</b></p> 	<p>Charcoal is delivered by the delivery trucks, weighed and given a batch number before charcoal is manually offloaded.</p>

ACTIVITIES	DESCRIPTION
<p><b>Charcoal Sieving and Binning</b></p> 	<p>Charcoal is loaded onto vibrating screens that sieve it into various sizes with different classifications. The sieve also detects any metal content in the charcoal. Thereafter, the charcoal is weighed and measured. The charcoal is conveyed to holding bins for each classified size.</p>
<p><b>Bagging Plant</b></p> 	<p>From the holding bins, all the products (different sized charcoal) are sent to the bagging plant where it is mechanically put into bags for commercial purposes.</p>
<p><b>Waxing</b></p>	<p>Charcoal is mixed with wax for easier flammability. Charcoal is the bagged according to customer specification.</p>

ACTIVITIES	DESCRIPTION
	
<p><b>Stitching</b></p> 	<p>Once the charcoal has been bagged, these bags will be stitched closed manually and moved to the palletising station located in another area.</p>
<p><b>Palleting (Stacking)</b></p> 	<p>The packed charcoal products will be placed onto pallets for easy internal movement and storage. Charcoal packages will be stacked 2.7m high on a pallet and then the pallet and stack will be industrially wrapped with plastic.</p>

ACTIVITIES	DESCRIPTION
<p><b>Packing and loading for shipment</b></p> 	<p>Once wrapped the palletted charcoal will either be transported to the warehouse for storage or directly into trucks for shipment.</p>
<p><b>Bailing</b></p> 	<p>All empty bags recycled by neatly packing and pressing into a bunch for transporting back to the farms.</p>



The diagram below illustrates the process of a typical day at Jumbo Charcoal.

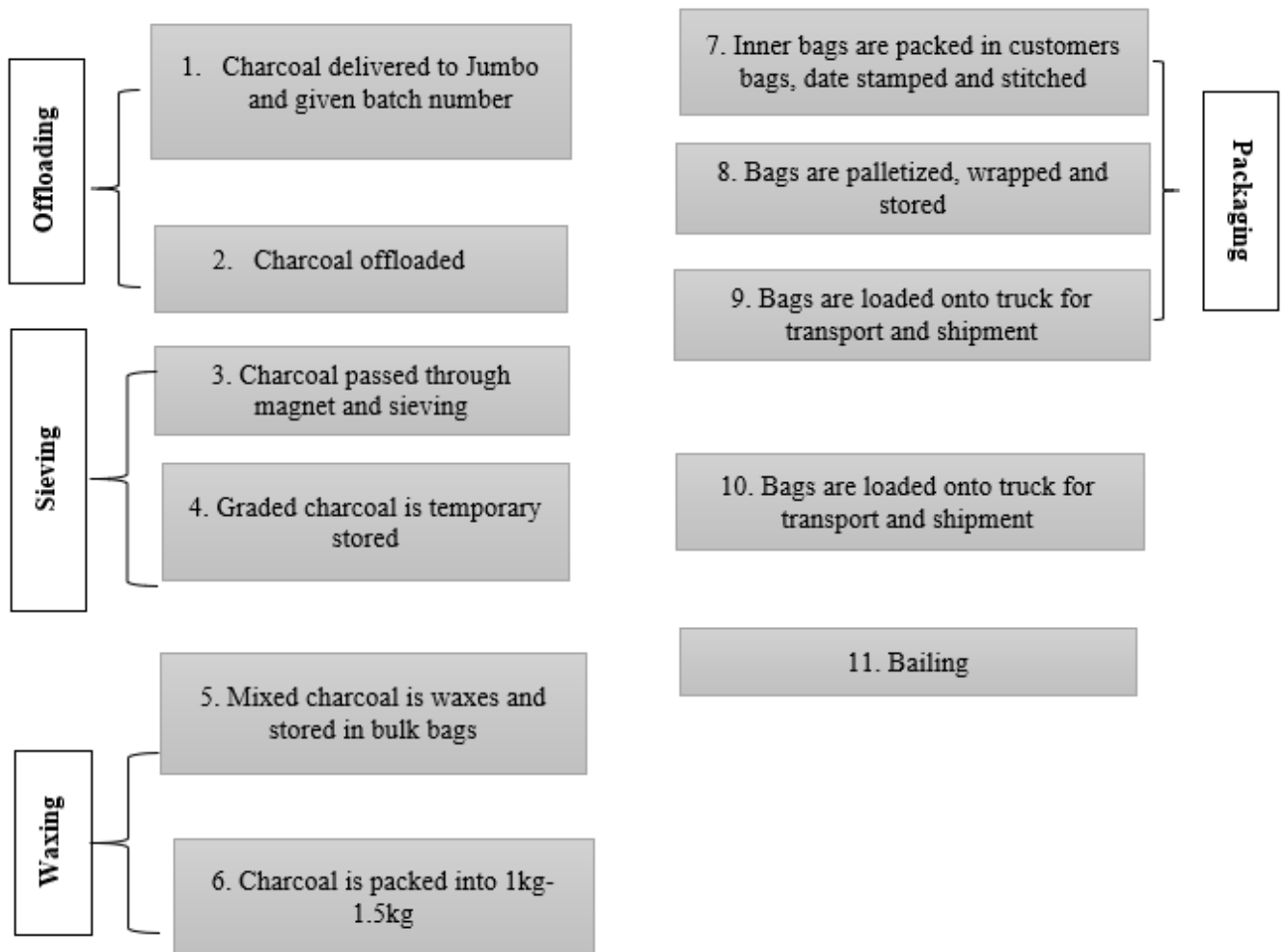


FIGURE 2 – JUMBO CHARCOAL FACTORY AND BRIQUETTE PLANT PROCESS FLOWCHART

## 1.9 MANAGEMENT OF THIS EMP

The proponent will hold the environmental clearance certificate for the factory and shall be responsible for the implementation and management of this EMP. The implementation and management of this EMP and thus the monitoring of compliance shall be undertaken through daily duties or activities and monthly inspections, incorporated into the daily tasks for the employees at the factory.

## 1.10 ENVIRONMENTAL CONSULTANCY

Environmental Compliance Consultancy (ECC), a Namibian consultancy registration number 2013/11401, has prepared this EMP on behalf of the proponent. ECC operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa, in the public and private sectors. ECC is independent of the proponent and has no vested or financial interest in the project except for fair remuneration for professional services rendered. All compliance and regulatory requirements regarding this document should be forwarded by email or posted to the following address:

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## 2 ENVIRONMENTAL MANAGEMENT FRAMEWORK

This EMP provides measures, guidelines and procedures for managing and mitigating potential environmental impacts. The EMP also indicates monitoring and reporting guidelines and sets responsibilities for those carrying out management and mitigation measures.

### 2.1. OBJECTIVES AND TARGETS

Environmental protection is the responsibility of management and if the management is environmentally aware, it motivates all employees and their associated business partners, customers and suppliers to think and act in a more environmentally responsible manner. Environmental objectives and targets have been developed so that activities of Jumbo can minimise potential impacts on the environment, as far as reasonably practicable.

Environmental objectives for the facility are as follows:

- Zero pollution incidents
- Sustainable resource use (water and energy)
- Application of the waste management hierarchy
- The safe working environment for employees, and
- Use natural resources effectively and efficiently.

### 2.2. ORGANISATIONAL STRUCTURE, ROLES AND RESPONSIBILITIES

The proponent shall be responsible for:

- Ensuring all members involved in the operations of Jumbo, comply with the procedures set out in this EMP
- Ensuring that all personnel are provided with adequate training, supervision, and instruction to fulfil this requirement
- Ensuring that any personnel allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood, and
- The proponent shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this EMP, and meet the responsibilities listed above.

### 2.3. GENERAL MANAGER

A General Manager is available during the operations of the Jumbo factory. The General Manager will be responsible for the following roles:

- Ensuring the all staff are aware of the commitments made in the EMP and any other relevant regulatory requirements and that operations will be undertaken in compliance with these;
- Conducting meetings regularly to review actions arising from previous inspections, current status of tasks and schedule of upcoming tasks;
- Arranging an independent 3rd party audit to assess the level of compliance to the EMP;
- Liaising with the Safety, Health, and Environmental Representative.

## 2.4. SAFETY, HEALTH AND ENVIRONMENTAL REPRESENTATIVE

Jumbo employ a full time Safety and Health representative who is responsible for the implementation of the EMP for the facility. The SHE representative will be available, as required, throughout the operations of the factory and is responsible for the following roles:

- Being the principal contact point concerning environmental performance;
- Notifying relevant regulatory authorities if serious environmental incidents occur as soon as practicable;
- Being responsible for all management plans and environmental monitoring;
- Being responsible for receiving and responding to environment-related complaints received from the public or other stakeholders;
- Bearing authority and independence to demand reasonable steps as required to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant operational activities be ceased immediately should an adverse impact on the environment be likely to occur.
- The monthly EMP checklist must be completed monthly by the SHE representative. Findings are to be submitted to the General Manager
- The internal compliance certificate must be completed monthly by the SHE representative incorporating the checklist's findings. This certificate must be submitted to the General Manager.

In addition, the SHE representative will be responsible for the following:

- Maintaining and providing assistance in the implementation of this EMP
- Undertaking environmental monitoring and ensuring statutory compliance with government agencies and legislation
- Maintaining environmental records including environmental monitoring data, complaints, and environmental incident reports
- Ensuring that best environmental practice is undertaken throughout the operations of the facility
- Provisioning of environmental awareness/management training and inductions
- Timely distribution of any relevant environmental documentation, including revisions to this EMP, to all staff, and
- Reporting to the General Manager

The key personnel and environmental responsibilities are presented in TABLE 3.

**TABLE 3 - KEY ROLES AND RESPONSIBILITIES**

ROLE	RESPONSIBILITY & DUTIES
<b>General Manager (Proponent)</b>	<ul style="list-style-type: none"> <li>• Responsible for ensuring compliance with this EMP</li> <li>• Ensuring employees understand and comply with the requirements of this EMP</li> <li>• Ensuring that all personnel are provided with enough training, supervision and instruction to fulfil this requirement</li> <li>• Ensuring compliance with this EMP including overseeing the day to day activities during operations, and routine and non-routine maintenance works during operations</li> <li>• Ensure the environmental policy is communicated to all personnel</li> <li>• Responsible for providing the required resources (including financial and technical) to complete any required tasks</li> <li>• Responsible for the management, maintenance and revisions of this EMP</li> <li>• Maintain community issues and concern register and keep records of complaints</li> <li>• Maintain an up to date register(s) of employees who have completed the site induction</li> <li>• Ensuring that best environmental practice is undertaken throughout the operations of the factory</li> <li>• Report any non-compliance or accidents to the relevant authority</li> </ul>
<b>SHE Representative</b>	<ul style="list-style-type: none"> <li>• Being the principal contact point concerning to environmental and health and safety performance</li> <li>• Notifying relevant regulatory authorities if serious environmental incidents occur as soon as practicable</li> <li>• Being responsible for all management plans and environmental monitoring</li> <li>• Being responsible for receiving and responding to environment-related complaints received from the public or other stakeholders</li> <li>• Bearing authority and independence to demand reasonable steps as required to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant construction activities be ceased immediately should an adverse impact on the environment be likely to occur</li> <li>• Weekly Checklist must be completed by the SHE Representative and findings submitted to the General Manager</li> <li>• Monthly EMP Checklist must be completed monthly by the SHE Representative. Findings are to be submitted to the General Manager</li> <li>• Internal compliance certificate must be completed monthly by the SHE Representative incorporating the checklist' findings. This certificate must be submitted to the General Manager.</li> </ul>
<b>Employees / Contractor employees</b>	<ul style="list-style-type: none"> <li>• Responsible for being compliant with and adhering to this EMP at all times</li> <li>• Ensuring they have undertaken a site induction and are conversant with the requirements of this EMP</li> <li>• Reporting of any operations and conditions that deviate from the EMP or any non-compliant issues or accidents to the proponent.</li> </ul>

## 2.5. CONTRACTORS

Any contractors hired during the operation or maintenance activities at the factory shall be compliant with this EMP, and shall be responsible for the following:



- Undertaking activities in accordance to this EMP as well as relevant policies, procedures, management plans, statutory requirements, and contract requirements
- Implementing appropriate environmental and safety management measures
- Reporting environmental issues, including actual or potential environmental incidents and hazards, to the proponent, and
- Ensuring appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported by employees and subcontractors.

## 2.6. REGISTER OF ENVIRONMENTAL RISKS AND ISSUES

A high-level environmental review of the facility. A schedule of environmental commitments and risks assessment has been conducted in Appendix C.

### 3 COMMUNICATIONS AND TRAINING

To ensure potential risks and impacts are minimised personnel are appropriately informed and trained to ensure risks are mitigated. It is also important that regular communications are maintained with stakeholders (if applicable) and made aware of potential impacts and how to minimise or avoid them. This section sets out the framework for communication and training in relation to the EMP.

#### 3.1. COMMUNICATIONS

The proponent shall communicate environmental issues to all personnel through the following means (as and when required):

- Ensure all personal are allowed to attend an environmental site induction that sets out their requirements in relation to this EMP
- Ensure that the safety health environmental representative is supported and able to fulfil their role and responsibilities in terms of this EMP
- The safety health environmental representative is responsible for:
  - o Ensuring audits and inspections are undertaken regularly on a risk-based schedule
  - o Toolbox talks, including instruction on incident response procedures
  - o Deliver project specific environmental briefings where required
  - o Ensure all personnel have access to the EMP
  - o Ensure operators of key activities and environmentally sensitive operations are briefed and understand their requirements.

#### 3.2. ENVIRONMENTAL EMERGENCY AND RESPONSE

The SHE representative is the primary contact person in the event of an environmental emergency. The SHE representative has the authority and independence to request reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse environmental impact be anticipated.

In the event of an incident that requires the emergency services, the following services should be contacted:

**TABLE 4 - EMERGENCY SERVICES CONTACT TELEPHONE NUMBERS**

TOWN	AMBULANCE	POLICE	FIRE BRIGADE
Okahandja	+264 (67) 31-7004	+264 (67) 1-0111	+264 (67) 1-0111

For large-scale spills and other significant environmental incidents, the fire services should be contacted as required and the MET office informed of the incident (telephone +264 61 284 2111). All correspondence with MET should be undertaken by the General Manager as guided by the SHE Representative.

For the clean-up of smaller spills, the relevant Material Safety Data Sheet (MSDS) should be consulted to determine the appropriate clean-up procedure. Basic spill response training will be provided as part of the site environmental induction, spill response equipment, including relevant MSDS copies, will be provided in areas where potentially environmentally hazardous chemicals may be used.

All environmental incidents, regardless of their size or significance, should be recorded and reported to either the General Manager or SHE representative.

### 3.3. COMPLAINTS HANDLING AND RECORDING

The proponent shall maintain a complaint's register (example attached as Appendix G) that will detail the name and contact details of the complainant, date and time of the complaint, nature of the complaint, the action is taken to resolve issues, and date of complaint handover. The proponent shall be responsible for nominating the correct personnel to coordinate and resolve the issue.

Any complaints received verbally shall be recorded as per above and the information shall be given to the proponent who is overall responsible for the management of complaints and will provide a written response to the complainant.

The workforce shall be informed about the complaints register, its location and the person responsible, to refer residents or the general public who wish to lodge a complaint. The complainant shall be informed in writing of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons why are to be recorded in the register.

The complaints register shall be kept for the factory and will be available for government or public review upon request.

### 3.4. TRAINING AND AWARENESS

All employees of the proponent shall be competent to perform tasks that have the potential to cause an environmental impact. Competence is defined in terms of appropriate education, training, and experience.

All personnel shall be inducted with a specific environment and social awareness training. The environment and social awareness training shall ensure that personnel is familiar with the principles of this EMP, the environment and social aspects and impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures. The proponent shall ensure a register of completed training is maintained. The site induction should include, but not limited to the following:

- A general site-specific induction that outlines:
  - o What is meant by "the environment" and the EMP?
  - o What are the environmental risks of this facility?
  - o Why the environment needs to be protected and conserved
  - o How operational activities can impact on the environment
  - o What can be done to mitigate such impacts?
- The inductee's role and responsibilities with respect to implementing the EMP
- The site environmental rules
- Details of how to deal with, and whom to contact, in the event of environmental problems should they occur
- The potential consequences of non-compliance with this EMP and relevant statutory requirements, and
- The role of responsible people for the project.

## 4 INCIDENT REPORTING

The proponent must have an accident and incident reporting system that covers all applicable statutory requirements. The section below sets out the minimum requirements for incident reporting and should be used as a basis for incident reporting, in the event that no incident reporting system exists.

### 4.1. MINOR INCIDENT OR “NEAR MISS”

Any incident or “near miss” involving the proponent, a nominated representative, any contractor, or its subcontractors or any third party’s personnel, property, plant or equipment, must be

- 1) Orally reported to the General Manager or the General Managers nominated Representative:
  - a. immediately and without delay
  - b. regardless of whether injury to personnel has occurred
  - c. or property or equipment has been damaged.
  
- 2) Written up and handed to the General Manager or the General Managers nominated Representative by the end of the shift. The written report should:
  - a. state all known facts and conditions at the time of the incident and
  - b. include a preliminary assessment of the most likely potential consequences of the incident under the current circumstances.

### 4.2. SERIOUS INCIDENT

For any serious incident involving a fatality, or permanent disability, the incident scene must be left untouched until witnessed by a representative of the Police. This requirement does not preclude immediate first aid being administered and the location being made safe.

### 4.3. INCIDENT REPORT AND CLOSE OUT

The General Manager must investigate the cause of all work accidents and significant incidents and must provide the results of the investigation and recommendations on how to prevent a recurrence of such incidents. A formal root-cause investigation process should be followed.

## 5 COMPLIANCE AND ENFORCEMENT

### 5.1. ENVIRONMENTAL INSPECTIONS & COMPLIANCE MONITORING

Annual inspections and audits of the factory will be managed and undertaken by the proponent. All infrastructure will be inspected to ensure the equipment's are operating as per specification; no damage has been caused, and no leaks or spills have occurred. Any non-conformance shall be recorded, including the following details: a brief description of non-conformance; the reason for the non-conformance; the responsible party; the result (consequence); and the corrective action is taken and any necessary follow up measures required.

The factory exports charcoal to international companies. Therefore, adheres to the standards and requirements of such companies, the facility will be subject to numerous international as well as local audits. These audits include the following:

- **Forest Stewardship Council (FSC) Audit** - The FSC audit is an internationally accredited audit platform. The company is audited by the soil association on a yearly basis to maintain a valid certificate. Without this audit, the products cannot be sold to their clients in Europe, and
- **Business Social Compliance Initiative (BSCI) Audit** - The BSCI audit focuses on labour relations. It considers social security, PPE, acceptable levels of dust emissions, minimum wage, sanitation, etc.

### 5.2. REPORTING

There shall be a requirement to ensure that any incident or non-compliance, including any environmental issues, any faulty or malfunction of equipment that performs an environmental function or accident, is reported to the proponent.

### 5.3. NON-COMPLIANCE

Where it has been identified that work is not compliant with this EMP, the proponent shall ensure corrective actions are implemented so that the work returns to being compliant as soon as possible. In instances where the requirements of the EMP are not upheld, a non-conformance and corrective action notice shall be produced (refer to Appendix H). The notice shall be generated by the safety health environmental coordinator during the inspections and the proponent shall be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming.

A non-compliance event/situation, for example, is considered if:

- There is evidence of a contravention of this EMP and associated indicators or objectives
- The proponent has failed to comply with corrective or other instructions issued by an authority, or
- The proponent fails to respond to complaints from the public.

### 5.4. DISCIPLINARY ACTION

This EMP is a legally binding document and non-compliance with it shall result in disciplinary action being taken against the perpetrator/s. Such action may take the form of (but is not limited to):

- Fines / penalties
- Legal action
- Monetary penalties imposed by the proponent on the contractor



- Withdrawal of licence/s, and
- Suspension of work.

The disciplinary action shall be determined according to the nature and extent of the transgression / non-compliance, and penalties are to be weighed against the severity of the incident.

## 6 ENVIRONMENTAL MANAGEMENT MEASURES

### 6.1. WATER PERMITS AND LICENCE

The Water Act (1956) governs the use of water resources in Namibia and is the enforceable piece of legislation for water-related matters. The Water Resources Management Act (2013), passed but pending regulations (not enforced) provides an improved framework for managing water resources based on the principles of integrated water resource management, while not enforced it is considered the best practice to adhere to the stipulations while ensuring compliance to the Water Act of 1956 is also maintained

The proponent doesn't hold any abstraction permits, a licence to abstract water is required in terms of the Water Act. Should the facility be connected to the municipal water system, the municipality is responsible for the reticulation and treatment of sewerage water discharged into the municipal sewerage system. The facility is required to ensure that non-hazardous wastewater is correctly connected to the appropriate wastewater system and that no hazardous waste is disposed of in the wastewater system.

### 6.2. WASTEWATER DISCHARGE PERMIT

The facility discharges non-hazardous waste however does not have any discharge permits in place. The proponent will ensure that all documentation, permits and measures are in place before discharge occurs, including obtaining the relevant effluent discharge permit in terms of the Water Act to be applied for at the Ministry of Agriculture Water and Forestry.

In order to obtain an effluent wastewater permit, the proponent should have the following information and complete the application form contained in Appendix D:

- Specification of the treatment system (type of technology)
- Description of major activities resulting in effluent generation
- List of contaminants (analysis of effluent samples)
- Effluent quality
- Points of discharge
- Show the present average quantities of incoming water, recycled water, final outflow, and
- Where final effluent discharged.

A number of potential environmental impacts may occur during the operations of the factory. Potential impacts are managed through individual management plans that have been developed to minimise these impacts and provide a management framework for the Proponent. A summary of each management plan is provided below:

- **Surface and Ground Water Quality Management Plan** - Surface water and groundwater management measures including controls and measures to avoid contamination of water sources.
- **Waste Management Plan** - Procedures for the appropriate management of waste materials.
- **Spill Management Plan** - Preventative measures to minimise the potential for a spill and management measures should a spill occur.
- **Air Quality Management Plan** - Air quality management measures to minimise the production of airborne dust and other gaseous emissions.
- **Noise Management Plan** - Noise management measures to minimise noise to personnel and neighbours.

## 7 SURFACE AND GROUNDWATER MANAGEMENT PLAN

### 7.1. INTRODUCTION

Chemical and waste spills must be contained so not to contaminate the soil or groundwater. Any contact with groundwater must be treated with exceptional care and reported immediately, so as to minimize the potential for contamination of an aquifer. It is important to limit the potential for wastewater seepage to groundwater.

This Surface and Groundwater Management Plan outlines appropriate surface and groundwater water management measures, monitoring programs and reporting procedures to be implemented.

### 7.2. OBJECTIVES

This Surface and Groundwater Management Plan has been prepared to minimise potential impacts on surface and groundwater resulting from the operations of the factory. It is important to report any contact with or contamination of groundwater to the SHE representative as soon as possible.

### 7.3. RESPONSIBILITIES

#### **WORKFORCE AND ALL CONTRACTORS**

- Required to take all reasonable measures to prevent the discharge of sediments and pollutants from the site into surface and groundwater sources. Report any contact with groundwater to the SHE representative.

#### **SHE REPRESENTATIVE**

- Ensure that the objectives listed above are being met and to provide performance feedback to the General Manager.

### 7.4. SURFACE AND GROUNDWATER MANAGEMENT MEASURES

The Surface and Groundwater Management measures are designed to minimise the runoff of sediment-laden or polluted water into the surrounding environment. Operational activities that could potentially alter natural surface water and groundwater quality include:

- Chemical spills
- Refuelling, and
- Seepage of wastewater into groundwater

The following requirements are to be met to ensure that groundwater is not contaminated:

- All potentially contaminated runoff is to be directed to an adequately sized siltation basin before assessing the quality and gaining authority for discharged to the environment.
- Oil and chemicals must be safely stored and removed.
- Any contact with groundwater must be treated with exceptional care and reported immediately, so as to minimize the potential for contamination of an aquifer.
- If any groundwater is intersected operations must be temporarily stopped, the hole (with the water) must be photographed and further instruction sought from the General Manager and the SHE representative.

**TABLE 5 - WATER QUALITY MITIGATION MEASURES**

ASPECT	MITIGATION MEASURE	RESPONSIBILITY
<b>Pollution control measures</b>	Visual monitoring and photographic record of any surface and/or groundwater intersected	SHE Representative
	Visual monitoring during rainfall events for runoff of polluted water	SHE Representative
	Vehicles and machinery are to be regularly serviced to minimise oil and fuel leaks	Manager
	Chemicals, oil and fuel must be stored securely to prevent any accidental spills	Manager
	Regular clean-up of dust extractor	SHE representative
<b>Sewage and Grey water</b>	Ensure wastewater systems are connected into the appropriate municipal wastewater system	SHE representative

### 7.5. SURFACE AND GROUNDWATER QUALITY MONITORING PROGRAMME

Every effort must be made throughout is to preserve the quality of surface water sources that the facility may impact. Containment of waste and chemicals and the correct disposal thereof must be of an acceptable standard. Personnel must report any unusual conditions and intersection with groundwater immediately to the SHE representative. A photographic record should be kept for future comparison (e.g. during maintenance and/or repair work).

## 8 WASTE MANAGEMENT PLAN

### 8.1. INTRODUCTION

The activities at the factory will generate both solid and liquid waste. Operational waste will include waste such as pallets, plastic, cardboard, hydrocarbon waste from servicing of vehicles and machinery, etc, that must be handled by registered waste disposal units.

### 8.2. OBJECTIVES

This Waste Management Plan has been prepared to ensure the proper storage, transport, treatment and disposal of waste and where possible will follow the waste hierarchy, which encourages waste avoidance and waste reduction followed by reuse, recycling, and reclamation, before waste treatment and waste disposal.

### 8.3. ROLES AND RESPONSIBILITIES

#### **WORKFORCE AND ALL CONTRACTORS**

- Required to ensure that all waste generated during operational activities is removed and disposed of accordingly including providing evidence in the form of waste transfer receipts for the waste moved off-site.
- Ensure no windblown rubbish pollutes the environment.
- Remove waste on a regular basis to prevent vermin.

#### **SAFETY, HEALTH AND ENVIRONMENTAL REPRESENTATIVE**

- Required to inspect receipts and evidence of correct waste handling.
- Review waste management practices regularly during operations.

### 8.4. SOLID WASTE

The factory currently burns all wastes produced, thereby reducing its impacts associated with solid waste generation. Where possible the proponent will implement measures to reduce, reuse and recycle waste generated as part of the operations of the factory.

Waste will be controlled through prevention and mitigation measures as follows:

- Reduce, reuse and recycle where possible.
- Storage of domestic waste on site may result in the attraction of unwanted scavengers and should be removed as soon as it is feasible.
- Solid waste shall be stored in an appointed area in covered, tip-proof metal drums/skips for collection and disposal.
- Hydrocarbon and chemical contaminated solids have the potential to cause contamination to the soil, ground and/or surface water, thus correct storage and disposal methods are required.



**TABLE 5 - WASTE MITIGATION MEASURES**

Aspect	Mitigation Measure	Responsibility
<b>Environmental Contamination from liquid waste</b>	Hydrocarbon and chemical contaminated solids must be stored correctly and disposed of by registered companies.	SHE Representative
	Safe disposal certificates must be kept and provided to the Project manager on request.	SHE Representative
<b>Littering and Environmental Contamination from waste</b>	No littering by workers shall be allowed	Proponent
	All litter on and around the facility should be picked up and placed in the bins provided.	All staff
	The site should be kept tidy and free of litter at all times. All domestic and general waste produced on a daily basis should be cleaned and contained daily.	All staff
	No solid waste landfill will be established at the site.	Proponent
	No waste shall be burned or buried anywhere unless when advised to do so by the local Municipality.	Proponent
	Recycling bins will be provided in appropriate areas to enable waste and refuse to be sorted for recycling and re-use. Bins must be baboon proof.	Proponent
	All solid waste must be collected, recycled where possible, and otherwise disposed of by appropriately licensed disposal teams.	Proponent
	All rubble is to be removed from the site to an approved disposal site. Burying of rubble on-site is prohibited.	Proponent

### 8.5. WASTE DISPOSAL MONITORING

Certificates providing the safe disposal of waste from a permitted waste disposal site must be provided to the General Manager upon request.

## 9 SPILL MANAGEMENT PLAN

### 9.1. INTRODUCTION

The uncontrolled release of fuels and other chemicals has the potential to result in the contamination of soil, groundwater and surface water, which may lead to serious environmental harm. On this basis, the storage and use of fuels or other chemicals must be managed to minimise the risk of a release, and measures must be in place to promptly address impacts should a release occur.

### 9.2. OBJECTIVES

This Spill Management Plan has been prepared to minimise the potential for the uncontrolled release of fuels, oils and other chemicals. Preventative measures to minimise the potential for a spill are listed. Should a spill occur, this plan guides the contractor on the appropriate spill response measures.

### 9.3. ROLES AND RESPONSIBILITIES

#### **WORKFORCE AND ALL CONTRACTORS**

- Required to implement the spill prevention and response measures listed below.

#### **SAFETY, HEALTH AND ENVIRONMENTAL REPRESENTATIVE**

- Required to ensure that appropriately implemented spill prevention measures listed below and that any spills have been appropriately managed and reported.

### 9.4. SPILL PREVENTION MEASURES

The following management measures are to be implemented by the Proponent:

- Spill kits are to be made available throughout the site. The kits are to include, at a minimum, the following items:
  - Absorbent materials
  - Sawdust
  - Shovels
  - Heavy-duty plastic bags
  - Protective clothing (e.g. gloves and overalls), and
  - Major servicing of equipment shall be undertaken offsite or inappropriately equipped workshops.
- Provision of adequate and frequent training on spill management, spill response and refuelling must be provided to all onsite staff.
- Fuels, lubricants and chemicals are to be stored within appropriately sized, impermeable bunds or trays with a capacity not less than 110% of the total volume of products stored.

- All fuel and chemical storage and handling equipment (including transfer hoses, etc.) shall be well maintained.
- Storage and handling of fuels and chemicals shall be in compliance with relevant legislation and regulations.
- No refuelling is to take place within 50 metres of groundwater boreholes, surface water or streams.
- Material Safety Data Sheets are to be kept for each chemical used on site. These must be easily accessible to all construction personnel.

### 9.5. SPILL RESPONSE MEASURES

The primary concern, in the event of any spill, is the health and safety of any residents and contractors in the vicinity. Of secondary, but highly significant, importance, is the protection of water sources and then soil and vegetation.

**The following points, therefore, apply to all areas on the site:**

- Assess the situation for potential hazards.
- Do not come into contact with the spilled substance until it has been characterised and necessary personal protective equipment (PPE) is provided.
- Isolate the area as required.
- Notify the General Manager and SHE representative.

**The following measures are to be implemented in response to a spill:**

- Spills are to be stopped at the source as soon as possible (e.g. close valve or upright drum).
- Spilt material is to be contained to the smallest area possible using a combination of absorbent material, earthen bunds or other containment methods.
- Spilt material is to be recovered as soon as possible using appropriate equipment.
- All contaminated materials recovered subsequent to a spill, including soils, absorbent pads and sawdust, are to be disposed to appropriately licensed facilities.
- The General Manager and SHE representative are to be informed as soon as possible in the event of a spill.
- A written Incident Report must be submitted to the General Manager.

**TABLE 6 - SPILL MITIGATION MEASURES**

Aspect	Mitigation Measure	Responsibility
Stored Hazardous Chemicals	Hazardous chemicals are to be stored in bunded areas.	Technical Manager
	Hazardous chemicals (such as fuels) are to be handled over areas provided with impervious surfaces.	Technical Manager
	Spills of hazardous chemicals are to be contained and cleaned up to ensure protection of the environment	All
	All the necessary PPE required for the safe handling and use of petrochemicals and oils shall be provided to, and used or worn by, the onsite staff	All

<b>Machinery and Equipment Maintenance</b>	Major servicing of equipment shall be undertaken offsite or inappropriately equipped workshops.	Technical Manager
	For small repairs and required maintenance activities all reasonable precautions to avoid oil and fuel spills must be taken (e.g. spill trays, impervious sheets).	Technical Manager
	Vehicles and machinery are to be regularly serviced to minimise oil and fuel leaks	Technical Manager
	All the necessary PPE required for maintenance activities must be issued to staff whose duty it is to manage and maintain the machinery and equipment.	General Manager

## 9.6. SPILL REPORTING

All major petroleum product spills should be reported to the Ministry of Mines and Energy (MME) on Form PP/11 titled; Reporting of major petroleum product spill attached as Appendix E.

## 10 AIR QUALITY MANAGEMENT PLAN

### 10.1. INTRODUCTION

The majority of dust will be generated during sieving, binning and packaging, and minor gaseous emissions from vehicle exhausts, as well as other activities associated with the factory, have the potential to affect amenity, safety, human health and the environment.

This Air Quality Management Plan describes the strategies and procedures that will be implemented to ensure that the health and amenity of the workers and nearby sensitive receptors are protected from elevated concentrations of airborne dust and other gaseous emissions. In cases where generators and other machinery are used, there will be some release of exhaust fumes that will impact the immediate vicinity but will be of short duration.

### 10.2. OBJECTIVES

The main objective of the Air Quality Management Plan is to ensure that emissions from operational activities are controlled to an acceptable level and do not significantly impact adjoining properties such as the neighbouring communities, farms or other sensitive receptors.

- The machine is to extract as much dust as possible
- Machinery should not emit excessive dust particles

### 10.3. RESPONSIBILITIES

#### **WORKFORCE AND ALL CONTRACTORS**

- To implement the necessary management practices in order to meet the objectives listed above.

#### **SHE representative**

- To ensure that the objectives listed above are being met and to provide performance feedback to the General Manager.

### 10.4. AIR QUALITY MANAGEMENT PROCEDURES

Activities that may potentially emit dust during the operations include the following:

- Machinery operations
- Vehicle movements

The proponent will minimise the potential for dust generation by undertaking the following management measures, as required:

- The dust extractor will be connected to duct piping around the facility, to extract and convey the dust. These duct pipes will be located above the three screening machines (sieving stations), the holding bins and above the bagging stations.
- Furthermore, dust monitoring stations will be installed to monitor the amount of dust fallout around the facility.
- Appropriate speed limits will be set and enforced.
- The ground disturbance will be minimised as far as practical.

- Vehicles and machinery will be maintained so as to limit exhaust fume emissions.

**TABLE 7 - AIR QUALITY MITIGATION MEASURES**

Aspect	Mitigation Measure	Responsibility
Dust and fumes	Vehicles must adhere to speed limits so as to avoid producing excessive dust.	SHE representative
	Vehicles and machinery are to be regularly serviced according to the manufacturers’ specifications and kept in good working order so as to minimise exhaust emissions.	SHE representative
	The dust extractor will be connected to duct piping around the facility, to extract and convey the dust.	SHE representative

### 10.5. AIR QUALITY MONITORING PROGRAMME

Depositional dust monitoring of operational activities can ensure the minimum discharge of airborne dust and other emissions according to the Air Quality Management Plan.

### 10.6. NOISE IMPACTS

There are generally no sensitive receptors within proximity to the site. Activities at the factory have the potential to generate nuisance noise that can impact the quality of life for neighbouring residents, however, this potential impact has been mitigated by the positioning of the factory and its location within an industrial area.

Notwithstanding the above point, the proponent should continue to ensure potential noise sources are mitigated through measures such as:

- Avoid noise-generating activities at night
- Avoid noise-generating activities that could impact other users of the industrial area by ensuring noisy activities occur indoors, avoid hammering on metal that generates intermittent annoying noise especially at night, ensure appropriate measures are put in place to rectify noise compliantly should they occur.
- Scheduling of works to avoid disturbance between the hours of 7:30 am and 5 pm.
- Saturday operational period from 8 am – 12 noon, when near residential areas.
- Procedures for receiving complaints from nearby land users or residents to be in place and mitigation measures to be implemented should construction generate excessive noise, which is unexpected.

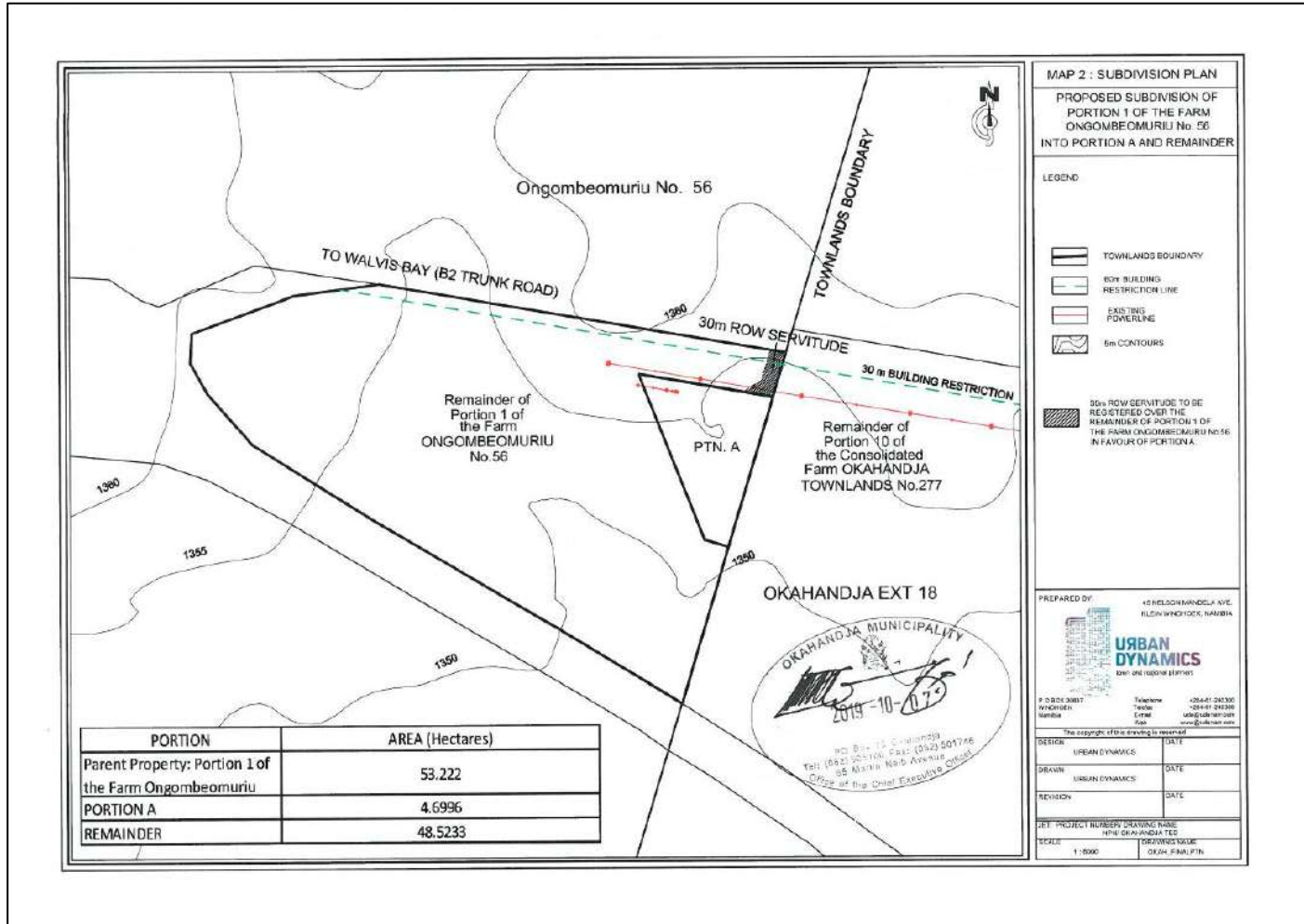
## 11 DOCUMENT LIMITATIONS

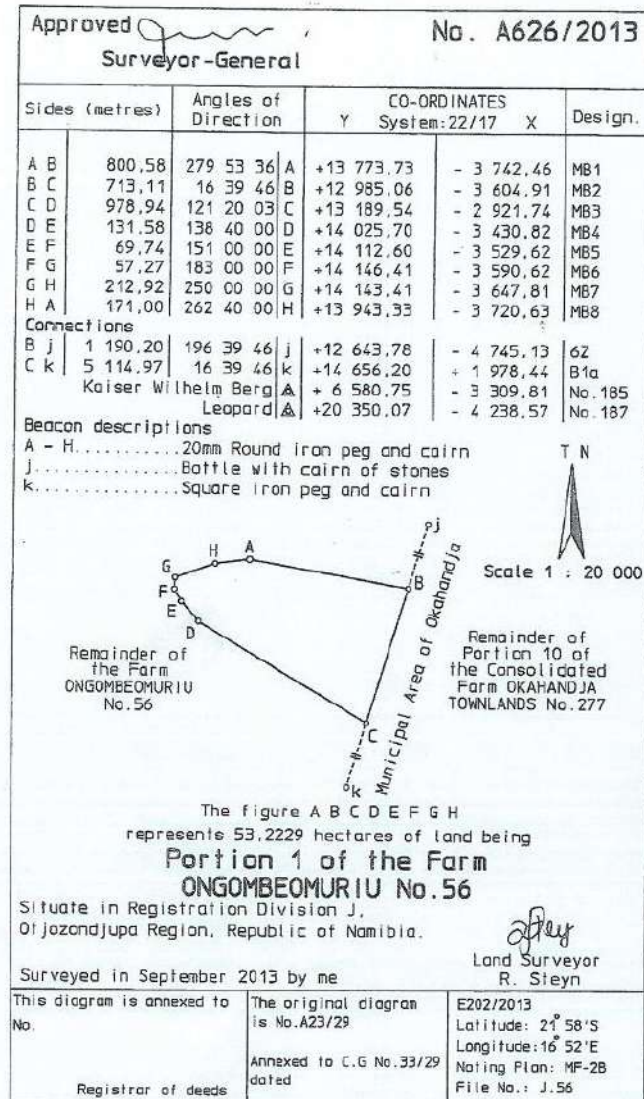
This Environmental Management Plan (EMP):

- Has been prepared pursuant to a contract with Jumbo Charcoal;
- Has been prepared based on the information provided to ECC up to November 2019;
- Is for the sole use of Jumbo Charcoal, for the sole purpose of an EMP;
- Must not be used (1) by any person other than Jumbo Charcoal, or (2) for a purpose other than an EMP; and
- Must not be copied without the prior written permission of ECC.

## APPENDIX A – FARM ONGOMBEOMURIU NO. 56 SUBDIVISION







## APPENDIX B – LEGAL REGISTER

TABLE 8 – LEGAL REQUIREMENTS FOR JUMBO CHARCOAL FACTORY

<b>LEGAL REGISTER REFERENCE DOCUMENT</b>			
<b>NAME</b>	<b>ENVIRONMENTAL</b>	<b>SAFETY &amp; HEALTH</b>	<b>DESCRIPTION</b>
<b>Legislation</b>			
The Constitution of the Republic of Namibia of 1990	X	X	The fundamental principles of environmental protection and sustainable development, as well as the wellbeing of Namibians, are underpinned by the constitution
Social Security Act, No. 34 1994		X	<p>The Social Security Act was promulgated to provide for –</p> <ul style="list-style-type: none"> <li>- the establishment, constitution, powers, duties and functions of the Social Security Commission</li> <li>- the payment of maternity leave benefits, sick leave benefits and death benefits to employees and to establish for that purpose the maternity leave, sick leave and death benefits funds</li> <li>- the payment of medical benefits to employees and to establish for that purpose the national medical benefits fund</li> <li>- the payment of pension benefits to retired employees and to establish for that purpose the national pension fund</li> <li>- the funding of training schemes for disadvantaged, unemployed persons and to establish for that purpose the development fund, and incidental matters.</li> </ul>

**LEGAL REGISTER REFERENCE DOCUMENT**

NAME	ENVIRONMENTAL	SAFETY & HEALTH	DESCRIPTION
<b>Legislation</b>			
Employee's Compensation Amendment Act, 1995 (No. 5 of 1995)			The Employee's Compensation Amendment Act calls for the establishment of an Accident Fund and an Accident Pension Fund and provides the framework for insuring employees against loss of earnings resulting from employment injuries and diseases contracted in the course of employment. Basic contingencies covered include temporary and permanent disablement, sickness and death resulting from employment-related incidents.
The Labour Act, No. 11 of 2007 (Regulations relating to the Health & Safety of Employees at Work promulgated in terms of Section 101 of the Labour Act, No. 6 of 1992 - GN156, GG 1617 of 1 August 1997)	X	X	Stringent health and safety policies, including the compulsory use of specific PPE in designated areas to ensure adequate protection against health and safety risks, have to be in place. Proper storage and labelling of hazardous substances are required. Implementing a comprehensive waste management and disposal policy is necessary - this should include the management and disposal of hazardous substances (excluding nuclear or radioactive waste) and accompanying certificates of disposal. Hazardous substances that do constitute nuclear or radioactive waste need to be disposed of at a designated area in terms of a license issued by the NPRA under the Atomic Radiation Protection Act. Employees in charge of and working with hazardous substances need to be aware of the specific hazardous substances in order not to compromise worker and environmental safety in the event of accidental breakage or spillage. Transport of various hazardous substances requires staff responsible for such transport to be properly trained in the handling of the substance and that adequate safety and emergency response plans are in place in case of accidental spillage.

**LEGAL REGISTER REFERENCE DOCUMENT**

NAME	ENVIRONMENTAL	SAFETY & HEALTH	DESCRIPTION
<b>Legislation</b>			
<b>HEALTH</b>			
The Health Act, No. 21 of 1988		<b>X</b>	Health facilities (such as a clinic at a mine) fall within the definition of a private health facility, which means that the mine is obliged to ensure that the clinic has the requisite licence to operate as a private health facility.
Health and Safety Regulations, 1997			The Regulations determine that an employer should investigate and identify the hazards attached to any work performed by any of his or her employees, including the risks or potential risks to the health and safety of employees associated with such work, or to the health and safety of any other person who may be affected by such work. The employer is also obliged to assess the hazards and risks identified, and to eliminate such hazards by employing appropriate measures, including the removal of the hazards, or the changing of the organisation or schedules of the work performed. Otherwise, an employer is required to rely on the use of personal protective equipment by employees. An employer is also compelled by these Regulations to provide every employee in his or her employ with training in the tasks that he or she is to perform.

**LEGAL REGISTER REFERENCE DOCUMENT**

NAME	ENVIRONMENTAL	SAFETY & HEALTH	DESCRIPTION
<b>Legislation</b>			
Public and Environmental Health Act, Act No. 1 of 2015, Government Notice No. 86		X	Provides a framework for a structured more uniform public and environmental health system, and for incidental matters. It deals with Integrated Waste Management including waste collection disposal and recycling; waste generation and storage; and sanitation.
Draft Mine Health and Safety Regulations (10th draft)		X	Related to health regulations
<b>ENVIRONMENT</b>			
Environmental Management Act, No. 7 of 2007 (and its Regulations promulgated in 2012)	X		All activities listed in the Regulations of the act require impact assessments and accompanying environmental management plans, for which environmental clearance certification by the authorities need to be issued.
Land Tenure Act 32 Of 1966	X	X	To provide for the acquisition and development of land for or for use in connection with farming purposes; and to provide for other incidental matters

**LEGAL REGISTER REFERENCE DOCUMENT**

NAME	ENVIRONMENTAL	SAFETY & HEALTH	DESCRIPTION
<b>Legislation</b>			
The Forestry Act, No. 12 of 2001 as amended by the Forest Amendment Act, No. 13 of 2005	X		Section 22 requires a permit for the cutting, destruction or removal of vegetation in the course of mining operations. The necessary permit should be obtained from the Ministry of Environment and Tourism.
Namibian Water Corporation Act, No. 12 of 1997	X		Bulk water supply to bulk consumers of water in Namibia is primarily supplied by Namwater.
Water Resources Management Act, No. 11 of 2013	X		This act has been billed but not promulgated but cannot be enacted as the regulations have not been passed so the Water Act 54 of 1956 is still in effect.
Environmental Assessment Policy for Sustainable Development and Environmental Conservation, 1995			The Environmental Assessment Policy also provides the guidelines for environmental assessment procedures.
Nature Conservation Amendment Act, No. 3 of 2017	X		Implied by many other pieces of legislation related to environmental protection
Atmospheric Pollution Prevention Ordinance, No. 11 of 1976	X		Section 28 of the Ordinance is of particular relevance as dust emissions are inevitably part of mining operations in Namibia. Accordingly, a comprehensive dust suppression and monitoring programme is required (e.g. water sprinklers at a crushing plant, special compound on dirt roads and other surfaces to minimise dust from vehicles and heavy mining equipment). An Air Quality Management Programme is required - to measure dust fall-out and to monitor ambient PM10 emissions.



**LEGAL REGISTER REFERENCE DOCUMENT**

NAME	ENVIRONMENTAL	SAFETY & HEALTH	DESCRIPTION
<b>Legislation</b>			
Water Supply and Sanitation Policy	X		Related to wastewater management
Policy for the Conservation of Biotic Diversity and Habitat Protection	X		Related to environmental protection
The National Climate Change Policy of Namibia	X		Related to environmental protection
Draft Pollution Control and Waste Management Bill	X	X	Related to environmental protection
Namibia vision 2030	X	X	A comprehensive framework to fundamentally transform the Namibian political and economic landscape in areas such as land reform, housing, the environment, health, education and building an economy that provides equal opportunities for all.
World Bank Standards - International Finance Corporation (IFC) & Equator principles (2013)	X		Implied by many other pieces of legislation related to environmental protection
ISO 140001	X		Principal management system standard which specifies the requirements for the formulation and maintenance of an EMS. This helps to control your environmental aspects, reduce impacts and ensure legal compliance.

**LEGAL REGISTER REFERENCE DOCUMENT**

NAME	ENVIRONMENTAL	SAFETY & HEALTH	DESCRIPTION
<b>Legislation</b>			
Forest Stewardship Council (FSC)		X	Ensures that products come from responsibly managed forests that provide environmental, social and economic benefits.
Nature Conservation ordinance 4 of 1975 and Amendments	X		Section 73 of the Ordinance provides that no person is permitted to pick a protected plant without a permit issued by the Minister of Environment and Tourism.

## APPENDIX C - RISK ASSESSMENT

TABLE 9 – RISK ASSESSMENT FOR JUMBO CHARCOAL FACTORY AND BRIQUETTE PLANT OPERATIONAL ACTIVITIES

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
General areas	Occupational Health and Safety	Trucks potentially running over people / truck interactions with people	High (16)	NA	<ul style="list-style-type: none"> <li>&gt; Conduct an operational risk assessments as part of the planning process</li> <li>&gt; Minimising the instances where workers and operating trucks are in the same area at the same time</li> <li>&gt; Ensure inductions are carried out to make everyone aware of dangers on the premises</li> <li>&gt; Workers should use footpaths in busy areas</li> <li>&gt; No workers should walk behind trucks or over suspended loads</li> <li>&gt; Speed limits on trucks should be maintained at a maximum 20-30km/hr in the premises.</li> </ul>	Low (4)	NA		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Occupational Health and Safety	Trucks or cars bumping each other/ vehicle interaction with other vehicles can cause fatalities and injuries	Critical (20)	NA	<ul style="list-style-type: none"> <li>&gt; Conduct an assessment to ensure the vehicles are matched to the operational requirements</li> <li>&gt; Ensure specific requirements for seating, seat belts, headlights, mobile phones, and load restraints are adhered to</li> <li>&gt; Speed limits on trucks should be maintained at a maximum 20-30km/hr in the premises.</li> </ul>	Moderate (6)	NA		
	Occupational Health and Safety	Equipment damage from trucks or machinery running into other equipment such as weighbridge poles, office building, factory, gate etc.	High (15)	NA	<ul style="list-style-type: none"> <li>&gt; Factory is designed to allow enough space for movement of trucks</li> <li>&gt; Speed limits on trucks should be maintained at 20 - 30km/hr</li> <li>&gt; Truck drivers are required to sign in at the security gate and given verbal instruction on where to go</li> </ul>	Low (3)	NA		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Environment	Inadequate control or accidental releases of hazardous substances on-site or in transit	NA	<b>Critical (15)</b>	<ul style="list-style-type: none"> <li>&gt; Label chemicals appropriately</li> <li>&gt; Chemicals with different hazard symbols should not be stored together ,clear guidance on the compatibility of different chemicals can be obtained from the Materials Safety Data Sheets (MSDS) which should be readily available from the manufacturer and on-site</li> <li>&gt; Store chemicals in a dedicated, enclosed and secure facility with a roof and a paved/concrete floor</li> <li>&gt; Chemical tanks should be completely contained within secondary containment such as bunding.</li> <li>&gt; Consider the feasibility of substitution of hazardous chemicals with less hazardous alternatives.</li> <li>&gt; Provide safety showers at locations where hazardous chemicals are stored or used.</li> </ul>	NA	<b>Low (3)</b>		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
Offloading and loading charcoal from delivery trucks	Occupational Health and Safety	Lifting or carrying of heavy bags can cause head, back and neck injuries	High (15)	NA	<ul style="list-style-type: none"> <li>&gt; Minimize manual handling by using powered or mechanical handling equipment such as conveyor belts, lift trucks or electric hoists</li> <li>&gt; If manual handling cannot be avoided, heavy or frequent manual handling tasks should be carried out by several people or, if possible, the amount that is handled should be reduced or the load split into smaller ones</li> <li>&gt; Workers are only allowed to carry 20-25kg of bags</li> <li>&gt; If worker is not able to lift heavy items, they are liable to ask for help and ensure they do not attempt to lift anything heavy .</li> <li>&gt; All workers are given training that states if a load is too heavy to lift do not attempt to lift if alone.</li> </ul>	Low (2)	NA		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?)	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Occupational Health and Safety	Risk of pallets and bags falling from the forklift can result in injuries, if it comes into contact with the workers	High (12)	NA	<ul style="list-style-type: none"> <li>&gt; No workers shall walk under suspended loads</li> <li>&gt; Ensure spotters are used if needed</li> <li>&gt; Ensure only certified drivers operate the equipment</li> <li>&gt; Reversing sirens are installed</li> <li>&gt; Check that all alarms and horns are in working order before operations</li> <li>&gt; Bags are securely packed before movement</li> <li>&gt; Bags packed to maximum 1.5 meters to prevent them from tipping over</li> <li>&gt; Ensure each forklift is fit for intended purpose for which it was designed and is safe to use</li> <li>&gt; Ensure forklift is maintained according to the manufacturer specifications</li> </ul>	Low (2)	NA		



			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Occupational Health and Safety	Risk of forklift bumping into building infrastructure	High (9)	NA	<ul style="list-style-type: none"> <li>&gt; Ensure each forklift is fit for intended purpose for which it was designed and is safe to use</li> <li>&gt; Ensure forklift is maintained according to the manufacturer specifications</li> <li>&gt; Forklift operators should maintain speed, slow down and halt to prevent collisions and accidents</li> <li>&gt; Check that all functions such as brakes are in good working order before operations</li> <li>&gt; Induction or training of the operators of equipment in the factory should be in place.</li> </ul>	Low (1)	NA		
	Occupational Health and Safety	Risk of operator getting crushed if a forklift tipped over	Critical (15)	NA	<ul style="list-style-type: none"> <li>&gt; Conduct an operational risk assessment as part of the planning process</li> <li>&gt; Bags are securely fitted or wrapped before moving</li> </ul>	Low (1)	NA		
	Occupational Health and Safety	Risk of operator or worker getting hit or crushed by the load	Critical (15)	NA	<ul style="list-style-type: none"> <li>&gt; Forklift induction for workers not in the same area as forklift, where to walk, intersect, corners and blind spots</li> <li>&gt; Forklift operators should maintain speed, slow down and halt to prevent collisions and accidents</li> </ul>	Low (2)	NA		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?)	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Occupational Health and Safety	Sieving charcoal produces fine particles that can cause eye irritation	High (9)	NA	<ul style="list-style-type: none"> <li>&gt; Conduct an operational risk assessment as part of the planning process</li> <li>&gt; Ensure workers are not standing down wind of sieving so they are not standing in the area of impact</li> <li>&gt; Protective equipment such as googols/glasses should be used when necessary</li> </ul>	Low (1)	NA		
	Environment	Charcoal smoke / dust causing air pollution affecting both fauna and flora species	NA	High (16)	<ul style="list-style-type: none"> <li>&gt; Dust extractor installed</li> <li>&gt; Facility should be enclosed to minimize air escaping out of the facility</li> <li>&gt; Use surfaces that minimize dust accumulation and facilitate cleaning</li> <li>&gt; Monitor air quality to detect areas of concern</li> <li>&gt; Implement dust monitoring stations around the factory</li> <li>&gt; Where effect is profound, ensure dust suppression measure are in place.</li> </ul>	NA	Low (4)		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?)	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
Sieving of charcoal into grade	Occupational Health and Safety	Charcoal dust and smoke can result in potential health implications, example asthma and lung cancer, especially with the level and frequency of exposure	Critical (20)	High (9)	<ul style="list-style-type: none"> <li>&gt; Extractor fans installed around factory</li> <li>&gt; Workers should not stand downstream of dusty activities if it can be avoided</li> <li>&gt; Factory should be designed to allow ventilation in the work area</li> <li>&gt; Workers work in shifts to limit exposure periods</li> <li>&gt; A yearly chest X-ray is compulsory for all workers</li> <li>&gt; Protective equipment such as dust mask should be used at all times.</li> </ul>	Moderate (6)	Low (3)		
	Occupational Health and Safety	Noise from separation machine and prolonged exposure can result in nuisance for workers and neighbours	High (16)	Moderate (6)	<ul style="list-style-type: none"> <li>&gt; Noise level is within occupational exposure limit of 85 dB</li> <li>&gt; Machines are maintained on a regular basis</li> <li>&gt; Hearing protection provided upon request.</li> </ul>	Low (1)	Low (1)		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Occupational Health and Safety	Conveyor and moving parts of machine may cause injuries	Critical (20)	NA	<ul style="list-style-type: none"> <li>&gt; Machine with moving parts should have guards installed to prevent access to moving parts</li> <li>&gt; No loose clothing should be worn near moving parts and conveyors</li> <li>&gt; No long hair should be left untied around moving parts, hair should be tied up and back, if possible completely covered</li> <li>&gt; Personal protective equipment such as gloves are worn at all times .</li> </ul>	Low (2)	NA		
	Occupational Health and Safety	Charcoal particles/pieces around the factory can potentially cause trips and falls	High (12)	NA	<ul style="list-style-type: none"> <li>&gt; General housekeeping around work area at all times, before and after shifts starts and during working hours when a potential risk is identified.</li> </ul>	Low (1)	NA		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?)	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
Waxing	Environment	Wax from furnace can potentially leak into the environment	High (9)	High (9)	<ul style="list-style-type: none"> <li>&gt; Store chemicals in a dedicated, enclosed and secure facility with a roof and a paved/concrete floor.</li> <li>&gt; Chemical tanks should be completely contained within secondary containment such as bunding</li> <li>&gt; Consider the feasibility of substitution of hazardous chemicals with less hazardous alternatives</li> <li>&gt; Spill kits and drip trays are available</li> <li>&gt; Major spills reported to the manager</li> <li>&gt; Oil spills are cleaned up in a timely manner</li> </ul>	Low (2)	Low (2)		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Occupational Health and Safety	Oil and heat can ignite and potentially cause fire outbreaks resulting in injuries and possible fatalities	Critical (15)	Critical (15)	<ul style="list-style-type: none"> <li>&gt;No hot works to be conducted without a permit</li> <li>&gt; No hot works in areas that have a high fire risk - hot work should only be conducted in the workshop</li> <li>&gt; If hot work must be completed in the factory where fire is a risk, they should gain permission from the manager/owner of the factory and a risk assessment for the task has to be completed prior to doing the work</li> <li>&gt; No smoking in the factory</li> <li>&gt; No open flames</li> <li>&gt; Ensure fire response plan is in place</li> <li>&gt; Fire alarm detector on and tested</li> <li>&gt; Fire management in place e.g. fire extinguisher located at each department</li> </ul>	Low (2)	NA		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
Packaging	Occupational Health and Safety	Bags/ charcoal grades can potentially fall onto the workers if host chains/cranes break or the straps snap	Critical (15)	NA	<ul style="list-style-type: none"> <li>&gt; No employee should work under suspended loads</li> <li>&gt; Ensure chain hosts are secure and adhere to maintenance schedules</li> <li>&gt; Test hoists and cranes equipment monthly.</li> <li>&gt; All hoists and chains should be inspected before use</li> <li>&gt; Don't raise the load more than necessary.</li> </ul>	Low (2)	NA		
	Occupational Health and Safety	Sewing of bags while packing may cause back injuries from reaching, bending and twisting of the back	High (16)	NA	<ul style="list-style-type: none"> <li>&gt; Workers work in shifts</li> <li>&gt; Workbenches of different heights</li> </ul>	Low (2)	NA		
	Occupational Health and Safety	Workers can be clamped and injured by the needle or machine	High (12)	NA	<ul style="list-style-type: none"> <li>&gt; Workbenches of different heights</li> <li>&gt; Workers are trained on correct usage of equipment</li> <li>&gt; Workers work in shifts</li> <li>&gt; Personal protective equipment such as gloves are always worn</li> <li>&gt; First aid kits is available on site</li> </ul>	Low (1)	NA		
	Occupational Health and Safety	Pulling of pallets loaded with bags can trip over workers/operator if not well assembled or because of unstable loads	High (16)	NA	<ul style="list-style-type: none"> <li>&gt; Bags are securely mounted on pallets before pulling by placing a wrapping of the pallet and bags</li> <li>&gt; No single person may attempt to move pallet bags without assistance</li> <li>&gt; No workers shall walk under suspended loads</li> </ul>	Low (2)	NA		



			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Occupational Health and Safety	Pallet packing can potentially cause bags to fall off while packing at heights	High (16)	NA	<ul style="list-style-type: none"> <li>&gt; Where practicable, the need to work where there is the risk of a fall is eliminated</li> <li>&gt; If not possible, a ladder is used when packing at certain heights</li> <li>&gt; All equipment used is fit-for-purpose</li> <li>&gt; All persons responsible for work carried out where there is a risk of falling are competent in the correct use of the site management systems for the prevention of falls.</li> <li>&gt; Standard work procedures for the management and use of personal fall arrest and fall prevention</li> <li>&gt; Bags are securely fitted or covered before moving.</li> </ul>	Low (3)	NA		
Bailing	Occupational Health and Safety	Risk of harm and injury to workers when the hydraulic press is active	High (16)	NA	<ul style="list-style-type: none"> <li>&gt; Training on the use of the bailing machine</li> </ul>	Low (2)	NA		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?)	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
Emergency Incidents	Occupational Health and Safety	Fire at the Factory	Critical (20)	High (16)	<ul style="list-style-type: none"> <li>&gt; Development of a Fire Control Plan through the process of risk assessment</li> <li>&gt; Operational risk assessment for all hot works</li> <li>&gt; Developing site specific work procedures as part of the fire management system</li> <li>&gt; Induction on fire prevention and toolbox talks</li> <li>&gt; Control and reduce the potential risk of fire by segregating and safe storage of materials</li> <li>&gt; Avoid potential sources of ignition by prohibiting smoking in and around facilities.</li> </ul>	Moderate (6)	Low (2)		
Workshop	Occupational Health and Safety	Fire at the workshop	Critical (20)	High (16)	<ul style="list-style-type: none"> <li>&gt; Perform hot work in a safe location, or with fire hazards removed or covered</li> <li>&gt; Make suitable fire-extinguishing equipment immediately available. This can include pails of water, buckets of sand, hose, or portable extinguishers.</li> <li>&gt; Enforce safety procedures for hot work permits and ensure explosion hazards associated with hot work activity are recognized and mitigated.</li> </ul>	Moderate (6)	Low (2)		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?)	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Occupational Health and Safety	Risk of injury and harm from sharp objects	High (16)	NA	<ul style="list-style-type: none"> <li>&gt; Ensure good housekeeping standards</li> <li>&gt; Use sharp equipment. Dull blades cause more incidents because they are harder to work with and require more pressure. Sharp knives cut more effectively and do not slip as easily</li> <li>&gt; Ensure workers are competent for specific tasks at hand</li> <li>&gt; Appropriate Personal Protective Equipment (PPE) such as non-slip shoes, and properly fitted, insulated gloves with extra-long cuffs and extra grip on palms and fingertips to reduce the gripping force needed to handle greasy equipment.</li> </ul>	Low (2)	Low (2)		
Water and wastewater management	Environment	Risk of environmental pollution	NA	Critical (20)	<ul style="list-style-type: none"> <li>&gt; Recycle wastewater, where possible</li> <li>&gt; Install devices to prevent spills and overfills, e.g. shutoff devices for large volume tanks (e.g. &gt; than 2000lts)</li> <li>&gt; Install an impermeable hardstand in areas of high-risk contamination to prevent ground infiltration by pollutants</li> <li>&gt; Segregation of wastewater (domestic and industrial effluent)</li> <li>&gt; The monitoring of wastewater discharges should be conducted on a regularly.</li> </ul>	Moderate (6)	Low (2)		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Occupational Health and Safety	Potential contamination of portable water can transmit diseases such as diarrhoea, cholera, dysentery, typhoid, and polio	Critical (20)	NA	<ul style="list-style-type: none"> <li>&gt; Elimination or relocation of storm water overflows</li> <li>&gt; Fencing off of the source of the supply</li> <li>&gt; Properly dispose of chemical cleaners, oils, and non-biodegradable items</li> <li>&gt; Ensure vehicle inspections and maintenance for early oil leak detections, and implements of antifreeze, or coolant</li> <li>&gt; Fit appropriate covers on tanks etc. if relevant</li> </ul>	Low (2)	NA		
	Environment	Possible poor-quality sewage discharge runs the risk of pathogen /diseases transmissions and odours	High (16)	High (16)	<ul style="list-style-type: none"> <li>&gt; Ensure toilets are clean and dry at all times</li> <li>&gt; Provide adequate welfare facilities, including clean water, soap, disposable paper towels, and where heavy contamination is foreseeable</li> <li>&gt; Ensure suitable personal protective equipment, that may include waterproof/abrasion-resistant gloves, footwear, eye and respiratory protection. Face visors are particularly effective against splashes when working with sewage</li> </ul>	Moderate (6)	Low (2)		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?)	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
Waste Management	Environment/ occupational health and safety	Environmental pollution (littering and poor storage of waste)	NA	High (12)	<ul style="list-style-type: none"> <li>&gt; Implement a waste management plan covering all aspects of waste generated on site</li> <li>&gt; Training and toolbox talks about importance of waste management</li> <li>&gt; Ensure high standard of housekeeping across the site</li> <li>&gt; Waste storage areas shall always be kept clean and tidy</li> <li>&gt; Implement the waste management hierarchy across the site: Avoid, reuse, recycle, then the disposal</li> <li>&gt; Return packaging of hazardous and non-hazardous materials (wherever possible), such as empty bags, to farmers for reuse</li> <li>&gt; Solid wastes should be deposited/empties on a regulate basis</li> <li>&gt; See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers</li> <li>&gt; Liaise with the municipality regarding the waste and handling of hazardous waste.</li> </ul>	Low (3)	Moderate (6)		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
Kitchen	Occupational Health and Safety	Fire at the kitchen area	High (16)	High (15)	<ul style="list-style-type: none"> <li>&gt; Conduct a fire risk assessment in the kitchen and extended areas</li> <li>&gt; Design and control of flammable substances use and storage</li> <li>&gt; Ensure igniting sources are not laying around area and are kept safe.</li> </ul>	Moderate (6)	Low (3)		
	Occupational Health and Safety	Risk of kitchen staff skin burns from fire and cuttings	High (9)	NA	<ul style="list-style-type: none"> <li>&gt; Only use recommended fuel, other igniting material should be kept away</li> <li>&gt; Use sharp knives. Dull blades cause more incidents because they are harder to work with and require more pressure. Sharp knives cut more effectively and do not slip as easily</li> <li>&gt; Appropriate Personal Protective Equipment (PPE) such as non-slip shoes, and properly fitted, insulated gloves with extra-long cuffs and extra grip on palms and fingertips to reduce the gripping force needed to handle greasy dishes.</li> </ul>	Low (3)	NA		
	Occupational Health and Safety	Smoke and ventilation issues	High (9)	NA	<ul style="list-style-type: none"> <li>&gt; Make sure there is enough air entering the kitchen</li> <li>&gt; Providing rest breaks in a cool place</li> </ul>	Moderate (6)	NA		

			Health and Safety	Environmental				Health and Safety	Environmental
Task Activity/ Equipment	Receptor	Hazard Identified (Impact/ Risk - What can go wrong?	Inherent Risk Assessment	Inherent Risk Assessment	Mitigation Controls Measures	Residual Risk Assessment	Residual Risk Assessment		
			Result	Result		Result	Result		
	Occupational Health and Safety	Forceful lifting or carrying of heavy bowls or pots, causing awkward reaching, bending and twisting of the back and awkward forward bending of the back when stirring and reaching, and tipping soup kettles	High (9)	NA	> Have two people move heavy soup kettles/pots.	Low (2)	NA		
	Occupational Health and Safety	Risk of harm and tripping into sharp equipment/tools	High (9)	NA	> Ensure good housekeeping order.	Moderate (6)	NA		

## APPENDIX D - APPLICATION FOR A WASTEWATER DISCHARGE LICENCE





**DEPARTMENT OF WATER AFFAIRS & FORESTRY**

FAX: (061) 208 7160 PRIVATE BAG 13184  
TEL: (061) 208 7111 WINDHOEK  
REFERENCE NO: ..... NAMIBIA

**APPLICATION FOR A WASTEWATER DISCHARGE LICENCE, IN TERMS  
OF PART XIV OF THE WATER RESOURCES MANAGEMENT ACT, 2004**

**(Act No. 24 of 2004 - as published in the Government Gazette of the Republic of Namibia, No. 3357, of 23 December 2004, Government Notice No. 284)**

**A. GENERAL INSTRUCTIONS**

1. Applications must be submitted in duplicate to:

The Permanent Secretary  
Attn.: Law Administration  
Ministry of Agriculture, Water and Forestry  
Private Bag 13184  
WINDHOEK

2. Application Fee (to accompany this document): N\$ \_\_\_\_\_

3. The various sections have to be completed as follows:

- Section B & C** - All applicants
- Section D** - Complete only the part relevant to technology employed in your works.
- Section E** - All applicants (compulsory!)

4. Only the relevant Sections that have been filled in need to be submitted with this application.

5. A separate application needs to be filled in for each different plant/works.

**NAME OF TREATMENT PLANT/WORKS:** \_\_\_\_\_

**PLACE:** \_\_\_\_\_ **GPS Coordinates:** \_\_\_\_\_  
(e.g. town, settlement)

**B. GENERAL INFORMATION**

1. Name of applicant: \_\_\_\_\_

2. Address - Contact Person: \_\_\_\_\_

- Postal: \_\_\_\_\_

- Physical: \_\_\_\_\_

- Tel No.: \_\_\_\_\_

- Fax No.: \_\_\_\_\_

- E-mail: \_\_\_\_\_

3. Region in which plant is situated: \_\_\_\_\_

4. Constituency in which plant falls: \_\_\_\_\_

5. Type of establishment:  
(e.g. school, town, industry) \_\_\_\_\_

6. Source of water supply:  
(e.g. borehole, river, sea) \_\_\_\_\_

7. Total water consumption: \_\_\_\_\_ m<sup>3</sup>/day ADWF\*

(\*ADWF = Average Dry Weather Flow) \_\_\_\_\_ m<sup>3</sup>/day ADWF\*

• Consumption based on the average usage over a 12-month period. \_\_\_\_\_ m<sup>3</sup>/day ADWF\*

• List different sources separately \_\_\_\_\_ m<sup>3</sup>/day ADWF\*

8. Application:

• Prepared by: Name : \_\_\_\_\_ Position: \_\_\_\_\_

(e.g. Consultant) Signature: \_\_\_\_\_ Date: \_\_\_\_\_

• Responsible Executive: Name : \_\_\_\_\_ Position: \_\_\_\_\_

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

## C. TECHNICAL DETAILS - GENERAL

Answers to the following information must be contained in this application either from the questionnaire or as an attachment thereto (see also details in Appendix A):

NAME OF TREATMENT PLANT/WORKS: \_\_\_\_\_

1. Type of effluent (please also refer to Section D for classifications): \_\_\_\_\_

2. Site of works:

2.1 Submit a site plan indicating the exact location (or intended location) of the works. This plan should indicate (as a minimum):

- 2.1.1 General location of the works with regards to settlements, main roads, boreholes, rivers etc.
- 2.1.2 Layout plan of property showing all existing and proposed water pipes and effluent and drainage lines in distinctive colours.
- 2.1.3 Topographical plan/area photograph/contour plans showing the property and effluent treatment plant in relation to residential areas, rivers, pans, dams, lakes and boreholes.
- 2.1.4 Contour plans indicating the exact location of the effluent treatment works and point of discharge of final effluent in relation to watercourses that drain the area.
- 2.1.5 Give the following information:
  - 2.1.5.1 Distance to nearest inhabitants: \_\_\_\_\_ m
  - 2.1.5.2 Distance to nearest water abstraction point (e.g. river, borehole): \_\_\_\_\_ m
  - 2.1.5.3 Distance to nearest watercourse (e.g. dry river) and specify: \_\_\_\_\_ m
  - 2.1.5.4 Wind direction (main/normal) \_\_\_\_\_

2.2 Submit overall details of works:

- 2.2.1 Type of effluent treatment system and a brief description of its method of operation. (If domestic effluents are dealt with by the local authority please enclose a letter from the authority confirming this agreement).
- 2.2.2 Flow diagram/mass balances to show the present average quantities of incoming water, recycled water, final outflow, seepage and evaporation losses (all in m<sup>3</sup>/day).
- 2.2.3 Layout orientation drawing indicating all major treatment units and fence around works.
- 2.2.4 Complete flow diagram and key design parameters to include:
  - 2.2.4.1 Dimensions and design capacities of each unit process;
  - 2.2.4.2 Process Flow Diagram(s) and major instrumentation employed, e.g. water meters;
  - 2.2.4.3 Loadings on the system (e.g. hydraulic, COD, BOD, nitrogen, phosphate);
- 2.2.5 Indicate allowances that have been made for future expansion and increased loads (if any).
- 2.2.6 Methods of sludge disposal or recirculation.
- 2.2.7 Disinfection of the final effluent (indicate dosing type, method, retention period and optimum disinfectant level in final effluent).

3. Monitoring boreholes for monitoring groundwater pollution over time must be available within 500 m of the point of final effluent discharge.

4. Please note: Additional information is required for new treatment plants (e.g. an environmental impact assessment) - details can be obtained from the Department of Water Affairs and Forestry.

5. All relevant information must be included with this application. It is a criminal offence to deliberately withhold vital information relevant to this application. Where applicants are found to be in contravention with this requirement, they may/will be prosecuted.

## D. TECHNICAL DETAILS - SPECIFIC

Applicants should only complete sections relevant to their specific effluent (please tick relevant box):

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

D-1: Domestic Effluent - Includes wastewater collected in towns (excluding industrial effluent!), villages, schools, lodges, administration buildings.

D-2: Industrial Effluent - Includes wastewater generated by any industry, factory, etc.

D-3: Mining Effluent - Includes wastewater accumulated or collected due to mining operations (e.g. Acid mine wastewater)

D-4: Combination/mix of various effluents (list major effluent streams on page 11)

### Final Effluent Reuse

The pressure on Namibia's existing fresh-water supplies can, to a great extent, be eased by the sensible reuse of effluents for a variety of purposes including dust control, agriculture and industrial processes. Therefore, reuse of effluent after suitable treatment is encouraged.

The allowable reuse of an effluent is dependent upon its quality as well as many local circumstances and hence each application in this category needs careful and individual scrutiny, which should be undertaken by a specialist in this field and must be supported by an environmental impact assessment study.

A separate licence for effluent reuse is required and more details in this regards can be obtained from the Department of Water Affairs and Forestry.

**D-2. INDUSTRIAL EFFLUENTS**

Plant Name: .....

2.1	Describe industry and major activities resulting in effluent generation	
2.2	Capacity / Flowrates :	
	Design - Average daily flow	m <sup>3</sup> /d
	- Peak hourly flow	m <sup>3</sup> /h
	Actual (if in operation) - Average daily flow	m <sup>3</sup> /d
	- Peak hourly flow	m <sup>3</sup> /h
	If ponds are employed, state total surface area	m <sup>2</sup>
2.3	List only major contaminants (also attach full analysis of typical effluent sample)	
2.4	Type of treatment employed (give short overview of process):	
2.5	List major treatment chemicals* employed in the unit process(es):	
2.6	Final effluent quality after treatment (put envisaged final quality for a new plant):	
2.7	Sludge generation:	
	- Volume generated	m <sup>3</sup> /d
	- Mass	kg/d (dry solid)
	- Method of disposal	
	- Place of disposal	
	- Major constituents	
	- If sludge ponds, state frequency of cleaning	
2.8	Do you employ cleaner production principles (CPP)?      Yes/No	
	If "yes", elaborate:	
2.9	Is the following documentation included (give reason if not)?	
	▪ Water (and waste) management plan:	Yes/No
	▪ Decommissioning plan:	Yes/No

\* For the chemicals employed, proper mass balances should be included that show chemical usage, movement and discharge within the factory/process(es). All safety aspects related to handling, storage and disposal of chemicals on site must be followed at all times.



**D-4. COMBINATION OF VARIOUS EFFLUENTS**

Plant Name: .....

4.1	Describe major activities resulting in effluent generation (e.g. type of industry):				
4.2	Capacity / Flowrates of different streams (major only)	1	2	3	
	Type (e.g. domestic, industrial, mining, others)				
	Design - Average daily flow				m <sup>3</sup> /d
	- Peak hourly flow				m <sup>3</sup> /h
	Actual (if in operation) - Average daily flow				m <sup>3</sup> /d
	- Peak hourly flow				m <sup>3</sup> /h
4.3	List only major contaminants (also attach full analysis of typical effluent sample)				
4.4	Type of treatment employed (give short overview of process)				
4.5	List major treatment chemicals employed in the unit process(es):				
4.6	Final effluent quality after treatment (put envisaged final quality for a new plant)				
4.7	Sludge generation:				
	- Volume generated				m <sup>3</sup> /d
	- Mass				kg/d (dry solid)
	- Method of disposal				
	- Place of disposal				
	- Major constituents				
	- If sludge ponds, state frequency of cleaning				

**E. FINAL EFFLUENT DISPOSAL**

1.4.1	Where is the final effluent discharged to? (E.g. French drain, pumped out by Local Authority, dry river course, perennial river, etc.)	
1.4.2	IF soakaway, state: <ul style="list-style-type: none"> <li>- Type of soil</li> <li>- Suitability/porosity of soil</li> <li>- Size of soakaway area</li> <li>- Include topography and plan of soakaway area</li> </ul>	
1.4.3	Is there any post-treatment applied? (e.g. disinfection, filtration)	
1.4.4	Is the final effluent re-used? (Yes/No)	
	If "Yes", complete:	
	- Do you have a reuse licence?	
	- Amount of water that will be re-used:	m <sup>3</sup> /d
	- For what application:	
	- Type of irrigation used (if applicable):	
	- What crops are grown:	
1.4.5	- Area of land that will be irrigated:	ha
	Name (if any) downstream users (downstream of discharge point).	
1.4.6	Past records of complaints or objections by people living close to works:	

Reuse:

A reuse licence is required – details can be obtained from the Department of Water Affairs and Forestry.

Irrigation:

The crops allowed to be irrigated are dependent upon effluent quality (details will be supplied on request by the Department of Water Affairs and Forestry).







## APPENDIX F - TEMPLATE FOR MONITORING

INSPECTION DATE: \_\_\_\_\_

INSPECTION COMPLETED BY: \_\_\_\_\_

SUMMARY OF ACTIVITIES OCCURRING:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Ref No.	Item	Requirements	Responsibility	Compliant	Notes / Action Taken / Corrective Action Required
1	Noise	<ul style="list-style-type: none"> <li>- Is the facility avoiding noise generating activities at night?</li> <li>- Is scheduling of works to avoid disturbance between the hours of 22pm and 5 am in place?</li> <li>- Are Saturday operational periods from 8 am – 12 noon, when near residential areas?</li> <li>- Are procedures for receiving complaints from nearby land users or residents in place and mitigation measures implemented should operations generate excessive noise?</li> </ul>	- SHE Representative	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Requirements	Responsibility	Compliant	Notes / Action Taken / Corrective Action Required
2	Operations of mechanical equipment and engines	<ul style="list-style-type: none"> <li>- Are regular checks of all plant and equipment conducted routinely?</li> <li>- Is plant and equipment services up to date?</li> <li>- Are spill kits and/or drip trays available?</li> </ul>	<ul style="list-style-type: none"> <li>- SHE Representative, and</li> <li>- General Manager</li> </ul>	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
3	Production and effluent discharge	<ul style="list-style-type: none"> <li>- Is the domestic and industrial effluent discharged off into approved systems?</li> <li>- If not, are regular water quality samples taken to ensure the treated wastewater complies to the prescribed general standards as set out in the Water Resources Management Act, 2004 (Act No. 24 of 2004)?</li> </ul>	<ul style="list-style-type: none"> <li>- SHE Representative, and</li> <li>- General Manager</li> </ul>	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
4	Solid waste generation	<ul style="list-style-type: none"> <li>- Has the waste management plan and the application of the waste management hierarchy implemented?</li> <li>- Are suitable collection points in place for waste collection at the factory?</li> <li>- Is waste collected regularly and transported correctly?</li> <li>- Is hazardous waste such as waste oil/lubricant stored in a hazardous waste storage area and disposed of by accredited hazardous waste handlers such as Rent A Drum?</li> </ul>	<ul style="list-style-type: none"> <li>- SHE Representative, and</li> <li>- General Manager</li> </ul>	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
5	Lighting	<ul style="list-style-type: none"> <li>- Are energy-efficient light bulbs installed?</li> <li>- Is unnecessary lighting avoided where possible?</li> <li>- Are lights switched off at night?</li> </ul>	<ul style="list-style-type: none"> <li>- SHE Representative, and</li> <li>- General Manager</li> </ul>	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Requirements	Responsibility	Compliant	Notes / Action Taken / Corrective Action Required
7	Air Emissions	<ul style="list-style-type: none"> <li>- Are the dust extractors cleaned regularly?</li> <li>- Are vehicles serviced regularly to reduce emissions?</li> <li>- Is there dust monitoring system in place?</li> </ul>	- SHE Representative	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
8	PPE	<ul style="list-style-type: none"> <li>- Are personnel wearing the correct PPE?</li> <li>- Is PPE in good condition?</li> <li>- Are there any complaints on the health of workers</li> </ul>	- SHE Representative	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

## APPENDIX G – INCIDENT REPORT FORM



www.jumbocharcoal.co.za

## JUMBO CHARCOAL

Barbecue Charcoal manufactured from invader bush

OKAHANDJA  
P.O. Box 51, Okahandja  
Tel: +264(62)503838  
Fax: +264(62)503449  
Email: jumbo@nwel.com.na, jumbo@nwel.co.za

WALVIS BAY  
P.O. Box 4170, Walvis Bay  
Tel: +264(64)221110  
Fax: +264(64)221111  
Email: jumbo@nwel.com.na

JUMBO CHARCOAL (PTY) LTD  
INITIAL INJURY REPORT

Doc. Ref: JHR 8  
Issue/Amendment: 1/1  
Date: 30-Sept-13

### INJURY INITIAL REPORT:

DATE:	<u>11.03.2014</u>	EMPLOYEE NAME:	<u>Kushonga Michael Dizemo</u>
EMPLOYMENT NO:	<u>00007</u>	EMPLOYEE POSITION:	<u>Painter</u>
DEPARTMENT:	<u>Painter</u>	FOREMAN/MANAGER:	<u>Emilio mbimbj</u>

Area where accident happened:

Sieve department

Time of injury:

07h 45

Location of incident:

Sieve department at shed B area.

Description of incident:

The bulk bags fall on him and he was lying under the bags.

Nature of injury:

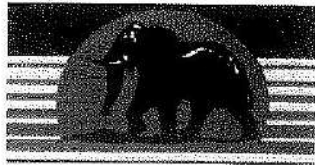
chest pain

Initial action taken (if any):

To be taken to the hospital

This form must accompany the injured to the place of treatment as soon as possible  
**DO NOT DELAY TREATMENT !!**





# JUMBO CHARCOAL

Barbecue Charcoal manufactured from invader bush

OKAHANDJA  
P.O. Box 51, Okahandja  
Tel: +264(66)903838  
Fax: +264(66)903449  
Email: jumbo@mvweb.com.na; jumboch@bway.na

WALVIS BAY  
P.O. Box 4170, Walvis Bay  
Tel: +264(64)221410  
Fax: +264(64)221411  
Email: jumbowb@mvweb.com.na

www.jumbocharcoal.lway.na

Treatment given (To be filled in by 1<sup>st</sup> aid attendant, Nursing Sister, Doctor or Paramedic)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Return to work (Y or N): \_\_\_\_\_ Booked off from: \_\_\_\_\_ to \_\_\_\_\_

Name in block capitals: \_\_\_\_\_ Signature: \_\_\_\_\_

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

*This form must be sent back to supervisor on completion and a copy forwarded to the Health and Safety officer as soon as possible.*

\*\*\*\*\*  
**INVESTIGATION BY HEALTH AND SAFETY OFFICER OF JUMBO CHARCOAL PTY LTD**  
\*\*\*\*\*

On the 11-03-19 around 07h15 Michael was collecting the broken pallets to go and fixing it. Michael was take collect one pallet under the wax conveyor at Steve Side. Michael was passing at the wax area where wax team pulling Castrol/Chain, Michael just feels the bags of Charcoal (20/40) fall on top of him. Benyamen Mashimba forklift driver is the one who was pack the Charcoal at wax area. Benyamen was go back to take another bag when he come he find Michael under the bags, Mashimba take away the bags on top of Michael with a forklift, after Mashimba take away the bags on top of Michael Michael was feel pain the whole body He was having wound at his left ribs side and at the left knee there was also wound. Michael was taken to hospital by Daniel Mbaluma (driver), Efraim and William Emilie, Michael was go to ex-ray and the doctor say his rib is broken and Michael was booked off for one month.

Health and Safety officer (Full Name):

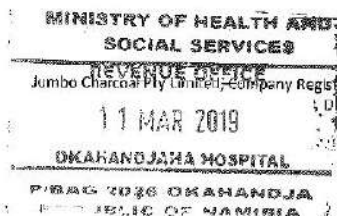
Theresa Gabriel

Signature:

Daniel

Date:

08.04.19



Jumbo Charcoal (Pty) Limited, Company Registration Number: 89/085. Site address: 3km west of Okahandja on the B2 Highway  
Directors: Mr I Galloway, Ms C Galloway

## APPENDIX G - COMPLAINTS REGISTER TEMPLATE

NAME	CONTACT DETAILS	DATE AND LOCATION OF COMPLIANT	NATURE OF COMPLIANT	ACTION TAKEN TO RESOLVE	NOMINATED PERSON TO RESOLVE ISSUE <i>(Signature)</i>	DATE OF RESOLUTION/ CLOSED OUT COMPLAINT



## APPENDIX H - MONTHLY INTERNAL COMPLIANCE CERTIFICATE

FOR THE PERIOD ..... TO .....

MANAGEMENT REPRESENTATIVE:	SIGN:
SHE Representative:	SIGN:
Date of Submission: _____	
Key activities on site during the month: _____	
<b>NON-CONFORMANCE:</b>	
Area of activity: _____	
Reason: _____	
Responsible party: _____	
Results: _____	

Correction action taken:	
--------------------------	--

Intended follow-up:	

**GOOD PERFORMANCE:**

Description of activity or action in which the area/person went beyond compliance towards responsible care for the environment:	

**ADDITIONAL COMMENTS:**