




ECC-28-329-REP-06-A

ENVIRONMENTAL MANAGEMENT PLAN

A CHARCOAL PRODUCTION AND STORAGE PLANT IN OUTJO

KUNENE REGION, NAMIBIA

PREPARED FOR

ALFACHARCOAL NAMIBIA (PTY) LTD

FEBRUARY 2021

ENVIRONMENTAL COMPLIANCE CONSULTANCY CC/2013/11404
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TITLE AND APPROVAL PAGE

Project Name:	Environmental Management Plan for an existing charcoal production and storage plant in Outjo, Kunene Region, Namibia
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CONTENTS

TABLES

FIGURES

DEFINITIONS AND ABBREVIATIONS

BSCI	Business Social 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
IFC	International Finance Corporation
MAWL	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment Forestry and Tourism
MSDS	Material Safety Data Sheet
NCA	Namibia Charcoal Association
PPE	Personal Protective Equipment
SHE	Safety Health Environmental
WHO	World Health Organisation

1 INTRODUCTION

1.1 BACKGROUND TO THE PROPOSED PROJECT

Environmental Compliance Consultancy (ECC) has been engaged by the proponent Alfacharcoal Namibia (Pty) Ltd to develop and Environmental Management Plan (EMP) for their existing operation in Outjo in terms of the Environmental Management Act, No. 7 of 2007 and its regulations. This EMP will be submitted as part of an application for environmental clearance to the relevant authority, the Ministry of Environment, Forestry and Tourism (MEFT).

The project entails the operation of a charcoal production and storage plant in Outjo, Kunene Region, Namibia. The operation utilises 'retort' carbonization technology.

The following activities and infrastructure are associated with the project:

- Continued operation of the existing charcoal production and storage plant including the use of the onsite offices, as well as toilet facilities;
- Water is sourced from the Outjo municipality;
- Electricity is supplied by the NamPower grid network; and
- Existing infrastructure including two retort kilns; two storage sheds; and an office block.

Biomass from harvested encroacher bush species (in the form of wood logs) is sourced from the surrounding farms that are FSC (Forest Stewardship Council) certified. The Alfacharcoal plant is certified as FSC by complying to the FSC Chain of Custody Certification (CoC) requirements which are audited annually.

Once the raw material is delivered to the plant, the wood is sawn into one-meter pieces with a 100-200mm diameter to fit into the retort kiln chambers and slowly burnt. The final product (unsieved charcoal) from this process is loaded in bulk bags and transported to a processor (Unifoods) located approximately 7km outside of Outjo where it is sieved in all the different sizes. Unifoods keeps the sand, ash, fines and charcoal for packaging. Figure 2 shows the plant's location on a zonation map of the Outjo town.

The plant is located on Erf 636 in the area zoned 'general industrial' of Outjo on a 7100 square meter sized Erf and can be accessed via the C39 main road (Figures 1). Alfacharcoal Namibia is a certified charcoal producer as indicated on the fitness certificate contained in Appendix A.

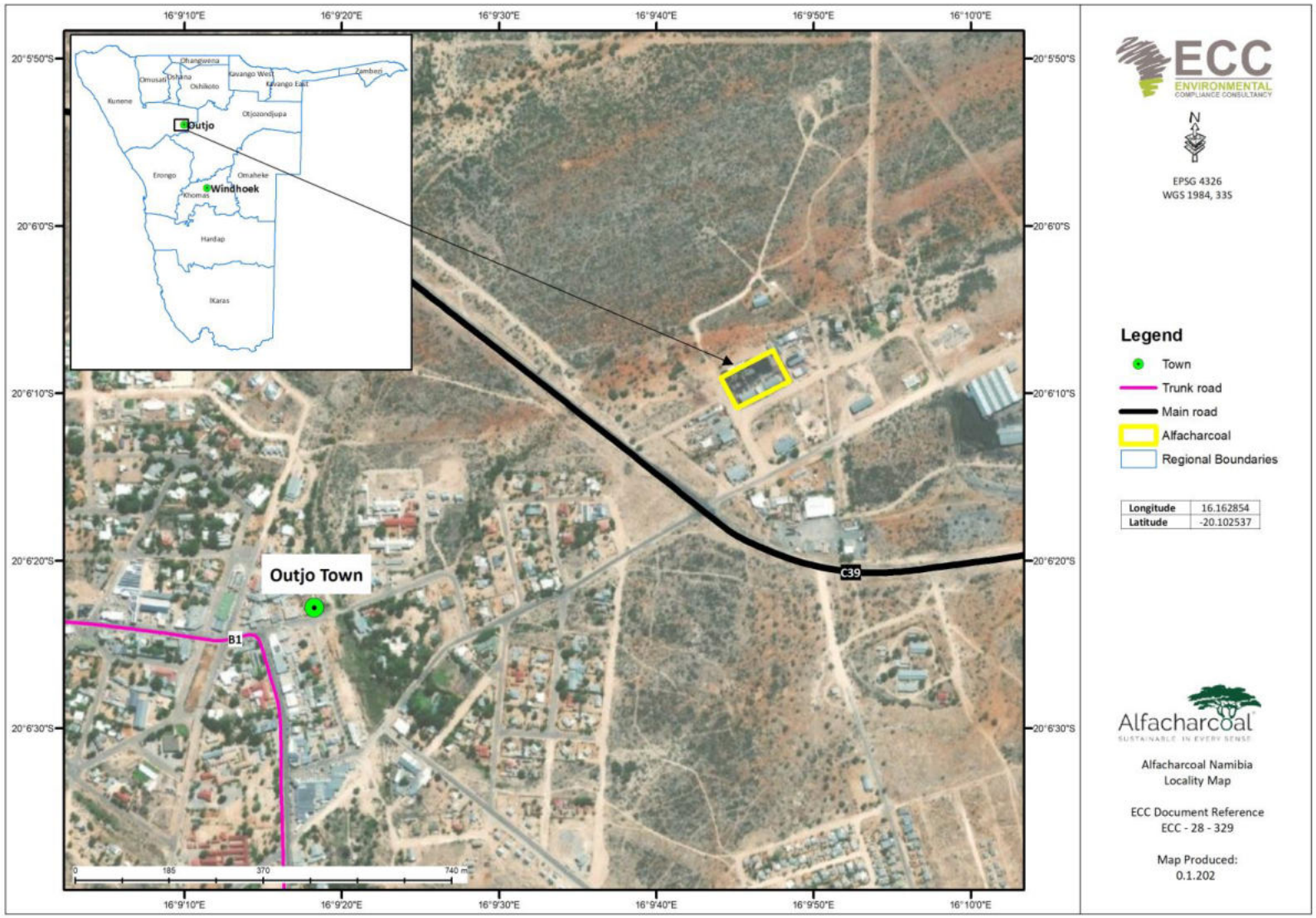

FIGURE 1 - LOCATION OF THE ALFACHARCOAL PLANT

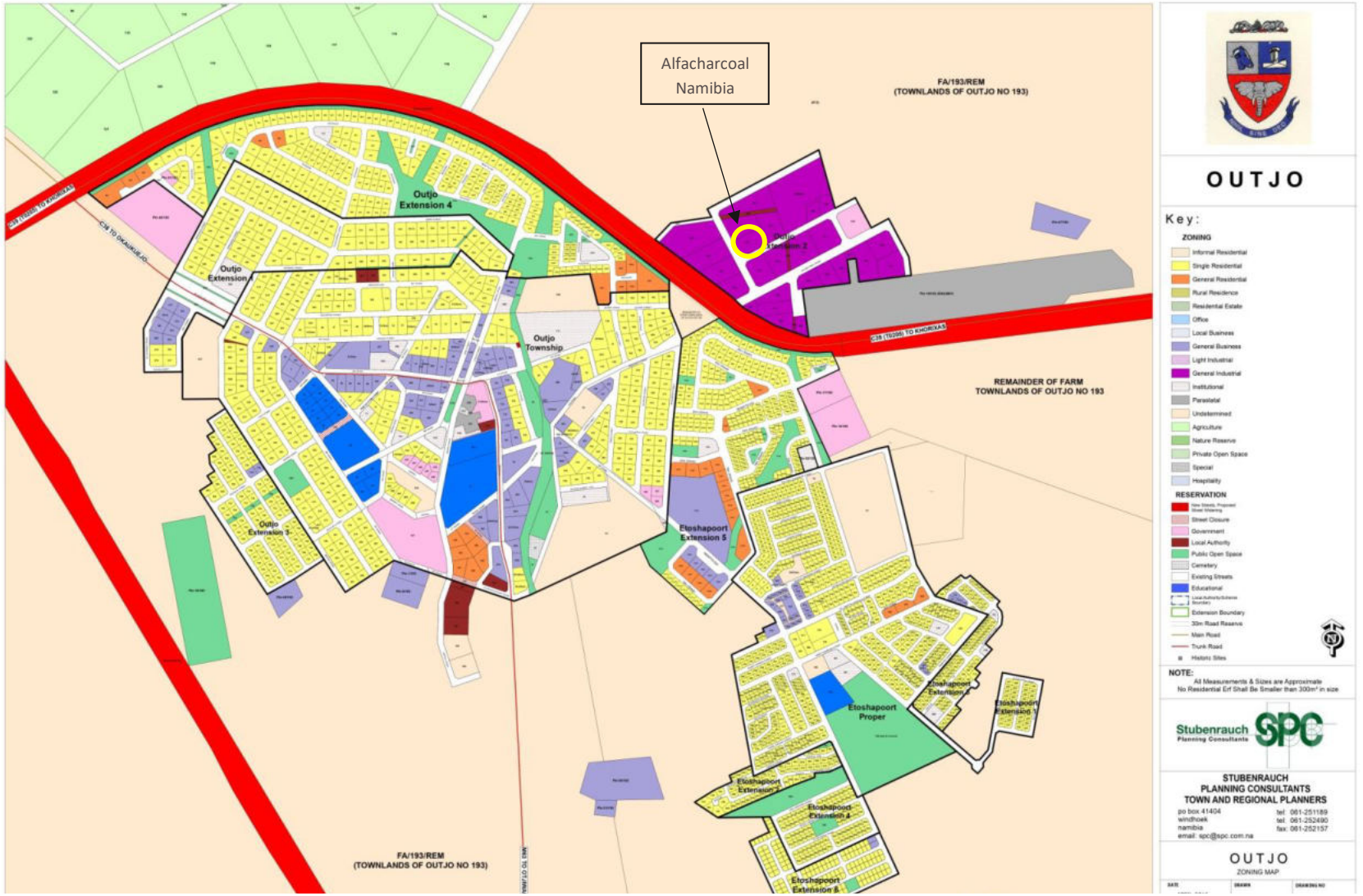

FIGURE 2 - LOCATION OF THE ALFACHARCOAL PLANT IN THE GENERAL INDUSTRIAL (HIGHLIGHTED IN DARK PURPLE) ZONE AREA OF OUTJO. SOURCE: OUTJO MUNICIPALITY (2020)

1.2 I&AP ENGAGEMENT

The following properties are located next to the Alfacharcoal plant:

TABLE 1 - LIST OF CONTACT DETIALS FOR NEIGHBOURING PROPERTIES

PROPERTY CONTACT PERSON	CONTACT DETAILS
Hose Centre	Russel and Nerina Smith: 081 474 5808
Plumbco	Boxer Prinsloo: 081 127 0824
Fourek Investments	Andries Brand: 081 127 4020
Etosha Tannery	Benni Booysen: 067 312012; 081 405 6494; 081 253 7228. Email: etoshatannery@iway.na | bbooysen@yahoo.com

1.2.1 CONCERNS RAISED DURING THE INITIAL PUBLIC CONSULTATION PHASE

Concerns raised related to air and noise pollution from current operations experienced by a resident and a neighbouring business to the plant. These concerns were provided to ECC via email and contained in Appendix D. Extracts of the advertisements published on the 18th and 24th of November 2020 in the Republikein, the Namib sun and the Allgemeine Zeitung Newspapers are contained in Appendix C.

In response, appropriate mitigation measures and management actions are contained in this EMP (section 5.3, Table 4) to reduce the potential of noise and air pollution impacts emanating from the plant.

1.3 PROJECT DESCRIPTION

Alfacharcoal Namibia (Pty) Ltd utilises two retort kilns in their processing plant to enhance their operations, to maximise output and reduce air emissions. Retort technology is known for expelling fewer emissions and producing good quality charcoal compared to standard kilns. Charcoal is produced by carbonization, which is a process of slow-heating wood in airtight ovens (or retorts in this case), at various gas levels. Alfacharcoal produces charcoal in bulk. The cooled down charcoal, charcoal fines, sand and ash are sold to a processor (Unifoods) located approximately seven kilometres outside of Outjo. No additional processing takes place on the site. Operations run on a 24/7 hr/day cycle.

Wood carbonises at a coaling temperature between 700 - 1000-degree celsius and slow heating rates to ensure the least amount of volatile organic matter remains within the raw material and a cleaner gas is formed which is fed back into the carbonisation process as fuel. If the coaling temperatures are too low, excessive amounts of volatiles will remain in the charcoal and cause heavy smoke when it burns. Figure 3 shows a typical flow diagram of a retort charcoal production process.

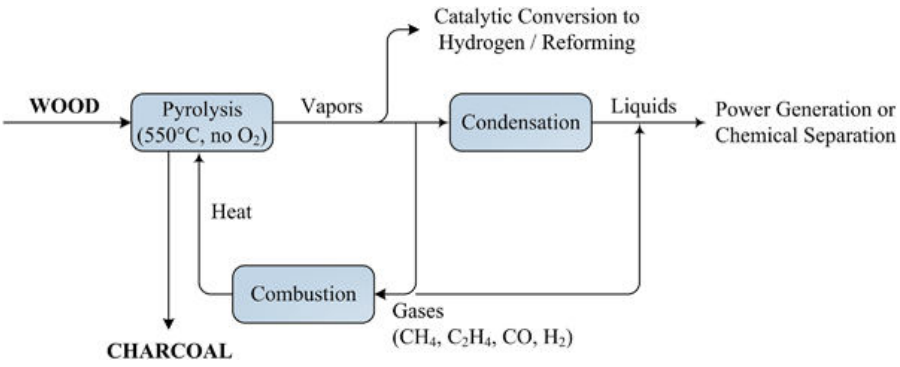

FIGURE 3 - TYPICAL RETORT CHARCOAL PRODUCTION FLOW DIAGRAM (AYASS, 2018)

Properties of charcoal produced are:

- a low sulfur (S) content;
- a high carbon to ash ratio;
- relatively few and unreactive inorganic impurities;
- a specific pore structure with a large surface area; and
- little smoke discharge.

FIGURE 4 - VIEW OF THE RETORT KILNS ON SITE IN OPERATION. NOTE: NO VISIBLE EMISSIONS WHEN THE KILNS ARE OPERATED CORRECTLY

1.4 ENVIRONMENTAL REGULATORY REQUIREMENTS

The project activities trigger listed activity 2.2 within the Environmental Impact Assessment regulations, No. 30 of 2012. The listed activity therefore is "…Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance 11 of 1976". As a listed activity an application for an environmental clearance certificate is required. The application process requires an Environmental Management Plan (EMP) to be developed and submitted as part of the environmental clearance certificate application process, as well as to support the decision-making process. This EMP has been undertaken in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 and its regulations.

1.5 PURPOSE AND SCOPE OF THIS REPORT

This EMP provides a logical framework, proposed mitigation measures and management strategies for the activities associated with the existing operation, in this way ensuring that the potential environmental and social impacts are mitigated and minimised as far as practically possible and that statutory and other legal obligations are adhered to and fulfilled. Outlined in the EMP are the protocols, procedures and roles and responsibilities to ensure the management arrangements are effectively and appropriately implemented.

This EMP is a live document and shall be reviewed at predetermined intervals, and updated when the scope of work alters, or when further data / information can be added in the future. All personnel working on the project will be legally required to comply with the standards set out in this EMP.

The scope of this EMP includes all activities carried out during the operational stages of the project.

1.6 Management of this EMP

The proponent, Alfacharcoal Namibia (Pty) Ltd, will hold the environmental clearance certificate for the plant and shall be responsible for the implementation and management of this EMP. Should it be necessary, this EMP shall be reviewed, amended as required and such amendments approved prior to implementation. The implementation and management of this EMP and thus the monitoring of compliance shall be undertaken through daily duties and activities as well as monthly inspections.

This EMP shall be circulated to all contractors and made available on ECC's website.

1.7 Limitations, Uncertainties and Assumptions of this EMP

This EMP does not include measures for compliance with statutory occupational health and safety requirements as this has already been developed by the proponent and in use.

Where there is any conflict between the provisions of this EMP and any contractor's 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.

Where the project methods alter, this EMP may require updating and potential further assessment undertaken.

1.8 Environmental Consultancy

Environmental Compliance Consultancy (ECC), a Namibian consultancy with registration number CC/2013/11401, has prepared this document 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 sector. ECC is independent of the proponent and has no vested or financial interested in the proposed project expect for fair remuneration of professional services rendered.

All compliance and regulatory requirements regarding this document should be forwarded by email or post to the following address:

Environmental Compliance Consultancy
PO BOX 91193
Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

2 PROJECT MANAGEMENT PERSONNEL

The proponent shall provide a project team to oversee the operational activities of the plant, which shall be composed of the proponent's personnel or possible contractors. A nominated role shall be identified to ensure the management and implementation of this EMP throughout the duration of the project, which shall be supported by the proponent.

2.1 Organisational Structure, Roles and Responsibilities

The proponent shall be responsible for:

- Ensuring all members of the project team, including contractors, comply with the procedures set out in this EMP;
- Ensuring that all personnel are provided with sufficient training, supervision, and instruction to fulfil this requirement; and
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

Contractors shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this EMP, and meet the responsibilities listed above. The key personnel and environmental responsibilities of each role through the project life are presented in Table 1.

TABLE 2 - ROLES AND RESPONSIBILITIES

ROLE	RESPONSIBILITIES & DUTIES
General manager	– Responsible for ensuring compliance with this EMP – Ensuring employees understand and comply with the requirements of this EMP – Ensuring that all personnel are provided with enough training, supervision and instruction to fulfil this requirement – Ensuring compliance with this EMP including overseeing the day-to-day activities during operations, and routine and non-routine maintenance works during operations – Ensure the environmental policy is communicated to all personnel – Responsible for providing the required resources (including financial and technical) to complete any required tasks – Responsible for the management, maintenance and revisions of this EMP – Maintain a community issues and concerns register and keep records of complaints – Maintain an up-to-date register(s) of employees who have completed the site induction – Ensuring that best environmental practice is undertaken throughout the operations of the plant – Notifying relevant regulatory authorities if serious environmental incidents occur as soon as possible; – Being responsible for all management plans and environmental monitoring; and – Receiving and responding to environment-related complaints received from the public or other stakeholders.

ROLE	RESPONSIBILITIES & DUTIES
Plant supervisor (Appointed HSE Responsible Person)	Alfacharcoal Namibia's plant supervisor will be responsible for the implementation of the EMP for the plant, as the plant's appointed SHE responsible person. The plant supervisor will be available, as required, throughout the operations of the plant and is responsible for the following roles: – Ensuring all personnel have undertaken a site induction and are conversant with the requirements of this EMP; – 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 operation activities be ceased immediately should an adverse impact on the environment be likely to occur; – Weekly checklists must be completed by the Plant supervisor and findings submitted to the general manager; – Monthly EMP checklist must be completed by the Plant supervisor. Findings are to be submitted to the general manager; – Internal compliance certificate must be completed monthly by the Plant supervisor incorporating the checklist' findings. This certificate must be submitted to the general manager; – Provisioning of environmental awareness/management training and inductions; – Ensuring that best environmental practice is undertaken throughout the operations of the plant; – Timely distribution of any relevant environmental documentation, including revisions to this EMP to all staff; and – Reporting of any operations and conditions that deviate from the EMP or any non-compliant issues or accidents to the proponent.
Employees / Contractors as well as visitors where applicable	Any contractors hired during the operation or maintenance activities at the plant shall be compliant with this EMP, and shall be responsible for the following: – Undertaking activities in accordance with 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.

2.2 EMPLOYMENT

The proponent and all contractors shall comply with the requirements of the Regulations for Labour, Health and Safety and any amendments to these regulations. The following shall be complied with:

- In liaison with local government, community, stakeholders and relevant authorities the proponent shall ensure that local people have access to information about job opportunities and are considered first for construction / maintenance contract employment positions;

- The number of job opportunities shall be made known together with the associated skills and qualifications;
- The maximum length of time the job is likely to last for shall be clearly indicated;
- Foreign workers with no proof of permanent legal residence shall not be hired;
- Every effort shall be made to recruit from the pool of unemployed workers living in the local area; and
- Every employee (approximately 34) hired must be provided with a valid employment contract stating, the position hired for, the hourly remuneration offered.

3 COMMUNICATION AND TRAINING

It is also important that regular communications are maintained with all the stakeholders and that stakeholders are 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 any environmental issues to the project team through the following means (as and when required):

- Site induction;
- Internal and external audits and site inspections;
- Toolbox talks, including instruction on incident response procedures; and
- Briefings on key project-specific environmental issues.

This EMP shall be distributed to the operational team including any contractors and personnel working on the site to ensure that the environmental requirements are adequately communicated. Key activities and environmentally sensitive operations shall be briefed to workers and contractors.

During the operational activities, communications between the management team shall include discussing any complaints received and actions to resolve them, any inspections, audits or non-conformance with this EMP, and any objectives or target achievements.

3.2 ENVIRONMENTAL EMERGENCY AND RESPONSE

The general manager and the Plant supervisor are the primary contact persons in the event of an environmental emergency. The general manager 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 3 - EMERGENCY CONTACT DETAILS

TOWN	AMBULANCE	POLICE	FIRE BRIGADE
Outjo	+264 (67) 31-3044	+264 (67) 1-0111	+264 (67) 31-3013

For large-scale spills and other significant environmental incidents, the fire services should be contacted as required and the MEFT office informed of the incident (telephone +264 61 284 2111). All correspondence with MEFT should be undertaken by the general manager as guided by the Plant supervisor.

3.3 COMPLAINTS HANDLING AND RECORDING

The proponent shall maintain a complaint's register that will detail the name and contact details of the complainant, date and time of the complaint, nature of the complaint, the action(s) 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 the 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 plant and will be available for government or public review upon request.

3.4 Training and Awareness

All personnel working on the project 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.

3.4.1 Site induction

All personnel involved in the project shall be inducted to the site with a specific environment and social awareness training component. 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:
  - What is meant by “environment” and “social”;
  - What are the environmental risks and impacts of this plant;
  - What can be done to mitigate against such impacts; and
  - Why the environment needs to be protected and conserved;
- The inductee’s role and responsibilities with respect to implementing the EMP;
- The sites environmental rules;
- Details of how to deal with, and who to contact if environmental problems should they occur;
- Basic vegetation clearing principals and species ID sheets;
- Focal themes such as compliance, reporting of accidents and incidents, good housekeeping and standard procedures for waste management;
- The potential consequences of non-compliance with this EMP and relevant statutory requirements; and
- The roles of responsible people for the project.

4 REPORTING, COMPLIANCE AND ENFORCEMENT

4.1 Environmental Inspections and Compliance Monitoring

4.1.1 Daily compliance monitoring

A copy of this EMP shall be on site at all times and shall be available upon request. It is the responsibility of the Plant supervisor to enforce the provisions within this EMP and equally ensure that this EMP is complied with by all personnel on site through their daily roles. Daily, weekly and monthly inspections will be undertaken. Any environmental problems or risks identified shall be relayed to the manager and actioned as soon as is reasonably practicable.

4.1.2 Monthly compliance monitoring

Monthly inspections shall be undertaken by the general manager to check that the standards and procedures set out in this EMP are being complied with and pollution control measures are in place and working correctly. 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 taken and any necessary follow up measures required.

4.1.3 Reporting

There shall be a requirement to ensure that any incident or non-compliance, including any environmental issue, failure of equipment or accident, is reported to the manager.

4.2 Relevant Permits

In addition to an environmental clearance certificate, the proponent will ensure that all documentation, permits and measures are in place for their sewage disposal system on site 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 Land Reform (MAWLR). In future, should the plant be connected to a water system, the responsible party is liable for the reticulation and treatment of sewerage water discharged into the sewerage system.

4.3 Non-compliance

4.3.1 Non-compliance event

Where it has been identified that works are not compliant with this EMP, the proponent shall employ corrective actions so that the works return 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. The notice shall be generated during the inspections and the general manager 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 Plant supervisor or contractor has failed to comply with corrective or other instructions issued by the manager or qualified authority; or
- The Plant supervisor or contractor fails to respond to complaints from the public.

Activities shall be stopped in the event of a non-compliance until corrective action(s) has been completed.

4.4 INCIDENT REPORTING

The Plant supervisor must ensure that an accident and incident (including minor or near miss) reporting system is maintained so that all applicable statutory requirements are covered. 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.

The Plant supervisor 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.

4.4.1 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.

5 ENVIRONMENTAL AND SOCIAL MANAGEMENT

5.1 Environmental Performance Measurement

This chapter provides a register of environmental risks and issues, which identifies mitigation and monitoring measures, as well as roles responsible. This register will be subject to regular review by the manager and updated when necessary.

The proponent or site manager (if applicable) will use this register to undertake monthly inspections (see next section) to ensure the project is compliant with this EMP.

5.2 Objectives and Targets

Environmental protection is the responsibility of Alfacharcoal Namibia (Pty)Ltd management and if 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 Alfacharcoal can minimise potential impacts on the environment, as far as reasonably practicable.

Environmental objectives for the project are as follows:

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

5.3 Register of Environmental Risks and Issues

A schedule of environmental commitments and risks has been produced, which details deliverables including measures identified for the prevention of pollution or damage to the environment during the pant's lifetime.

Table 3 provides a register of environmental risks and issues, which identifies mitigation and monitoring measures, as well as the responsible person. This register will be subject to regular review by the manager and updated when necessary. The general manager will use this register to undertake monthly inspections to ensure the project is compliant with this EMP.

TABLE 4 - ENVIRONMENTAL RISKS AND ISSUES, AND MITIGATION AND MONITORING MEASURES

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
General operational activities	Odour, noise and smoke nuisances emanating from the plant during operational hours	– Continue to utilise the plant's existing video recording system to visually monitor emissions from plant operations. Currently this system is in place and records footage on a 24-hour basis. – Ensure a complaints register is available and all complaints are recorded. – Should complaints be received, the existing video footage can be used to verify whether the smoke is from the plant. If the smoke is from the plant a root cause assessment shall be done to identify why the smoke occurs. – Monitor air quality (through quantitative means) to detect areas of concern by implementing an air quality monitoring protocol for the plant.	– Daily	– Plant supervisor
	Noise disturbance to neighbouring businesses due to the operational activities.	– Minimise excessive noise-generating activities, where possible; – Procedures for receiving complaints from surrounding businesses or residents to be in place and mitigation measures to be implemented should activities generate excessive noise, which is unexpected; and – In the event that noise complaints are received on a frequent basis noise monitoring should be carried out using a type 1 or 2 sound level meter.	– Daily	– General manager/ Plant supervisor/ Employees
	Loud noises generated by machinery on site and prolonged exposure to them can result in nuisance for workers and neighbours as well as potential hearing loss in the long term.	– Ensure noise levels are maintained within the International Labour Organisation's (ILO) daytime and night-time occupational exposure limit of 85 Db for industrial areas; – Ensure that machines are maintained on a regular basis; – Hearing protection (ear plugs or noise cancelling headphones) should be provided (mandatory) on a risk identification basis and when noise levels exceed 85dB; – Implement work rotation programs to reduce cumulative exposure to vibration on personnel.	– Daily	– Plant supervisor

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
Emergency Incidents	Fire at the Plant/Workshop	– Development of a Fire Control Plan through the process of risk assessment; – Operational risk assessment for all hot works; – Developing site specific work procedures as part of the fire management system; – Induction on fire prevention and toolbox talks; – Control and reduce the potential risk of fire by segregating and safe storage of materials; – Avoid potential sources of ignition by prohibiting smoking in and around the plant; – Perform hot work in a safe location, or with fire hazards removed or covered; – Make suitable fire-extinguishing equipment immediately available. This can include pails of water, buckets of sand, or portable extinguishers; and – Enforce safety procedures for hot work permits and ensure explosion hazards associated with hot work activity are recognized and mitigated. – Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. – Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air); and – Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).	– Daily	– Plant supervisor
	Soil and water contamination due to inadequate control or accidental release of hazardous substances on site	Since there is the potential to store approximately 140 litres of diesel fuel per week in 20-liter containers on site, the following should be taken into consideration. **Storage** – Label chemicals appropriately	– Daily	– All staff members

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– 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 – Store chemicals in a dedicated, enclosed, and secure plant with a roof and a paved/concrete floor. – Chemical tanks should be completely contained within secondary containment such as bunding – Consider feasibility of substitution of hazardous chemicals with less hazardous alternatives. – Storage and handling of fuels and chemicals shall be in compliance with relevant legislation and regulations – 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 **Spills** The kits with the following items as a minimum should be made available on site: – Absorbent materials – Shovels – Heavy-duty plastic bags – Protective clothing (e.g., gloves and overalls) – Major servicing of equipment shall be undertaken offsite or in appropriately equipped workshops – 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). – Provision of adequate and frequent training on spill management, spill response and refuelling must be provided to all onsite staff		

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– No refuelling is to take place within 50 meters of groundwater boreholes, surface water or streams. – Vehicles and machinery are to be regularly serviced to minimise oil and fuel leaks – All major petroleum product spills (spill of more than 200 litres per spill) should be reported to the Ministry of Mines and Energy (MME) on Form PP/11 titled "Reporting of major petroleum product spill'. **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. **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. In most cases, it will be necessary to excavate the underlying soils until clean soils are encountered. – All contaminated materials recovered subsequent to a spill, including soils, absorbent pads and sawdust, are to be disposed of at an appropriately licenced plant, and – A written Incident report must be submitted to the general manager.		

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
Water and wastewater management	Risk of environmental pollution	– Recycle wastewater, where possible and feasible. – Install an impermeable hardstand in areas of high-risk contamination to prevent ground infiltration by pollutants. – Segregation of wastewater (domestic and industrial effluent), and – The monitoring of wastewater discharges should be conducted on a regular basis.	– Daily/Weekly	– Plant supervisor
	Possible de-containment of sewage effluent discharged into the environment runs the risk of pathogen /diseases transmissions and odours	In order to obtain an effluent wastewater permit, the proponent should have the following information and complete the application: – 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. – Ensure toilets are always clean and dry. – Provide adequate sanitary facilities, including clean water, soap, disposable paper towels. – Ensure suitable personal protective equipment that may include waterproof/abrasion-resistant gloves, footwear, eye, and respiratory protection, and – Face visors are particularly effective against splashes when working with sewage.	– Daily	– Plant supervisor

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
Waste Management	Environmental pollution (littering and poor storage of waste)	Waste management should be handled in accordance with the International Finance Corporation (IFC) standards as follows: – Implement a waste management plan covering all aspects of waste generated on site. – Training and toolbox talks about the importance of waste management. – Ensure high standard of housekeeping across the site. – Solid waste shall be stored in an appointed area in covered, tip-proof metal drums/skips for collection and disposal to an approved waste management site. – The waste storage areas shall always be kept clean and tidy. – Storage of domestic waste on site may result in the attraction of unwanted scavengers and should be removed as soon as it is feasible. – Implement the waste management hierarchy across the site: Avoid, reuse, recycle, then the disposal. – Return packaging of hazardous and non-hazardous materials (wherever possible), such as empty bags for reuse. – Solid wastes should be deposited/emptied on a regulate basis. – See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers. – Liaise with the governing body (municipality/council) regarding the waste and handling of hazardous waste, and – Hydrocarbon and chemical contaminated solids have the potential to cause contamination of the soil, ground and or surface water, thus correct storage and disposal methods are required.	– Daily	– All staff members

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
Job creation, skills development and business opportunities	Beneficial socio-economic impacts on a local and regional scale	– Maximise local employment and local business opportunities – Enhance the use of local labour and local skills as far as reasonably possible – Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible.	– Monthly	– General manager /Proponent

6 IMPLEMENTATION OF THE EMP

The charcoal plant operation work will be carried out in compliance with the relevant regulations. No significant impacts are anticipated for the activities that have been identified and management and mitigation measures are in place for potential risks.

This EMP:

A. Has been prepared pursuant to a contract with the proponent;

B. Has been prepared on the basis of information provided to ECC up to November 2020;

C. Is for the sole use of the proponent, for the sole purpose of an EMP;

D. Must not be used (1) by any person other than the proponent or (2) for a purpose other than an EMP; and

E. Must not be copied without the prior written permission of ECC.

ECC has prepared the EMP on the basis of information provided by the proponent and desktop study.

APPENDIX A – MUNICIPALITY FITNESS CERTIFICATE

Municipality Of Outjo

*7 Hage G. Geingob Ave. * P.O. Box 51 Outjo, Namibia*
*Tel. 09-264-67-313013 * Fax 09-264-313065*
E-mail: info@outjomun.com.na

Date: 19/04/2020

License to do Business in the Municipal area of Outjo

CERTIFICATE OF FITNESS & REGISTRATION

No: 636/2020

Name of Business:	**ALFA CHARCOAL**
Type of Registration:	**Charcoal Production**
Manager:	**Johan Leijenaar**
Business Address:	**P.O Box 81169, Outjo**
Plot no.	**Erf 636 Industrial Area, Outjo**

Issue on the following conditions: **None**

This certificate expires on: 31st of March **2021**

2020 -05- 19

DATE ..... TOWN HEALTH OFFICER .....

This certificate does not exempt the holder from obtaining a trading license, permit or any other document, which are required by law.

APPENDIX B – ECC CVS

CURRICULUM VITAE

STEPHAN BEZUIDENHOUT

Name of Consultant:	Stephan Bezuidenhout
Position / Profession:	Managing Member & Senior Environmental Practitioner
Date of Birth:	11 April 1989
Nationality:	Namibian
Professional Memberships:	EAPAN, FSC Environmental Chamber, NCE, NCA, N-BiG
Email:	stephan@eccenvironmental.com
Website:	www.eccenvironmental.com
Contact:	+264 81 262 7872

QUALIFICATIONS:

University of Pretoria:	**2011 – 2012**	Postgraduate Degree in Environmental Management and Analysis
University of Stellenbosch:	**2007 – 2010**	Bachelor of Applied Science

PROFILE:

ECC's proudly Namibian Principal leads the ECC team as the lead Environmental Practitioner with a strong and dedicated environmental background. Mr Bezuidenhout has leading practical experience in Identifying and applying legislative requirements to proposed projects. Identifying impacts and mitigations for projects within different sectors, including mining, energy, agriculture and construction.

KEY AREAS OF EXPERTISE:

Agriculture and Ecology	-	Aftercare, rehabilitation & restoration methodology & implementation Forest Stewardship Counsil (FSC) implementation and compliance
Environmental (and social) Impact Assessments (EIAs) (ESIAs) & Environmental Management	-	Compiling EIA Reports and EMPs Coordinate and review specialist studies Review EIA reports Environmental Management Systems (EMS) Public Participation & Stakeholder Management
Project Management	-	Management of teams through Southern Africa for various projects

LANGUAGES:

	Read	Write	Speak
English	Excellent	Excellent	Excellent
Afrikaans	Excellent	Excellent	Excellent

SUMMARY OF EXPERIENCE AND CAPABILITY:

Since 2010, Stephan has been working as an environmental assessment practitioner. Stephan has a strong ecological background and has gained more than ten years' experience in the environmental industry. As a lead practitioner, Stephan has successfully driven environmental impact assessments and compliance assessments within Southern Africa. His hands on and practical experience and knowledge of international standards, such as FSC, IFC and World Bank standards allows Stephan to advise his clients and teams constructively and effectively.

PROJECT EXPERIENCE

PROJECT	DATE	ROLE
Best Practice Guide: Environmental Principles for Mining in Namibia	2017 - 2019	Team member
The FSC National Forest Stewardship Standard of Namibia	(2018-2020)	Part of the working group who compiled the National Standard for Forest Stewardship Council (FSC) in Namibia allowing for a higher rate of certification and improved compliance.
Jumbo Charcoal FSC Group Scheme Management	2015 - 2020	Jumbo Charcoal FSC Group Scheme Management
Biophysical Rehabilitation Plan for ML 42, 43, 44 and 45 as well as an overarching 5-year Biophysical Rehabilitation Plan for Namdeb	2018 - 2019	Part of the ECC team who completed the reporting and aided in the implementation of the Biophysical Rehabilitation Plans for Namdeb.
ESIA amendment for B2Gold Namibia Mining Licence (ML 169) to developed underground working for the Otjikoto (gold mine)	2018 - 2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement, PPP and report review).
Kunene Regional Counsel sustainable water supply Pipeline and Ancillary works	2017 - 2018	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement, PPP and report review).
ESIA application for B2Gold Namibia 10.8 megawatt PV solar upgrade to the B2Gold Power Plant	2017 - 2018	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement, PPP and report review).
ESIA application for Otjiwarongo Wastewater Treatment and Bulk Water Supply	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement, PPP and report review).
ESIA for the Wastewater Treatment facilities for Gondwanan Collection	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement, PPP and report review).
MAWF permit application for Water Abstraction and Discharge for Gondwanan Collection	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement, PPP and report review).
EIA application for various exploration activities for Votorantim Metals Namibia Pty Ltd	2018 - Present	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement, PPP and report review).