




ECC-45-365-REP-06-D

ENVIRONMENTAL MANAGEMENT PLAN

FOR THE CONSTRUCTION OF A BASE TRANSCEIVER STATION AND ASSOCIATED INFRASTRUCTURE FOR PARATUS TELECOMMUNICATIONS (PTY) LTD ON ERF 361 IN BRAKWATER WITHIN THE KHOMAS REGION, NAMIBIA.

PREPARED FOR

FEBRUARY 2022

ENVIRONMENTAL COMPLIANCE CONSULTANCY CC/2013/11404
1 JAN JONKER WAY KLEIN WINDHOEK NAMIBIA|PO BOX 91193 WINDHOEK NAMIBIA
WWW.ECCENVIRONMENTAL.COM

TITLE AND APPROVAL PAGE

Project Name:	The proposed construction of a base transceiver station and associated infrastructure for Paratus Telecommunications (Pty) Ltd on Erf 361 in Brakwater within the Khomas Region, Namibia.
Project Number:	ECC-45-365-REP-06-D
Client Name:	Paratus Telecommunications (Pty) Ltd
Authors:	Diaan Hoffman, Lester Harker and Stephan Bezuidenhout
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Environmental Compliance Consultancy Contact Details:

We welcome any enquiries regarding this document and its content, please contact:

Stephan Bezuidenhout
Environmental Compliance Consultancy
Office: +264 81 669 7608
Email: stephan@eccenvironmental.com
www.eccenvironmental.com

Jessica Bezuidenhout (Mooney)
Environmental Compliance Consultancy
Office: +264 81 669 7608
Email: jessica@eccenvironmental.com
www.eccenvironmental.com

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DEFINITIONS AND ABBREVIATIONS

ABBREVIATIONS	DESCRIPTION
DEA	Directorate of Environmental Affairs
ECC	Environmental Compliance Consultancy
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
ESIA	Environmental Social Impact Assessment
HSE	Health Safety and Environment
I&APs	Interested and Affected Parties
IFC	International Finance Cooperation
ILO	International Labour Organisation
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
MSDS	Material Safety Data Sheets
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
SANS	South African National Standards
WHO	World Health Organisation

1 INTRODUCTION

1.1 BACKGROUND TO THE PROPOSED PROJECT

Paratus Telecommunications (Pty) Ltd (hereinafter the proponent) proposes to construct a base transceiver station and associated infrastructure on Erf 361 in Brakwater which lies to the north of Windhoek within the Khomas Region.

The site lies to the left, or west side of the B1 highway (turning onto the D1473 road) when travelling in a northern direction from Windhoek (en route to Okahandja). The proposed site location can be seen in Figure 1 and is situated approximately 12 km north of Windhoek.

The proposed tower will be constructed on the same Erf as the Armada Data Centre, which is currently under construction. The data centre is required to meet the Paratus business vision/requirements driven by customer demand for high-end data centre services within Namibia, especially in the Windhoek area. The proposed communication tower is needed to increase the network coverage in Brakwater, which will accelerate the use and development of information communication technology in the proposed area and Namibia at large. In addition, the Project will provide employment opportunities to the local people through the construction works and continued maintenance of the structures.

The proposed construction phase will include low-impact and non-intrusive activities. The following activities are planned for the proposed project:

- Minor ground preparation (trenches and levelling) of the site;
- Storage and stockpiling of material for the construction of the tower;
- Construction of the tower; and
- Installation of cables and wiring.

During normal operations, the telecommunication infrastructure will require very little intervention. Inspections will be frequently conducted by the site manager. The telecommunication infrastructure will be maintained by the proponent to ensure its longevity and secure current and potential future use.

1.2 REGULATORY REQUIREMENTS AND BEST PRACTICE METHODS

This EMP has been developed in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 and its regulations.

Legislation that should be adhered to includes the following listed in Table 1.

The International Finance Corporation (IFC) Environmental, Health, and Safety Guidelines for Telecommunications (Published Environmental, Health, and Safety (EHS) Guidelines) is an excellent best practice to follow, which can minimise any potential impacts with the installation.

Table 1: Applicable laws, regulations and best practice methods

NATIONAL REGULATORY REGIME	RELEVANCE TO THE PROJECT
Constitution of the Republic of Namibia of 1990	Social protection
Communications Act, No. 8 of 2009 and relevant regulations	Relevant to communication projects
The Aviation Act, No. 74 of 1962 and Namibian Civil Aviation Regulations	Relevant authority
The Atomic Energy and Radiation Protection Act, No. 5 of 2005 & Non-Ionising Radiation Regulations No. 126 of 2020.	Social Protection
Atmospheric Pollution Prevention Ordinance 11 of 1976	Social and Biophysical landscape protection
Environmental Management Act, No. 7 of 2007 and its regulations, including the Environmental Impact Assessment Regulations, No. 30 of 2012	Environmental Management
Soil Conservation Act, No. 76 of 1969 and the Soil Conservation Amendment Act, No. 38 of 1971	Biophysical protection
Local Authorities Act, No. 23 of 1992 and its regulations (Building and waste management regulations).	Biophysical and Social protection
Water Act, No. 54 of 1956	Water source protection
Labour Act, No. 11 of 2007 and regulations relating to the Health and Safety of Employees at Work (No. 156 of 1997)	Social protection
Hazardous Substances Ordinance Ordinance No. 14 of 1974	Biophysical landscape protection
IFC STANDARDS	**POSSIBLE RELEVANCE**
Performance Standard 1	Assessment and Management of Environmental and Social Risks and Impacts
Performance Standard 4	Community Health, Safety, and Security

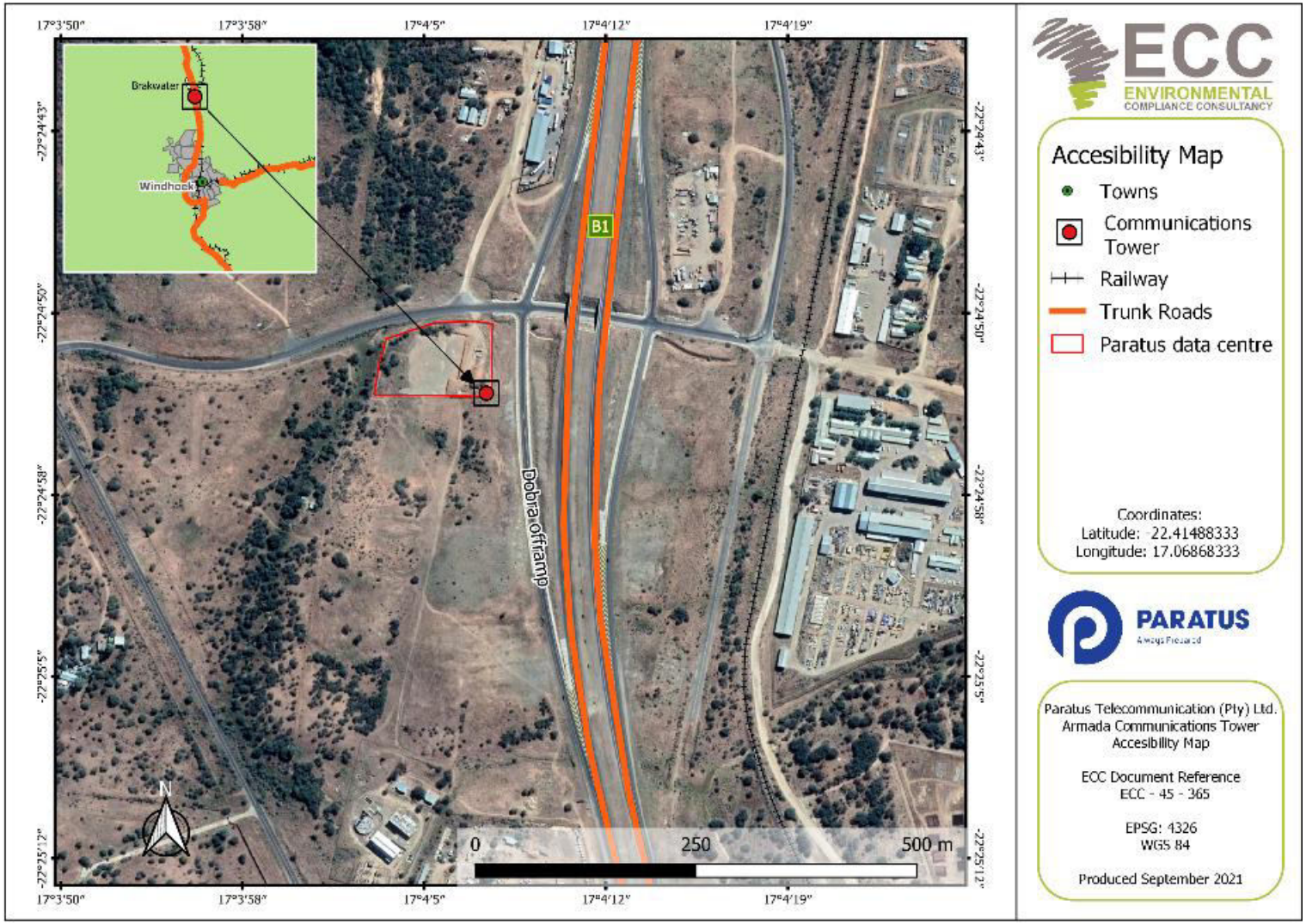

Figure 1: Location of the proposed communication tower

1.3 Purpose and Scope of this Report

This EMP provides a logical framework, proposed mitigation measures and management strategies for the activities associated with the proposed project. Together, these EMP and Management Activities help ensure 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 that management arrangements are effectively and appropriately implemented.

This EMP is a live document and shall be reviewed at predetermined intervals, or updated when the scope of work alters, or when further data or information can be added. 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 construction and operational stages of the project.

1.4 Management of this EMP

The proponent will be responsible for the implementation and management of this EMP. Before the commencement of the project, this EMP shall be reviewed, amended as required and approved for 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.

1.5 Limitations, Uncertainties and Assumptions of this EMP

This EMP does not include a full list of measures for compliance with statutory occupational health and safety requirements. This will be provided in the safety management plan to be developed by the proponent independently.

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.

The information contained in this EMP has been based on the project description as provided by the proponent. Where the project methods alter, this EMP may require updating and potential further assessment undertaken.

1.6 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 interest in the proposed project except 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 and undertake the construction and operation activities, which shall be composed of the proponent's personnel and contractors. A nominated role shall be identified to ensure the management and implementation of this EMP throughout the project is carried out, 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, in writing, 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 below. The key personnel and environmental responsibilities of each role throughout the project life are presented in Table 2.

Table 2: Roles and responsibilities

ROLE	RESPONSIBILITIES & DUTIES
General Manager (Proponent)	- 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 EMP management, maintenance, and revision; - Maintain community issues and concerns register and keep records of complaints, actiions, and responses provided; - 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 facility;

ROLE	RESPONSIBILITIES & DUTIES
	– 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.
Foreman (Appointed HSE responsible person}	The Armada data centre/communication tower foreman will be responsible for the implementation of the EMP for the facility. The foreman will be available, as required, throughout the operation of the facility and are responsible for the following roles: – 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; – Weekly checklists must be completed by the foreman and findings submitted to the general manager; – Monthly EMP checklists must be completed by the foreman. Findings are to 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 facility; and – Timely distribution of any relevant environmental documentation, including revisions to this EMP to all staff. – Responsible for compliance with/adherance to the EMP at all times; – Ensuring they have undertaken a site induction and are conversant with the requirements of this EMP; 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 for operation or maintenance activities at the facility 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, the 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 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 hired must be provided with a valid employment contract stating the position hired for, and the hourly remuneration offered.

3 COMMUNICATION AND TRAINING

It is important that regular communication is 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 concerning the EMP.

3.1 COMMUNICATIONS

The foreman 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 project 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 construction and operational activities, communication amongst 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 foreman 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 emergency services, the following services should be contacted.

Table 3: Emergency contact details

TOWN	AMBULANCE	POLICE	FIRE BRIGADE
Windhoek	+264 (61) 21-1111	+264 (61) 1-0111	+264 (61) 21-1111

There is a 36 000 Liter diesel tank that will be constructed as part of the Armada Data Centre (the proponent is in the process of applying for a consumer installation certificate from MME); For large-scale spills (greater than 200 litres) 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) as well as the MME by completing form PP/11. All correspondence with MEFT/MME should be undertaken by the general manager as guided by the foreman.

3.3 Complaints Handling and Recording

The proponent shall maintain a complaints register that will detail the name and contact details of the complainant, the date and time of the complaint, the nature of the complaint, the appropriate action taken to resolve issues, and the 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 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 facility 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 are 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 be 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 facility;
  - 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 concerning implementing the EMP;
- The sites environmental and health and safety rules;
- Details of how to deal with, and who to contact if environmental problems occur;

- 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 throughout the project and shall be available upon request. It is the responsibility of the foreman to enforce the provisions of this EMP and ensure this EMP is complied with by all personnel daily throughout the facility. Daily, weekly and monthly inspections will be undertaken. Any environmental problems or risks identified shall be notified to the foreman 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 general manager.

4.2 Relevant Permit

Table 4 below lists the permits and licenses that are required for the proposed project.

In addition to the permits and licences mentioned in **Error! Reference source not found.**, the f ollowing form(s) has been completed for erecting a permanent structure: FSS-AGA-FORM-032 (permanent structures). The form was submitted to Namibia Civil Aviation Authority (NCAA) and approval has been obtained from the executive director for the erection of the proposed tower.

Table 4: Permits and licences required by Paratus for this project

PERMIT/LICENCE	RELEVANT AUTHORITY	VALIDITY
Class Comprehensive Telecommunications Service License (ECS &ECNS)	Communications Regulatory Authority of Namibia	5 Years
Spectrum Use Licenses	Communications Regulatory Authority of Namibia	1 Year
Broadcasting Service License for Signal Distribution	Communications Regulatory Authority of Namibia	5 Years

4.3 NON-COMPLIANCE

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 or situation, for example, is considered if:

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

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

4.4 INCIDENT REPORTING

The general manager must ensure that an accident and incident (including minor or near-miss) reporting system is maintained by the foreman 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 and kept safe.

The foreman 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 will use this register to undertake monthly inspections to ensure the project is compliant with this EMP.

5.2 Objectives and Targets

Environmental protection is the responsibility of 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 on the proposed site 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
- Effective and efficient use of natural resources.

5.3 Register of Environmental Risks and Issues

An environmental review of the proposed project has been completed to identify all the commitments and agreements made within the environmental scoping report. From this, a schedule of environmental commitments and risks has been produced (Table 5), which details deliverables including measures identified for the prevention of pollution or damage to the environment during the project's lifetime.

Table 5 provides a register of environmental risks and issues, which identifies mitigation and monitoring measures, as well as the person responsible for enacting the measures. 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 5: Environmental and social risks and issues, and mitigation and monitoring measures

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY

General construction and operational activities	Noise nuisances may be felt within and surrounding the data centre, during construction and maintenance activities.	– Ensure noise levels are maintained within the Health and Safety of Employees at Work regulations' and International Labour Organisation (ILO) occupational exposure limit of 85 dB (Warning Limit) and a danger limit of 90 dB;
		– Ensure noise levels are maintained within the SANS standard for environmental noise, which is 70 dB (outdoors) and 60 dB (indoors) in an industrial district;
		– Avoid noise-generating activities that could impact other users of the area; i.e., hammering on metal that generates intermittent noise especially at night, and ensure appropriate measures are put in place to rectify noise complaints should they occur;
		– Ensure that procedures for receiving complaints from nearby land users or residents to be in place and responded to timeously.
		– Noise should be minimised during construction work. The following measures should apply:
		  – Limit working hours to 7 am to 5 pm weekdays and 7 am until 1 pm on Saturday o Regular maintenance of equipment;
		  – All equipment to be shut down or throttled back between periods of use; and
		  – Hearing protection should be provided to employees operating equipment that produces excessive noise.
			Daily	Project manager

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
	Dust generation causes air pollution and possibly affects employee/contractors health during the construction.	To minimise the potential for dust generation during construction the following management measures should be implemented, as required: – Vehicles must adhere to speed limits to avoid producing excessive dust within and around the site; – Vehicles and machinery should be maintained to limit exhaust fume emissions; – Construction activities (i.e., cement mixing) should be well managed to reduce dust generation; – Use surfaces that minimise dust accumulation and facilitate effective cleaning; – Where an effect is profound, ensure dust suppression measures are in place; and – Employees/Contractors to use and wear the appropriate PPE.	Daily	Project manager
	Occupational Health and Safety	Labour Act, No. 11 of 2007 and regulations relating to the Health and Safety of Employees at Work (No. 156 of 1997) should be closely followed and all relevant sections adhered to. The IFC Environmental, Health, and Safety Guidelines for Telecommunications should also be followed as a best practice, according to these guidelines the following occupational health and safety issues are mainly seen with telecommunications projects: Electrical safety, Electromagnetic fields (occupational), Optical fiber safety, Elevated and overhead work, Fall protection, Confined space entry and Motor vehicle safety. – Ensure that health and safety measures and mitigations are enforced on-site according to the site-specific H&S management	Daily, weekly, monthly, annually	Manager / HSE officer

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		plan (the proponent will be responsible to develop and implement an H&S management plan); – For specific duties, the appropriate PPE (i.e., harnasses when working at heights) should be worn at all times; – Safety induction training sessions should be given to all technicians and field staff before commencement of their shifts; – Risk identification and suitable prevention measures should be employed within the facility area to eliminate potential impacts; – All occupational health-related complaints should be recorded and appropriate action to be taken to resolve potential issues; – Occupational Incidents and accidents on-site should be reported to the division: Occupational Safety & Health (OSH) at the Ministry of Labour, Industrial Relation and Employment Creation, by using form F.5; – Emergency contact details should be readily accessible to contact relevant services during an emergency; – Appropriate signs should be set up on-site, where there might be an occupational risk, i.e., signs noting employees and customers of stairs, poor lighting, small/sudden steps, heights, wiring etc; – Portable signs should also be available on-site, i.e. when floors are wet, when using chemicals, for construction and maintenance etc; – There should at all times be an employee/appointed HSE officer/foreman with up to date first aid training on-site; – In the unlikely event of a death occurring on-site from occupational negligence or otherwise from a "freak accident event", the area should be secured and removing all personnel from the scene;		

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– A root cause analysis into the event should be undertaken as soon as practicably possible; – Counselling should be provided to the witnesses and other personnel members who may have been impacted by the event. – All occupational health-related complaints should be recorded; – If any occupational health-related complaints are received and a risk assessment indicates that RF radiation may be a potential risk, EMF radiation should be measured and monitored by a registered occupational hygiene/health and safety monitoring body to determine whether the exposure is within recommended exposure limits; – Shorter shifts could be implemented to reduce exposure time; – RF radiation should be kept within the recommended exposure limits as specified in the Atomic Energy and Radiation Protection Act, No. 5 of 2005: Non-Ionising Radiation Regulations No. 126 of 2020; and – In partnership with relevant stakeholders, provide awareness campaigns about the effects of non-ionising electromagnetic fields on human health.		
	Site Safety and Security	– The site should be well secured to prevent theft or vandalism and unauthorized entrance to the premises, which could be ensured by having a security guard at the gate and facility entrance, security cameras and security fence/wall around the facility; – Contractors and staff should be informed in writing of the consequences when breaking law or rules; – Contractors or staff should not trespass on private land;	Daily, weekly, monthly, annually	Manager, employees

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– Security systems should be well maintained; – All employees should be regularly updated about the safety procedures; and – Emergency contact details should be readily available on-site.		
	Infrastructure Lighting	– Light disturbances should be minimised; – Lighting on-site is to be sufficient for safety and security purposes; and – Lighting should not be a nuisance for any businesses/residents/camps or lodges surrounding the facility.	Monthly, annually	Manager
Community and environment	Construction of the BTS might increase the probability of complaints Visual disturbance to the nearest neighbours and the entire community	– Engage with the surrounding communities and/or all stakeholders, especially the nearest neighbours about the construction activities; – In partnership with relevant stakeholders, provide awareness campaigns about the effects of non-ionising electromagnetic fields on human health; – Ensure the construction of the BTS blends in with the natural environment as far as reasonably practicable; – Aircraft warning lights should be directed in the right directions and angles, to minimise disturbances to residents; – Ensure that the International Commission on Non-Ionizing Radiation Protection (ICNIRP), IFC guidelines, and precautionary principles, as well as other applicable legal frameworks and regulations, are adhered to.	Monthly, annually	Manager
Waste management	Environmental pollution (littering and	– Waste management should be handled by following the International Finance Corporation (IFC) standards as follows:	Daily, weekly, monthly	All staff members

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
	poor storage of solid waste) – during the construction phase and maintenance.	– Implement a waste management plan (from "cradle to grave" methodology) covering all aspects of waste generated on-site; – Training and toolbox talk about the importance of waste management; – Ensure a 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 dispose of; – Return packaging of hazardous and non-hazardous materials (wherever possible), such as empty bags for reuse; – Solid wastes should be deposited/emptied regularly; – 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; – 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;		

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
Biodiversity on-site	The possible encountering of biodiversity on-site	The Nature Conservation Ordinance Act No. 4 of 1975 and its regulations, Controlled Wildlife Products and Trade Act 9 of 2008 and the Animals Protection Act 71 of 1962 should be closely followed with regards to any biodiversity encounters on-site. – No mammals, birds, reptiles, amphibians etc. should be killed or harmed on-site; – No animal should be killed or removed from the site by anyone other than by a professional/registered animal handler, pest control company, SPCA, MEFT/MAWLR or relevant rehabilitation or wildlife organisations. – If snakes are encountered on-site or found within the proposed site, employees should stay clear of the room/area where the snake was seen, and a professional snake handler should be contacted to safely remove the snake; – Nests discovered on infrastructure within the site should not be removed or destroyed if it is not clear that there are no eggs or chicks in the nests; – Nests/eggs/birds should be identified by a professional and action could be taken depending on advice or instruction given by the professional; – Pesticides and herbicides should not be used as far as reasonably possible; – If there is no other possibility the relevant pesticides/herbicides/chemicals should be used by a professional/registered pest control company and the MSDS of the substance used should be closely followed;	Daily, Weekly	All staff members

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– If a wild animal expected of having rabies (foam by mouth or unusual behaviour) is spotted/encountered on or near the site MEFT/the City of Windhoek should be contacted to safely remove the animal; – Waste on-site should be well managed and removed from the site to prevent animals (i.e. rodents, snakes, scorpions etc) from breeding/living on-site; and – "Flappers" shiny rotating devices could be used on roofs or other site infrastructures to repel birds.		
Avifauna	Possible bird collision due to the erection of the communication structure.	– The BTS and associated infrastructure have no major impacts, however, should any concerns arise during the BTS and associated infrastructure monitoring in the future the following should apply: – Monitor to help provide more scientific confirmation of collision data (rates, sites and associated weather conditions) and thereby increase the future predictability of such occurrences as a basis for marking – Should collisions still take place after mitigation, other methods should be considered; – More stringent and regular monitoring is recommended; – Could potentially add objects (i.e., "Flappers", which are reflective rotating devices) to the tower that will be able to divert birds away from the structures, especially areas where materials are thin and potentially difficult to see; – Audible frequencies (4 to 6 kHz) could be broadcasted from the tower to divert birds from the tower;	Daily, weekly, monthly	Manager

TASK ACTIVITY/ EQUIPMENT	IMPACT IDENTIFIED	MITIGATION CONTROL MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– Lighting on the tower should preferably be a colour that does not attract insects, to prevent nocturnal birds from flying into the structures; and – The "Flappers" could also be glow in the dark to make it visible for birds at night.		
Soil	Potential soil erosion during heavy precipitation or strong winds on-site. Soil pollution through waste and hazardous substances utilized during construction spilling on the ground	– Indigenous vegetation could be planted to prevent erosion; – Rock beds could also be used to prevent erosion on the gentle slopes around the buildings; – An erosion control plan should be implemented on-site due to the relief of the site (draining to the small stream to the west of Erf 361) and due to the vegetation that has been cleared; – Any spills and waste should be cleaned up immediately; – A 'good housekeeping' policy will be adopted across the construction and maintenance working areas; – Under no circumstances should oil or other substances be permanently disposed of on-site; and – Minimise the disturbance and removal of topsoil.	Monthly, annually	Manager
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; and – Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible.	Monthly, annually	Manager/ Proponent

6 DECOMMISSIONING

If the communication tower is not used anymore (and if ownership is not transferred), the proponent and the City of Windhoek should mutually agree on the way ahead for the site and the 48-meter high tower on-site. If the City of Windhoek has no use or plan for the site or buildings on-site the proponent will be responsible to remove all products, chemicals, fuel or any other materials from the site. If infrastructure is removed during decommissioning it is recommended that the proponent implement a rehabilitation plan for the site, to ensure that the site is safe and that no further degradation to the site can occur.

7 IMPLEMENTATION OF THE EMP

The Armada communication tower construction and operation work will be carried out in compliance with the relevant regulations and best practice methods. Through the scoping process, it was determined that there was no potential environmental risk that requires further specialist studies and assessment. The identified impacts on the environment were found to be minor to moderate, due to the location of the proposed site. The main impacts of concern are with regards to community and employee health and safety, visual disturbances and a potential collision risk for avifauna. Various mitigation measures have been identified and listed for implementation in the EMP to avoid and/or reduce impacts as far as reasonably practicable, as well as to ensure the environment is protected and unforeseen effects and environmental disturbances are avoided.

This EMP:

A. Has been prepared according to a contract with the proponent;
B. Has been prepared based on information provided to ECC up to November 2021;
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 based on information provided by the proponent.