



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



ECC-90-302-REP-06-A

## **ENVIRONMENTAL MANAGEMENT PLAN**

**EXPLORATION ACTIVITIES ON EPL 7769**

FOR BASE AND RARE METALS, DIMENSION STONES, INDUSTRIAL MINERALS AND  
PRECIOUS METALS, IN THE HARDAP AND KHOMAS REGIONS

PREPARED FOR JIN PENG INVESTMENTS (PTY) LTD

DECEMBER 2020

## TITLE AND APPROVAL PAGE

<b>Project Name:</b>	Environmental Management Plan for Exploration activities on EPL 7769 for Base and Rare Metals, Dimension Stones, Industrial Minerals, and Precious Metals, Hardap and Khomas regions.
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*Please note at ECC we care about lessening our footprint on the environment; therefore, all documents are printed double sided.*

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## DEFINITIONS AND ABBREVIATIONS

ECC	Environmental Compliance Consultancy
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
EPL	Exclusive Prospecting Licence
MEFT	Ministry of Environment, Forestry and Tourism



# 1 INTRODUCTION

## 1.1 BACKGROUND TO THE PROPOSED PROJECT

Environmental Compliance Consultancy (ECC) has been engaged by the proponent (Jin Peng Investments (Pty) Ltd) to undertake an Environmental Impact Assessment (EIA) and an Environmental Management Plan (EMP) in terms of the Environmental Management Act, No. 7 of 2007 and its regulations. An application for an environmental clearance will be submitted to the relevant competent authorities, the Ministry of Mines and Energy (MME) and the Ministry of Environment, Forestry and Tourism (MEFT).

Jin Peng intends to undertake mineral exploration activities in Namibia. The proposed exploration activities will be undertaken on EPL 7769 for base and rare metals, dimension stones, industrial minerals, and precious metals with a priority focus placed on dimension stones. The proposed project area lies mainly in the Hardap region, with a smaller portion of the EPL transcending into the Khomas Region. The proposed project area surrounds the Rehoboth town and can be accessed via the B1 and C25 roads. EPL 7769 is located approximately 5 km south of the Uisib settlement and 1 km northern of the Rehoboth Town (Figure 1).

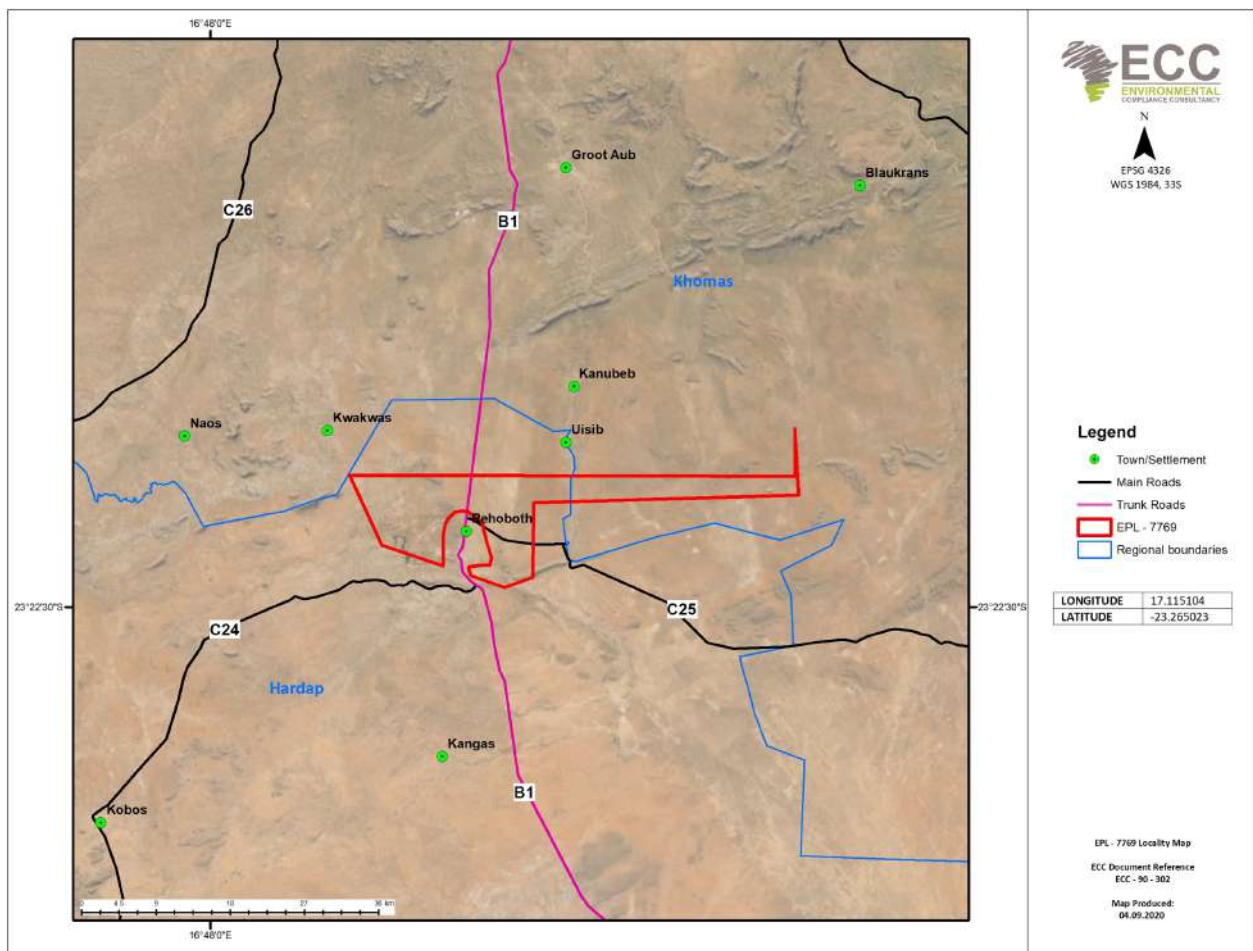


FIGURE 1 - LOCATION OF EPL 7769

Figure 2 shows a close-up image (circled in white) of the focus area on which exploration activities are proposed to be undertaken.

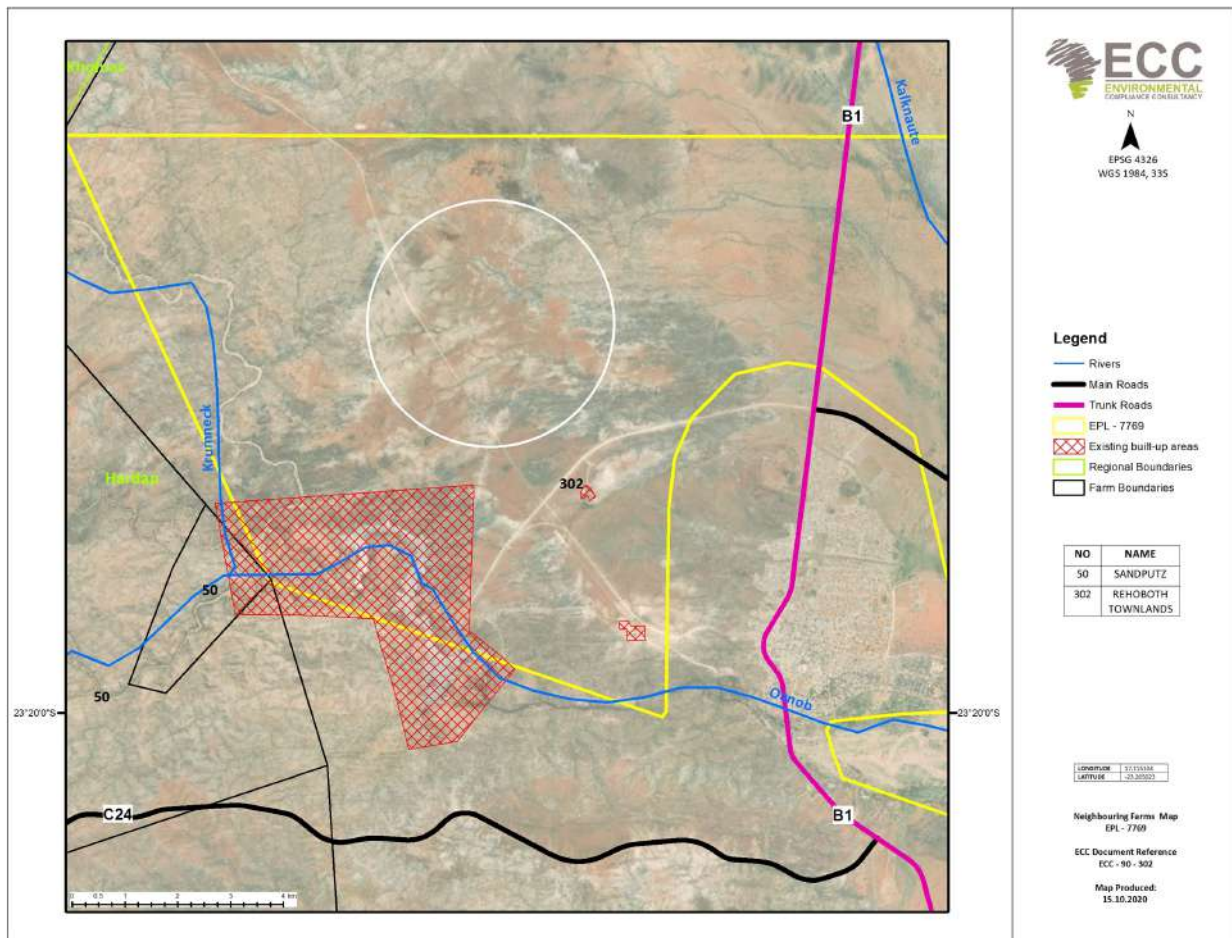


FIGURE 2: CLOSE-UP OF THE FOCUS AREA FOR EXPLORATION ACTIVITIES

## 1.2 ENVIRONMENTAL REGULATORY REQUIREMENTS

The proposed project is considered as a listed activity as stipulated in the Environmental Management Act, No. 7 of 2007 and the Environmental Impact Assessment Regulation, No. 30 of 2012. As a listed activity an application for an environmental clearance certificate is required. An Environmental Scoping Report and EMP are required as part of the environmental clearance certificate application, as well as to support the decision-making process. This report presents the EMP and has been undertaken in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 and its regulations.

## 1.3 PURPOSE AND SCOPE OF THIS REPORT

This EMP provides a logical framework, proposed mitigation measures and management strategies for the exploration activities associated with the proposed project, 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 forms an appendix to the environmental scoping report and has been based on the findings of the assessment; therefore, the environmental scoping report should be referred to for further information on the proposed project, assessment methodology, applicable legislation, and assessment findings.

This EMP is a live document and shall be reviewed at predetermined intervals, or updated when the scope of works alters, or when further data / 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 exploration stage in search of base and rare metals, dimension stones, industrial minerals and precious metals on EPL 7769.

#### 1.4 MANAGEMENT OF THIS EMP

The proponent, Jin Peng (Pty) Ltd, will hold the environmental clearance certificate for the proposed project and shall be responsible for the implementation and management of this EMP. Prior to the exploration activities, 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.

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

#### 1.5 LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS OF THIS EMP

This EMP does not include 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.

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 in the environmental scoping report. Where the design or exploration methods alter, this EMP may require updating and potential further assessment undertaken.

#### 1.6 ENVIRONMENTAL CONSULTANCY

Environmental Compliance Consultancy, a Namibian consultancy 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.

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## 2 PROJECT MANAGEMENT PERSONNEL

The proponent shall provide a project team to oversee and undertake the preparation and exploration 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 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 1 - ROLES AND RESPONSIBILITIES

ROLE	RESPONSIBILITIES & DUTIES
<b>Proponent</b>	<ul style="list-style-type: none"> <li>– Takes overall responsibility for the implementation and management of this EMP;</li> <li>– Ensure the environmental policy is communicated to all personnel throughout the proposed project and ensure that employees, contractors and visitors understand and adhere to the EMP;</li> <li>– Responsible for providing the required resources (including financial and technical) to complete the required tasks;</li> <li>– Appoint supervisors such as an exploration (project) manager and a site manager;</li> <li>– Ensure that all employees, contractors and visitors are inducted on safety measures.</li> </ul>
<b>Exploration Manager</b>	<ul style="list-style-type: none"> <li>– Responsible for ensuring compliance with this EMP including overseeing all day to day activities during the duration of the project, including routine and non-routine maintenance works, as well as the decommissioning of the project;</li> <li>– Ensure adequate resources are made available for implementation of this EMP;</li> <li>– Responsible for the management, maintenance and revisions of this EMP;</li> <li>– Ensure all personnel are aware of the commitments made in this EMP and any other relevant regulatory requirements applicable to the project;</li> <li>– Ensure all employees and contractors participate in a site induction process prior to commencing work on the project;</li> <li>– Maintain the community issues and concern register, and keep records of complaints;</li> <li>– Ensure that best environmental practice is undertaken throughout the duration of the project; and</li> <li>– Report any non-compliance or accidents to the regulatory authority.</li> </ul>
<b>Site Manager (or nominated supervisor)</b>	<ul style="list-style-type: none"> <li>– Ensure that all employees, contractors and visitors to the site are conversant with the requirements of this EMP, relevant to their roles on site and adhere to this EMP at all times;</li> </ul>

ROLE	RESPONSIBILITIES & DUTIES
	<ul style="list-style-type: none"> <li>- Provide environmental awareness / management training and site inductions for all employees, contractors and visitors;</li> <li>- Monitor daily operations and ensure adherence by personnel to the EMP;</li> <li>- Receive, respond to and record complaints; and</li> <li>- Report any non-compliance or accidents to the explorations (project) manager.</li> </ul>
<p><b>Employees (and contractors and visitors where applicable)</b></p>	<ul style="list-style-type: none"> <li>- Responsible for being compliant with this EMP throughout the project;</li> <li>- Adhere to this EMP at all times;</li> <li>- Ensure attendance of site inductions;</li> <li>- Ensure appropriate briefings for certain activities have been provided and are fully understood; and</li> <li>- Report any operations and conditions that deviate from the EMP or any non-compliant issues or accidents to the site manager and exploration manager.</li> </ul>

## 2.2 CONTRACTORS

Any contractors hired during the exploration activities or for any accessory works for the project, or contractors appointed for maintenance activities, 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 management measures;
- Reporting of environmental issues, including actual or potential environmental incidents and hazards, to the Exploration Manager; and
- Ensuring appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported.

## 2.3 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 hired must be provided with a valid employment contract stating, the position hired for, the hourly remuneration offered.

### 3 COMMUNICATION AND TRAINING

In order to ensure potential risks and impacts are minimised, it is vital that personnel are appropriately informed and trained on operational procedures that include the above mitigation measures. It is also important that regular communications are maintained with all the stakeholders 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

During exploration, the exploration manager or site manager shall communicate any environmental issues to the project team through the following means (as and when required):

- Site induction;
- 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 exploration team including any contractors and personnel working on the exploration 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 exploration 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

Table 2 contains a list of numbers to be contacted in case of an emergency. All personnel will be made aware of these numbers.

**TABLE 2 - EMERGENCY CONTACT DETAILS**

TOWN	AMBULANCE	POLICE	FIRE BRIGADE
Rehoboth	+264 (62) 52-3811	+264 (62) 523 223	+264 (62) 52-2091

#### 3.3 COMPLAINTS HANDLING AND RECORDING

Any complaints received verbally by any personnel on the project site shall be recorded by the site manager or the receiver, including the name and contact details of the complainant, date and time of the complaint, and the nature of the complaint. The information shall be given to the exploration manager who is overall responsible for the management of complaints and will provide a written response to the complainant. The site manager shall inform the exploration manager of issues, concerns or complaints. It is the duty of the both the site manager and exploration manager to maintain a complaint register that details the name of the complainant, date and time of the complaint and action taken to resolve the issues.

The workforce shall be informed about the complaints register, its location and the person responsible, in order 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 duration of the project 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 exploration manager 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 “environment” and “social”,
  - o Why the environment needs to be protected and conserved,
  - o How exploration activities can impact on the environment, and
  - o What can be done to mitigate against such impacts.
- 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;
- Noise control measures for drilling in proximity to residents;
- 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 exploration manager to ensure this EMP is complied with through their daily roles. Daily, weekly and monthly inspections will be undertaken. Any environmental problems or risks identified shall be notified to the exploration manager and actioned as soon as is reasonably practicable.

#### 4.1.2 MONTHLY COMPLIANCE MONITORING

Monthly inspections shall be undertaken by the exploration 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 exploration manager.

### 4.2 ENVIRONMENTAL PERMITS

Whilst the Water Resources Management Act, No. 11 of 2013 is not enforced, it is best practice to adhere to its stipulations while ensuring compliance with the Water Act, No. 54 of 1956, which is maintained still. A licence to abstract and use water may be required if boreholes are to be created, although this is unlikely. If required, the proponent will apply for relevant permits and shall operate in accordance with any conditions of the licence.

Some vegetation will be cleared on the EPL to allow exploration activities to commence. It is unlikely that an area greater than 15ha will be cleared, therefore a permit under the Forest Act, No. 12 of 2001 as amended by the Forest Amendment Act, No. 13 of 2005 and its regulations of 2015 is not required.

### 4.3 CHANCE FINDS PROCEDURES

A heritage site survey was conducted by Dr John Kinahan, an Archaeologist on a selected focus area (as identified by the proponent) on a portion of EPL 7769. Areas identified for proposed exploration activities are subject to a heritage survey and subsequent assessment. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found in the course of development work. The procedure set out here cover the reporting and management of such finds.

**Scope:** The “chance finds” procedure covers the actions to be taken from the discovery of a heritage site or item, to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

**Compliance:** The “chance finds” procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): *“a person who discovers any archaeological .... object .....must as soon as practicable report the discovery to the Council”*.

The procedure of reporting set out below must be observed so that heritage remains reported to the NHC



are correctly identified in the field.

ROLE	RESPONSIBILITIES & DUTIES
Operators and contractors	To exercise due caution if archaeological remains are found
Site manager	To secure site and advise management timeously
Proponent and Exploration managers	To determine safe working boundary and request inspection
Archaeologist	To inspect, identify, advise management, and recover remains

#### 4.3.1 PROCEDURES

Action by person identifying archaeological or heritage material:

- If operating machinery or equipment stop work
- Identify the site with flag tape
- Determine GPS position if possible
- Report findings to foreman

Action by site manager:

- Report findings, site location and actions taken proponent and exploration managers
- Cease any works in immediate vicinity

Action by proponent and exploration managers:

- Visit site and determine whether work can proceed without damage to findings
- Determine and mark exclusion boundary
- Site location and details to be added to project GIS for field confirmation by archaeologist

Action by archaeologist:

- Inspect site and confirm addition to project GIS
- Advise NHC and request written permission to remove findings from work area
- Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains, procedures are to be carried out as per the above. Moreover, a field inspection by archaeologist is to be actioned to confirm that remains are human, following a liaison with NHC and Police. Thereafter, the recovery of remains and removal to National Museum or National Forensic Laboratory, should be actioned as directed.

## 4.4 NON-COMPLIANCE

### 4.4.1 NON-COMPLIANCE EVENT

Where it has been identified that works are not compliant with this EMP, the exploration manager 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 exploration 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 exploration manager or contractor has failed to comply with corrective or other instructions issued by the exploration manager or qualified authority; or
- The exploration manager 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.

## 4.5 INCIDENT REPORTING

The exploration manager 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 exploration 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.

### 4.5.1 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 exploration manager and updated when necessary.

**The exploration manager 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 objectives for the project are as follows:

- Zero pollution incidents;
- Minimal vegetation clearing and earthworks;
- Protect local flora and fauna;
- Minimise the generation of waste; and
- Minimal interruption to farm activities.

### 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 3), which details deliverables including measures identified for the prevention of pollution or damage to the environment during exploration.

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 exploration manager and updated when necessary. The exploration manager will use this register to undertake monthly inspections to ensure the project is compliant with this EMP.

TABLE 3 - ENVIRONMENTAL RISKS AND ISSUES, AND MITIGATION AND MONITORING MEASURES

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
Access and site preparation	<ul style="list-style-type: none"> <li>- Limiting access to the farms,</li> <li>- Disruption of farm operations (leaving gates open, loss of farming area, interference at waterpoints)</li> <li>- Potential conflict with farm owners and neighbours (suspicious movement, poaching, stock theft, field fires, injury to animals, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure documented permission to enter farms,</li> <li>- Farmers should have access to all farm areas at all times,</li> <li>- Existing water points and feeding area need to be left, unaffected,</li> <li>- Use existing roads for access to avoid new tracks and cut lines, and</li> <li>- Compliance with all applicable laws and agreements and the Namibian recommended best practices for example:               <ul style="list-style-type: none"> <li>- Locate camps in existing clearings whenever possible.</li> <li>- Locate camps near existing clearings whenever possible</li> </ul> </li> </ul>	Daily	Exploration manager or site manager (or nominated site supervisor)
	Potential damage to cultural heritage sites	<ul style="list-style-type: none"> <li>- The site is not archaeologically sensitive; however, the chance-finds procedure should be implemented as a precautionary measure,</li> <li>- Raise awareness about possible heritage finds by citing the heritage survey done of the focus area,</li> <li>- Report all finds that could be of heritage importance,</li> <li>- In case archaeological remains to be uncovered, cease activities and the exploration manager has to assess and demarcate the area,</li> <li>- exploration manager to visit the site and determine whether work can proceed without damage to findings, mark exclusions boundary and inform ECC with GPS position,</li> <li>- If needed, further investigation has to be requested for a professional assessment and the necessary protocols of the Chance Find Procedure have to be followed,</li> <li>- Archaeologist will evaluate the significance of the remains and identify appropriate action, for example, record and remove; relocate or leave premises (depending on the nature and value of the remains),</li> <li>- Inform the police if the remains are human, and</li> <li>- Obtain appropriate clearance or approval from the competent authority, if required, and recover and remove the remains to the National Museum or National</li> </ul>	Monthly	

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		Forensic Laboratory as directed.		
General exploration activities	<ul style="list-style-type: none"> <li>- Potential grievances and complaints,</li> <li>- Social discomfort and anxiety</li> </ul>	<ul style="list-style-type: none"> <li>- Develop and implement an operation manual or procedures to work on private farms and implement monitoring programmes thereafter,</li> <li>- Maintain continuous communication with I&amp;APs to identify concerns and mitigation measures,</li> <li>- Compliance with all applicable laws and agreements,</li> <li>- Training and raise awareness to sensitize employees about contentious issues such as stock theft and poaching,</li> <li>- Ensure appropriate supervision of all activities, and</li> <li>- Accidents and incidents need to be reported to exploration manager and recorded in incident register.</li> </ul>	Weekly, monthly	
	Residing and nesting organisms can be disturbed, injured or killed by movement of vehicles and equipment	<ul style="list-style-type: none"> <li>- Restrict movements to areas of activities only,</li> <li>- Use existing tracks and routes only,</li> <li>- Identify rare, endangered, threatened and protected species in advance,</li> <li>- Route new tracks around protected species and sensitive areas,</li> <li>- Restrict movements to daytime hours,</li> <li>- Training and raise awareness to sensitize employees and notify them on avoiding some areas,</li> <li>- No driving off designated access routes (into the bush) / off-road driving, and</li> <li>- No animals or birds may be collected, caught, consumed or removed from site.</li> </ul>	Weekly	Site manager (or nominated site supervisor)
	<ul style="list-style-type: none"> <li>- Residing and nesting organisms can be disturbed as a result of ambient noise from operations and movements of vehicles and equipment</li> <li>- Conflict with farmers and neighbours about ambient noise</li> </ul>	<ul style="list-style-type: none"> <li>- Restrict excessive noise to areas of activities only,</li> <li>- Restrict excessive noise to daytime hours (7 am to 5 pm weekdays and 7 am until 1 pm on Saturday),</li> <li>- No activities between dusk and dawn and on Sundays and public holidays,</li> <li>- Drill equipment shall be suitably positioned to ensure that noisy equipment is away from receptors,</li> <li>- Residents shall be provided at least two weeks' notice of drilling operations within 1 km of their property,</li> <li>- All equipment to be shut down or throttled back</li> </ul>	Daily	



ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		<ul style="list-style-type: none"> <li>between periods of use,</li> <li>– Respect civic aviation regulations about the use of a drone</li> </ul>		
	<ul style="list-style-type: none"> <li>– Visual disturbances</li> <li>– Loss of Sense of Place</li> </ul>	<ul style="list-style-type: none"> <li>– Position drill equipment in such a way that it is out of sight from human receptors,</li> <li>– Barriers or fences shall be used if drilling occurs in, locations that may affect residents, livestock and road users of the D1237 and D1280 roads,</li> <li>– Residents need to be informed at least two weeks in advance that drilling operations are within 1km of their property,</li> <li>– Maintain good housekeeping,</li> <li>– Apply dust suppression where possible, and</li> <li>– Maintain continuous communication with I&amp;APs to identify concerns and mitigation measures</li> </ul>	Daily, weekly	
	Dust and emissions	<ul style="list-style-type: none"> <li>– All vehicles and machinery / equipment to be shut down or throttled back between periods of use,</li> <li>– Use existing access roads and tracks where possible,</li> <li>– Apply dust suppression where possible (wet drilling),</li> <li>– Restrict speed of vehicles (&lt;30km/h), and</li> <li>– Specific activities that may generate dust and impact on residents shall be avoided during high wind events.</li> </ul>	Daily	
	<ul style="list-style-type: none"> <li>– Loss of soil quality due to mixing of earth matter, trampling, compaction and pollution,</li> <li>– Enhanced soil erosion</li> </ul>	<ul style="list-style-type: none"> <li>– Where possible, plan access routes, drill pads and camps outside of existing drainage lines,</li> <li>– Where necessary, install diversions to curb possible erosion,</li> <li>– Restore drainage lines after being disturbed,</li> <li>– Topsoil should be stockpiled separately, and re-spread during rehabilitation,</li> <li>– Limit the possibility of compaction and creating of a hard subsurface,</li> <li>– Limit the possibility of trampling,</li> <li>– During drilling oil absorbent matting should be placed under and around the rig,</li> <li>– Equipment must be in a good condition to ensure that accidental oil spills do not occur and contaminate soil,</li> <li>– In the event of spills and leaks, polluted soils must be</li> </ul>	Weekly	

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		<ul style="list-style-type: none"> <li>collected and disposed of at an approved site, and</li> <li>– Limit the possibility to mix mineral waste with topsoil.</li> </ul>		
	Groundwater contamination	<ul style="list-style-type: none"> <li>– Ensure drill pads and spill kits are in place,</li> <li>– Consider alternative sites when the water table is too high,</li> <li>– Drill system should be dug to direct any accidental spills into sumps,</li> <li>– Wastewater shall be contained, and</li> <li>– Where possible, water from existing water sources shall be used.</li> </ul>	Weekly	
<b>Vegetation clearance for access routes, drill pads and temporary contractor camps</b>	<ul style="list-style-type: none"> <li>– Loss of plant species</li> <li>– Loss of habitat</li> <li>– Create landscape scars</li> <li>– Loss of Sense of Place</li> </ul>	<ul style="list-style-type: none"> <li>– Use existing roads for access to avoid new tracks and cut lines,</li> <li>– Minimise clearance areas through proper planning of the exploration activities,</li> <li>– Minimise stream crossings whenever possible,</li> <li>– Route new tracks around established and protected trees, and clumps of vegetation,</li> <li>– Identify rare, endangered, threatened and protected species and avoid them,</li> <li>– During toolbox talks and induction, highlight to workers so that the removal of significant plants is avoided,</li> <li>– Where possible rescue and relocate plants of significance, and</li> <li>– Promote revegetation of cleared areas upon completion of exploration activities.</li> </ul>	Daily	Employees, contractors Site manager (or nominated site supervisor)
	Alien plants and weeds can accidentally be introduced	<ul style="list-style-type: none"> <li>– All project equipment arriving on site from an area outside of the project or coming from an area of known weed infestations (not present on the project site) should have an internal weed and seed inspection completed prior to equipment being used,</li> <li>– Ensure the potential introduction and spread of alien plants is prevented,</li> <li>– Ensure the correct removal of alien invasive vegetation and prevent the establishment and spread of alien invasive plants,</li> </ul>	Monthly	Site manager (or nominated site supervisor)

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		<ul style="list-style-type: none"> <li>- Eradicate weeds and alien species as soon as they appear, and</li> <li>- Make workers aware about alien species and weeds.</li> </ul>		
<b>Fuel handling and storage, maintenance on equipment, machinery and vehicles</b>	<ul style="list-style-type: none"> <li>- Soil contamination</li> <li>- Water contamination</li> </ul>	<ul style="list-style-type: none"> <li>- Good housekeeping standards to be applied on site,</li> <li>- Training through toolbox talks and induction,</li> <li>- All stationary vehicles and machinery must have drip trays to collect leakages of lubricants and oil,</li> <li>- Spill kits and absorption material available during fuel delivery, storage or use,</li> <li>- Accidental spills and leaks to be cleaned soonest,</li> <li>- Spills to be reported to the exploration manager, and</li> <li>- Fuel spills of greater than 200L to be reported to the authorities immediately.</li> <li>- Plant and equipment to be well maintained and serviced regularly (maintenance and service schedules in place),</li> <li>- In the field, use of hydrocarbons under 200L can be used for mobile refuelling or servicing,</li> <li>- Bulk fuel will be stored in adequate containment areas (on a non-porous floor, in a bunded area, capable to contain 110% of the volume stored),</li> <li>- Preventative measures will be in place when service and maintenance activities are done (drip trays, non-porous surfaces, funnels, non-damaged containers),</li> <li>- Refuelling and de-fuelling in designated areas (with adequate preventative measures as described above in place) only.</li> </ul>	Daily	Employees, contractors  Site manager (or nominated site supervisor)
<b>Generation of waste</b>	<ul style="list-style-type: none"> <li>- Soil contamination</li> <li>- Water contamination</li> <li>- Nuisance (visual impacts, litter)</li> <li>- Ecological risks</li> </ul>	<ul style="list-style-type: none"> <li>- Good housekeeping,</li> <li>- Documented training and awareness through toolbox-talks and induction,</li> <li>- Implement a Standard Operational Procedure on waste management, from cradle to grave for all kinds of waste possible on-site (e.g. hydrocarbons, domestic, wastewater),</li> <li>- Implement a culture of correct waste collection, waste segregation and waste disposal, complimentary to the</li> </ul>	Daily and weekly	Employees, contractors  Site manager (or nominated site supervisor)

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		waste hierarchy – avoid, re-use, recycle, – Avoid hazardous waste on site, and – Wastewater discharges will be contained – no disposal of wastewater directly into the environment without pre-treatment.		
<b>Heritage</b>	Disruption of heritage sites	– Discovery of unearthed archaeological remains uncovered, the following measures (chance find procedure) shall be applied: – Works to cease, area to be demarcated with appropriate tape by the site supervisor, and the Site Manager to be informed, – Site Manager to visit the site and determine whether work can proceed without damage to findings, mark exclusions boundary and inform the Environment and Social Manager with the GPS position if possible, – If works cannot proceed without damage to findings, Site Manager to inform the Environmental Manager who will get in touch with an archaeologist who will provide advice, – Project Manager / Archaeological Specialist to evaluate the significance of the remains and identify appropriate action, for example, record and remove; relocate or leave in situ (depending on the nature and value of the remains), – Inform the police if the remains are human, and – Obtain appropriate clearance or approval from the competent authority, if required, and recover and remove the remains to the National Museum or National Forensic Laboratory as direct.	Before siting a new drill pad site or any land preparation activity	Nominated site supervisor or Exploration Manager
<b>Job creation, skills development and business opportunities</b>	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	Exploration manager

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
<p><b>Post drilling activities:</b></p> <ul style="list-style-type: none"> <li>- Closing of sumps</li> <li>- Closing of drill holes</li> </ul>	<p>Possible groundwater contamination and injury to animals may occur if proper site closure is not done.</p>	<ul style="list-style-type: none"> <li>- Sumps to be backfilled and covered with separately stored topsoil, re-spread on top,</li> <li>- Excavations for the sumps shall be refilled with the subsoil first and the topsoil last,</li> <li>- Where portable sumps are unfeasible, drilling muds and fluids should be contained in appropriately sized and lined sumps or tanks for recirculation or disposal at appropriate waste management facilities,</li> <li>- Above-ground tanks are preferred over excavated sumps,</li> <li>- At the completion of drilling, the sump shall be drained, and the liner removed,</li> <li>- Inspection of sumps should be conducted at the end of the wet season or within six months, to monitor site stability.</li> <li>- Effective relocation of drill cuttings,</li> <li>- Remove pegs, cut collars and plug holes with plastic cones of 300mm below ground level,</li> <li>- Holes should not only be filled with sand alone, as the wind will scour the sand and re-establish the hole</li> </ul>	<p>Daily</p>	<p>Nominated site supervisor or Exploration Manager</p>



## 6 IMPLEMENTATION OF THE EMP

Exploration work will be carried out in compliance with the relevant requirements of the Minerals (Prospecting and Mining) Act, 1992. 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 September 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, specialist reports and the environmental scoping report.