

**MEFT REFERENCE: APP-003546**

**ENVIRONMENTAL MANAGEMENT PLAN (EMP) REPORT**

**Upgrading and operation of Rhino Ugab Campsite, Daures Constituency,  
Erongo Region, Namibia**

*Prepared on behalf of*

**TSISEB COMMUNAL CONSERVANCY**

*Operating in a Joint Venture with*



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## 1. INTRODUCTION

This Environmental Management Plan (EMP) is a legally binding document and it provide details how the proponents will incorporate environmental protection while undertaking various project activities during upgrading, construction and operation of the campsite.

An EMP is similar to a policy and for companies that have environmental policies it is usually easy to implement EMPs.

## 2. OBJECTIVES

Purpose of this EMP is to demonstrate how the proponents intend to implement the EMP by providing a clear and concise baseline environmental monitoring plan.

Specific objectives are to:

- List documentations (e.g. permits, methods statement, SOPs, etc) required for operating a private air-strip;
- Establish baseline environmental conditions before and after construction, and
- Monitor environment during the operation phase.

## 3. ENVIRONMENTAL CERTIFICATIONS AND DOCUMENTATIONS

Environmental certifications will include permits and certificates needed to authorize campsite operations as well as undertake tourism activities as required by law. Documentations will be communicable materials that will be required to describe, explain or instruct and communicate information regarding the campsite operational procedures.

Before commencement of the proposed development, the following environmental certifications and documentations shall be required:

**Table 1:** permits and authorization.

Certification and documentation	Institution/competent authority	Contact person/details
Environmental clearance certificate (ECC)	Ministry of Environmental, Forestry and Tourism	Environmental Commissioner

Domestic and industrial wastewater and effluent discharge permits	Ministry of Agriculture, Water and Land Reform	Department of Water Affairs
Baseline environmental monitoring plan.	Ministry of Environment, Forestry and Tourism	Department of Environmental Affairs

#### 4. MITIGATION ACTIONS

##### 4.1. Risk preparedness and response plan

Risk is an event that may or may not happen; whereas an impact is what will happen if a risk occurs. Risks poses a significant impact on people, the environment or and property. Although they may not happen, it is important to prepare and respond to risks by following priorities and in the order below:

- **Safety** of people (always **First**);
- **Protection** of the Environment, and
- **Protection** of Assets or equipment.

Emergence preparedness and response management involves 5 basic steps as follows:

- **Preventive actions** are taken to avoid an incident.
- **Mitigation measures** are actions taken to prevent an emergency, reduce the chance of an emergency happening, or reduce the damaging effects of unavoidable emergencies.
- **Preparedness** increase the proponent's ability to respond when a risk occurs. Typical preparedness measures include developing a method statement and emergence exit procedures, awareness and training for both response personnel and affected parties and conducting drills to reinforce training and test capabilities.
- **Response** is an action carried out immediately before, during, and immediately after a hazard impact, which is aimed at saving lives, reducing economic losses, and alleviating suffering. Response actions may include activating the emergency operations center, evacuating threatened employees or equipment, opening shelters and providing mass care, emergency rescue and medical care.
- **Recovery**. These are actions taken to return to normal or near-normal conditions, including the restoration of basic services and the repair of environmental, social and economic damages. Typical recovery actions include debris cleanup, financial

assistance to individuals, rebuilding of infrastructures and key facilities, and sustained mass care for displaced marine animal populations.

## **5. GRIEVANCE MECHANISM**

The procedure the management will apply to deal with the employees' grievances will be enforced as follows:

### **5.1. Timely Action**

The first and foremost requisite in grievance handling shall be immediate settlement as they arise. The sooner a grievance is settled, the lesser it will affect employees' performance. This requires the first line supervisors to be trained in recognizing and handling a grievance properly and promptly.

### **5.2. Accepting the Grievance**

The supervisor shall recognize and accept the employee grievance as and when it shall be expressed. Acceptance shall not necessarily mean agreeing with the grievance; it rather shows the supervisor's willingness to look into the complaint objectively and dispassionately.

### **5.3. Identifying the Problem**

The grievance expressed by the employee shall be at times simply emotional, over-toned, imaginary or vague. The supervisor, therefore, shall be required to identify or diagnose the problem stated by the employee.

### **5.4. Collecting the Facts**

Once the problem is identified as a real problem; the supervisor should, then, collect all the relevant facts and proofs relating to the grievance. The facts so collected shall be separated from the opinions and feelings to avoid distortions of the facts.

### **5.5. Analysing the cause of the Grievance**

Having collected all the facts and figures relating to the grievance, the next step involved in the grievance procedure shall be to establish and analyse the cause that led to grievance. The analysis of the cause shall involve studying various aspects of the

grievance such as the employees past history, frequency of the occurrence, management practices, union practices, etc. Identification of the cause of the grievance helps the management to take corrective measures to settle the grievance and also to prevent its recurrence.

### **5.6. Taking Decision**

In order to take the best decision to handle the grievance, alternative courses of actions shall be worked out. These are, then, evaluated in view of their consequences on the aggrieved employee, the union and the management. Finally, a decision taken should best suite a given situation. Such decision should serve as a precedent both within the department and the company.

### **5.7. Implementing the Decision**

The decision shall be immediately communicated to the employee and also implemented by the competent authority.

In case, it is not resolved, the supervisor once again needs to go back to the whole procedure step by step to find out an appropriate decision or solution to resolve the grievance.

## **6. EXTERNAL COMMUNICATIONS**

External communications shall be handled in line with company procedures.

## **7. RECOMMENDATIONS**

It is recommended that:

- The proponent should strictly adhere to the EMP and undertake baseline environmental monitoring;
- Data from baseline environmental monitoring should be kept, and availed to authorities whenever requested.

## **8. REPORTING**

Baseline monitoring and environmental monitoring should be reported to the Ministry of Environment, Forestry and Tourism.



Phase	Issue	Mitigation	Monitoring actions and method	Performance Indicator	Responsible personnel
Construction	<b>Access control</b>	<p>Appointed Contractor should submit a detailed method of statement explaining exactly how the construction phase will be implemented and how impacts will be mitigated.</p> <p>Those occupying current campsite should be informed of intended activities prior commencement of construction and subsequent activities.</p>	<p>Contractor, should fence off the perimeter where construction will take place.</p> <p>The location of all underground services and servitudes must be identified and confirmed.</p>	Construction plan.	Contractor.
	<b>Delayed construction influenced by rainfall, which has cost implications and causes low user satisfaction</b>	<p>Plan such that delays are factored into construction schedule and communicate this to stakeholders and I &amp; APs.</p> <p>Include the best practical option in the construction plan.</p> <p>Communicate updated schedule with all stakeholders and at community meetings to ensure all are on track with the latest schedules.</p>	Constantly monitor delays and adapt construction plan and update stakeholders and I & APs.	<p>Construction plan.</p> <p>Record number of feedback meetings.</p>	<p>Contractor.</p> <p>Resident Engineer (RE).</p> <p>Proponent</p>
	<b>Poor quality materials used.</b>	<p>Only quality materials used for construction, quality finishes.</p> <p>Cheapest instead of reputable contractor used.</p>	RE to include specifications in the construction plan.	Construction plan.	<p>Resident Engineer (RE)</p> <p>Proponent</p>

	<p><b>Safety, health and environmental</b></p>	<p>The Contractor is responsible to prepare method statement including implementation of the Public Health and Public Safety Plan and submit this to Proponent.</p> <p>The Contractor should appoint a safety, health and environmental (SHE) officer or representative.</p> <p>Construction materials blown to nearby properties and dangerous areas.</p> <p>Safety hazards on site.</p>	<p>Proponent should appoint an Environmental coordinator (ECO) who should ensure method statement is implemented during construction.</p> <p>Regular visual inspections for approval.</p> <p>The work areas must be set out and isolated and danger tape on a daily basis.</p> <p>The demarcated work area may only contain materials, equipment, and personnel required to execute the work.</p> <p>Fire extinguishers must be in close proximity to fuel on site. There should be trained personnel to handle this equipment.</p> <p>Portable toilets should be availed onsite in the following ratio: 2 toilets for every 50 females and one for every 50 males.</p> <p>Once the work for the day is completed, the Demarcated area must be cleaned of any spilled materials and waste products. This must be disposed of in the allocated containers.</p>	<p>Quarterly written reports by the SHE officer and approved by the RE.</p> <p>Monthly written reports by the ECO and approved by the Proponent.</p> <p>Record number of inspections approved.</p>	<p>RE SHE officer</p> <p>Environmental coordinator (ECO) Proponent</p>
	<p><b>Excavation safety</b></p>	<p>Excavations should be left open for an absolute minimum time.</p>	<p>Monitor excavation/backfill schedule in the site instruction records.</p>	<p>Record number of trenches backfilled.</p>	<p>RE ECO</p>



		<p>Excavate short lengths of trenches and box areas for services or foundations in such a way that the trench will not be left unused for more than 24 hours.</p> <p>Apply demarcation standards for work areas as above for all excavation works. Include all soil stockpiles in the demarcated area.</p> <p>Provide additional warning signals in areas of movement and in 'no personnel' areas where workers are not active.</p>			Proponent
	<b>Level of noise</b>	<p>Noise should be kept at minimal by using well maintained construction machineries and vehicles.</p> <p>Noise generating activities should be restricted within normal working hours.</p> <p>Use, where possible, local workforce to mitigate noise.</p>	<p>For this project noise should be monitored in different locations using a portable noise monitoring metre. Modern portable noise monitors are left measuring for about 1 week, during which time they run on the internal battery and store all the measurements automatically. After a week the unit can be returned to the office or a portable computer can be taken to the site, and all the data is downloaded. If monitoring is ongoing then the battery can be exchanged for a fully charged one.</p>	Noise level.	<p>SHE officer.</p> <p>ECO.</p>

	<p><b>Dust and gaseous emissions</b></p>	<p>Ground surface should be watered to minimise level of dust.</p> <p>Heavy equipment such as bulldozers and other construction equipment will produce exhaust emissions from diesel engines leading to temporary increase in Sulphur dioxide, Nitrogen oxides, Carbon dioxides, and Carbon monoxide concentrations.</p> <p>Increased concentration of these gases depend on the content of fuel used and emissions from engines could be reduced by using unleaded fuel for machineries. The proponent should instruct Contractor to use unleaded fuel.</p>	<p>Dust and atmospheric contents (or aerosols) should be measured and recorded regularly.</p> <p>Various dust particle measuring devices are used to measure outdoor air quality. For example the PCE-RCM 15 enables the measurements of Carbon dioxide, Carbon monoxide, fine dust, temperature and humidity.</p>	<p>Record measurements of dust particles and gaseous concentrations.</p>	<p>ECO.</p>
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	<p><b>Loss of reptiles and amphibians diversity</b></p>	<p>Identify habitats of each species and how they utilise them.</p> <p>Avoid construction in areas known to be nesting, feeding, and breeding or nursery habitats of animals.</p>	<p>Erect fencing to exclude reptiles or amphibians from the working areas and relocate any reptiles in the working areas to safe areas.</p> <p>The footprint of the new car park to be limited to areas of low to medium value for all species.</p> <p>Create new or alternative basking, feeding and hibernation habitat.</p> <p>Before construction, carry out surveys to assess baseline conditions for reptile and Amphibia biodiversity and monitor this during the construction and operation.</p>	<p>Baseline reptile and Amphibia biodiversity survey report.</p> <p>Bi-monthly monitoring survey of reptiles and amphibians.</p> <p>Survey reports.</p>	<p>ECO.</p>
	<p><b>Loss of herbaceous</b></p>	<p>Although recovers really quickly, herbaceous vegetation clearance should be kept at minimal.</p> <p>Removal of species of certain ecological value should not be</p>	<p>Baseline herbaceous biodiversity survey report.</p> <p>Bi-monthly monitoring survey of reptiles and amphibians.</p> <p>Survey reports.</p>	<p>Baseline reptile and Amphibia biodiversity survey report.</p> <p>Bi-monthly monitoring survey of reptiles and amphibians.</p>	<p>ECO.</p>

		<p>done without approval from relevant authority.</p> <p>Species of certain species of ecological value should be removed and planted elsewhere.</p>		Survey reports.	
	<b>Loss of topsoil</b>	<p>Topsoil should be removed and stored somewhere for rehabilitation after construction.</p> <p>Rehabilitate with plants that are not exotic in the area.</p>	<p>Before construction carry out a soil assessment survey to determine soil types and composition.</p> <p>Monitor types and soil composition throughout the project phase.</p>	Types of soil and composition.	ECO.
	<b>Habitat modifications</b>	<p>Avoid disturbing sensitive areas. This could be achieved when selecting suitable sites for construction of campsites.</p> <p>Carry out baseline survey to assess reptile and amphibian populations in the project area before and after construction.</p> <p>Continue to monitor reptile and amphibian populations.</p>	Carry out survey to establish baseline conditions and compare this to conditions during and after construction.	Habitat conditions before and after the project.	ECO.

	<p><b>Sustainability and socio-economic issues</b></p> <p>Conflicts that may arise as a result of resources use such as water and land need to be rectified within relevant and applicable laws.</p> <p>Increased HIV/AIDS and associated healthy and social problems including fatigue, low productivity, and absenteeism and fatality.</p>	<p>Do not fence off the project area in order to allow free movements of animals including livestock that frequently roam in the area.</p> <p>Fence off important heritage sites (if any) and graveyard.</p> <p>When recruiting consider current occupants working for Rhino Trust Fund who are unemployed. This will limit number of outsiders who might bring with them social ills.</p> <p>No alcohol will be allowed on site.</p>	<p>The Contractor is responsible to plan for and coordinate the implementation of the Public Health and Public Safety Plan.</p> <p>Daily monitoring by Contractor and RE.</p> <p>Daily monitoring by Contractor. Spot checks.</p> <p>Suspension without payment and immediate removal from site.</p>	<p>Record number of court cases submitted.</p> <p>Record number of incidents.</p> <p>Site employment record.</p>	<p>Contractor SHE officer</p>
<p><b>Operation</b></p>	<p><b>Traffic and safety</b></p>				
	<p>Road use</p>	<p>Enforce speed limit to reduce animal road kills.</p> <p>Road signs should be placed to indicate speed limit.</p> <p>Where less speed is required put stop or yield signs.</p>	<p>Install speed cameras.</p>	<p>Record number accidents and causes.</p>	<p>Campsite manager.</p>

		All drivers should have driver's licence.			
	<b>Water resources</b>				
	Water pollution	<p>All grease, oil, and similar wastes should not be discarded in the river. These should be contained and temporarily stored before disposing off properly.</p> <p>During borehole installation or maintenance care should made to avoid polluting underground water.</p> <p>The sewage septic tanks should be carefully lined to avoid leaching. Dish washing and laundry detergents should be biodegradable.</p>	Water quality monitoring to determine contamination.	<p>Use a combination of multi-parameter, titration methods and other analytical procedures to measure and record basic water parameters such as pH, BOD, total alkalinity, TDS, TSS, Nitrates, Nitrites, total Phosphate, Chlorine, as well as total hardness, hardness due to Calcium and Magnesium.</p> <p>Contaminated water has a pH lower than 6 and pH higher than 8.</p>	ECO.

				<p>The TDS of normal water is below 500 mg/l.</p> <p>Water with low BOD is not fit for human consumption.</p> <p>Good quality water should have the following properties: conductivity (&lt;75 mS/m), turbidity (&lt;12 NTU), TDS (&lt;500 mg/l), TSS (&lt;100 mg/l), COD (&lt;100 mg/l), BOD (&lt;30 mg/l), SO<sub>4</sub> (&lt;40 mg/l), Cl (25 mg/l), F (1.5 mg/l), Nitrate (10 mg/l), CaCO<sub>3</sub> (300 mg/l), Ca (150 mg/l), Mg (70 mg/l), Na (100 mg/l), K (200 mg/l), Fe (0.1 mg/l) and Mn (0.05 mg/l).</p>	
	<b>Water use</b>				

		<p>Campsite should implement effective maintenance and water saving measures to prevent wastage and conserve water.</p> <p>Among others the following should be applied:</p> <ul style="list-style-type: none"> <li>-Install water efficient appliances.</li> <li>-Fit appliances with water efficient devices.</li> <li>-Water-saving fittings: shower heads and taps should be fitted with aerators or specific water-saving fittings.</li> <li>-The typical flow-rate of a water-saving shower head should be less than 10 liters per minute.</li> <li>-No 'towel change' option should be offered to guests. Guests need to be informed on how to opt for this service i.e. to hang towels up if no change is required by housekeeping, or leave on the floor if a change is required.</li> </ul>	<p>Monitor monthly water consumption.</p> <p>Check monthly water bill.</p>	<p>Monthly water consumption.</p>	<p>Campsite manager.</p>
	<b>Waste generation</b>	<p>All waste materials must be contained and disposed of according to the relevant legal requirements.</p>	<p>Monitor volume of waste generated and volume disposed off monthly.</p>	<p>Record volume of waste generated and dumped.</p>	<p>Campsite manager.</p>



		<p>Waste must be stored in such a manner that no pollution of the environment occurs at any time.</p> <p>All domestic waste generated must be disposed of in a proper manner at the Local Authority Landfill site.</p> <p>Spill clean-up kits and absorbent material must be kept on site to assist in immediate clean-up of any hazardous material spills.</p>			
	<b>Solid waste</b>	<p>For each campsite, waste collection bins should be provided.</p> <p>Since campsite will not be fenced, animal proof garbage bins should be used. For example garbage could be secured in cages at each campsite.</p>	Monitor volume of solid waste generated and volume disposed off monthly.	Record volume of solid waste generated and dumped.	Campsite manager and ECO.

		<p>In addition, garbage bins will be located at each ablution block.</p> <p>Garbage bins should be collected routinely and solid waste transported and disposed at an authorised solid waste facility.</p>			
	<b>Liquid waste</b>	<p>Ensure regular maintenance of sewerage dump stations to prevent overflow or clogging that may occur as result of poor maintenance.</p> <p>Other issues will include bathing, toilets, garbage collection, sewage dump stations and fire protection.</p>	<p>Monitor liquid waste leakage.</p> <p>Monitor liquid waste volume generated and dumped.</p>	Tidiness.	Campsite manager.
<b>Energy</b>	<b>Solar energy</b>	<p>Invest in solar energy and limit usage of firewood.</p> <p>Install energy saving light sensor.</p>	Atmospheric air content composition.	<p>Percentage usage of solar energy.</p> <p>Substitution of fossil fuel as a source of energy.</p>	ECO and Campsite manager.

		Appliance such as TV, DVD and others should be switched off (and not left on stand-by mode).			
	<b>Generators</b>	Where necessary generators should make use of unleaded fuel.			Campsite manager and proponent.
<b>Gardening and landscaping</b>	<b>Introduction of exotic species</b>	Plants used should be carefully selected to prevent introduction of exotic plant species.  Canopy structures of plants used should not protrude into any pedestrian walkways, and should not be lower than 2.1 m. Where steps en-route to facilities, a no-step route to be provided.	Monitor growth of exotic plant species.  Cut down any suspected exotic plant species.	Zero tolerance for exotic plant species.	ECO and Campsite manager.
<b>General operational issues</b>		On-site representative must be contactable 24 hours, 7 days a week. Where applicable, any meal/s and beverages must be provided from outlets within the boundary walls of the property. Servicing of rooms 7 days a week (this includes linen/towel change, removal of rubbish and cleaning).  Formal reception area must be provided.  Onsite parking with security for guests.	Investigate whether are satisfied.	Results for guest suggestion box.	Campsite manager.

		Full housekeeping and laundry services provided.			
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