

**KRUGER NATIONAL PARK**

**KRUGER SHALATI**

**ENVIRONMENTAL MANAGEMENT PLAN**

**May 2018**



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**Environmental Management Plan**  
**Procedure: EMP for Kruger Shalati**  
**Authority: Environmental Manager**  
**Responsibility: Project manager**  
**Retention Time: 2 years**

**Project Title:** Development of the Kruger Shalati Up-market Tourism Facility



**INTRODUCTION**

The Kruger Shalati development is based on the utilisation of existing infrastructure within and adjacent to the Skukuza Rest Camp in the Kruger National Park and comes as a direct result of a Request for Proposals issued by South African National Parks in respect of the “proposed public private partnership project (PPP) for the establishment of accommodation on the Selati Bridge and development of the Selati Precinct in the Kruger National Park”, dated November 2016. The tender was won by Sithole Restoration Services (Pty) Ltd., who subsequently changed their name to Kruger Shalati (Pty) Ltd. The development is comprised of the following components:

- Twelve railway coaches, refurbished and fitted off site, to accommodate 48 guests and inclusive of an additional coach that will serve as a guest lounge positioned adjacent to the existing pump house which is to be converted into a small swimming pool with surrounding deck.
- The existing Selati Restaurant renovated and refurbished to provide fine dining for both Kruger Shalati guests and the general public.
- The above will also serve as a reception facility for Kruger Shalati guests and provide an edutainment facility for the general public.
- The existing Waterkant Guest Houses are to be included in the Kruger Shalati Concession and will be renovated to meet the up-market standards consistent with the railway coaches.
- Replacement accommodation to be developed by Kruger Shalati (Pty) Ltd. for SANParks on a site immediately adjacent and to the west of the existing Nyati Guest House.

In order to comply with the EA conditions, section 28 of NEMA (National Environmental Management Act of 1998) – the “duty of care” as well as Kruger National Park requirements, an environmental management plan (EMP) has been developed to minimise and mitigate potential environmental impacts associated with the development. This EMP has been developed in the format of an audit to aid rapid, systematic and repeatable implementation and assessment.

The EMP provides recommendations for the avoidance of potential impacts generated during the construction phase of the development. The EMP suggests mitigation and monitoring measures to ensure that impacts are identified proactively and can be minimised timeously. Each of the “Management Components” below are discussed in terms of the primary environmental objective and the core criteria in monitoring, managing and mitigating potential impacts associated with the specific management criteria.

**Relevant parties and contact details:**

Position	Name	Contact
Concession Manager		
Section Ranger		
Project Manager		
ECO		
Contractor		
KNP Environmental Manager	Tracy-Lee Petersen	013 735 4271 / 071 432 7040

**PRIMARY OBJECTIVE OF THE EMP:**

To monitor and ensure environmentally sound practices are implemented in the development of the Kruger Shalati Concession by the appointed contractors through the continual identification, monitoring and management of environmental impacts as identified in the Basic Assessment as well as those that might arise during construction and that may not have been pro-actively identified.

**NOTES AND EMP IMPLEMENTATION GUIDELINE**

1. This EMP is for the development of the Kruger Shalati Concession only.
2. The audit interval is suggested to be one month.
3. The audit has been developed such that, where possible, all questions require a simple yes / no answer. An attempt has been made to phrase the questions such that the activity and environmental concerns are expressed clearly. It is, however, important that the responsible parties recognise that any audit should be in the 'spirit' of the EMP and not on semantics. Attempts to undermine the EMP should be dealt with by the auditor / Environmental Manager.
4. The EMP has been designed as an EMP and audit schedule in one, in order to provide an efficient and clear site management procedure. The audits are to be conducted by the **Environmental Control Officer** (ECO) together with the Project Manager and KNP Environmental Manager. Audit results are to be reported within a week of each audit and on a monthly basis to the Project Manager, the client, KNP Environmental Manager, DEA Compliance Directorate and in any site meetings.
5. The audit covers the period since the last audit (usually the past month).
6. Audit scoring is as follows:
  - All compliant aspects (yes) score one point.
  - All non-compliant aspects (no) score zero.

Scores are expressed as a percentage - Total score divided by total number of items.

A pass is 80%

7. Audits must be conducted with at least one person representing the contractor in attendance.
8. All audits should be signed by the auditor and the contractor representatives present after the audit. Each page may be initialled if necessary.
9. The audits are to be retained and form a track record of the site management and EMP compliance.
10. The EMP is for the duration of the construction pahse. It can be amended if required to accommodate additional environmental impacts not considered in the planning phase.  
Amendments can be proposed by either the contractor or ECO and must be agreed upon prior to implementation.
11. It is important to continually consider new information and technology that could reduce impacts and improve sustainability of the development.
12. Climate change should be considered as a factor in the development. The following are likely impacts of climate change: Droughts, more intense storms, flooding and general greater weather extremes (cold, heat, rain etc.)
13. Where ever possible, **energy** saving solutions should be implemented.
14. Where ever possible, **water** saving solutions should be implemented.

## 1.1 Agreement Statement

Primary Objective		
Ensure that the Project Manager, Construction Manager and all construction staff are familiar with and understands the contents of the EMP and are able and willing to comply with its standards and requirements, all legislation pertaining to the nature of the work to be done, and all aspects incidental thereto. To agree that the appointed ECO and/or the KNP Environmental Manager may view, check and audit the site against the EMP at any time, and that non-compliance or negative environmental impacts will be addressed at the earliest opportunity.		
Core criteria	Monitoring criteria	Compliance
The compilation of an agreement statement, attached to the EMP that must be signed by the Project Manager.	Signed declaration by Project manager. One original copy of this agreement must be submitted to SANParks with EMP Document.	
Alterations to the EMP must be pre-approved by the KNP Environmental Manager.	Signed Decision Note.	
The ECO will be responsible for presenting training on the EMP and its implementation to all senior construction staff.	Confirmation of training attendance and commitment to implementation of the EMP captured in all employment contracts. Training to be completed prior to commencement of the project.	
The Project Manager will be responsible for compliance to the EMP. The ECO together with the KNP Environmental Manager must monitor compliance with the EMP.	Record of monthly compliance audits.	

## 1.2 Construction Site Planning and Layout

Primary Objective		
To ensure that environmental constraints outlined in the EMP are adhered to during site planning and layout.		
Core criteria	Monitoring criteria	Compliance
Prior to commencement the Project Manager will inform the ECO of the intended actions and programme for site establishment.	Record of notification	
The Project manager's storage yard and overnight parking for construction vehicles will be located at the designated area as specified by the Environmental Manager and Section Ranger in consultation with the Project Manager.	Agreed designated area	
The construction site, access to the site, and materials lay down area will be demarcated prior to construction by the Environmental Manager and Section Ranger in consultation with the Project manager.	Relation of disturbance to site plan. Presence of	

No disturbance outside the demarcated areas will be permitted.	demarcation.	
Structures must be located to ensure minimal disturbance to the biophysical environment.	Signed and dated approved site plan.	
Special features (e.g. rock outcrops, rivers and wetlands, designated trees, natural vegetation) must be demarcated on site prior to construction.	Presence of demarcation on the ground.	
Damage to sensitive areas will incur a fine and all impacts must be immediately rehabilitated and/or environmental compensation must be made.	Audit of special features during construction – findings and recommendations recorded in ECO reporting.	
Movement of construction vehicles and machinery must be restricted to areas outside of the sensitive habitats on site and limited to demarcated access routes and areas.	ECO auditing of vehicle traffic and machinery with findings and recommendations recorded.	
The site planning should ensure that no storm water may enter the natural drainage system directly from the site/s, but rather be diverted and dispersed into the natural vegetation for absorption.	The site plan should include storm water management measures and these must be audited by ECO and recorded.	
The site plan should ensure that no artificial channels are constructed for storm water diversion, but that other engineering measures are utilised to adhere to the storm water management plan.	Storm water management on site plan	

### 1.3 Site Establishment and Site Management

Primary Objective		
To promote sound management of site in order to prevent negative environmental and social impacts.		
Core criteria: Procedures	Monitoring criteria	Compliance
Are there emergency procedures in place (fire, injury, disasters etc.)?	On site document or notice	
Is there a first aid kit available and is it clearly marked?	Presence on site	
Is the construction site clearly demarcated?	Presence on site	
Is the EMP, plans and incident register available and on site	Presence on site	
Have staff been made aware of environmental care requirements and the EMP?	Staff interview	
Has access to site been only via the designated routes and roads?	Complaint reports	
Have no construction staff wandered off site?	Complaint reports	

<b>Core criteria: Fire and risk management</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Is there a fire plan in place for veld and structural fires?	On site document or notice	
Are fire extinguishers or suitable fire-fighting equipment available?	Presence on site	
Has the use of fires on site been prevented?	Presence on site	
Have staff been trained in basic fire-fighting and fire risk management?	Interview	
Have staff been guided on behaviour and action when confronted with animals in a big 5 area?	Interview	
Has care been exercised to ensure that veld fires do not originate from the construction site or activities? (e.g. no open fires, managed grinding / welding areas, etc.)	Site inspection	
Is there a firebreak protecting the construction site?	Presence on site	
<b>Core criteria: Cement and batch mixing</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Is all batch mixing conducted on either an impermeable surface or within the footprint of a building?	Site inspection	
Are washings and waste from the batch mixing plant prevented from entering the environment? (confined to batch site)	Site inspection	
Is contaminated water from cement tool washing prevented from entering the environment?	Site inspection	
Is cement stored off the ground, over an impermeable layer and under cover?	Site inspection	
<b>Core criteria: Paint and solvent management</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Where possible, have water based paints been used?	Presence on site / contractor info	
Have brush and roller washings been prevented from entering the environment or waste water stream?	Site inspection	
If solvents are used, is there a solvent register (stating amount brought on site, used and remaining)?	On site document	
<b>Core criteria: Vehicles and site equipment</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Are all vehicles in a roadworthy condition?	Site inspection	
Have there been no reports, during the audit period, of speeding or bad driving by responsible persons?	Complaint report	
Are all vehicle drivers trained and licensed (including TLB's, cranes etc.)?	On site documentation	
Are all equipment operators trained and licensed (compactors, pumps, mixers, etc.)?	On site documentation	
Are all delivery vehicles properly covered and loose loads secured?	Site inspection / complaint report	

Has vehicle or equipment maintenance been undertaken at a purpose facility and not on site?	Site inspection / complaint report	
Are drip trays used for parked delivery and construction vehicles?	Site inspection / presence on site	
<b>Core criteria: Health and hygiene</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Is a hand wash basin (or bowl) with biodegradable soap and a hand towel made available?	Site inspection	
Are toilets kept in a clean and secure state and supplied with toilet paper?	Site inspection	
Is there a designated eating area for contractor staff?	Site inspection	
Are no chemical toilets used?	Site inspection	
Are there sufficient toilets (1:15 ratio or less)?	Site inspection	
<b>Core criteria: Heritage and artefacts</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Should human remains and/or artefacts be discovered on the site during earthworks, all work will cease in the area affected and the Project Manager will immediately inform the ECO and KNP Environmental Manager.	Condition in relation to construction activities.	

#### 1.4 Waste Management

<b>Primary Objective</b>		
OBJECTIVE: Prevent domestic waste, hazardous waste and construction waste from entering the environment. Hazardous waste, such as hydrocarbons, can have lasting pollution impacts. Procedures and mitigation measures can prevent or minimise pollution risk.		
<b>Core criteria: Domestic waste and litter</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Are there sufficient weather and vermin proof bins on the site?	Site inspection	
Do the bins provided have liners to aid waste removal?	Site inspection	
Are the bins emptied regularly (and at least weekly)?	Site inspection	
Is the site clear of litter (bottles, plastic wrappers, food containers etc.)?	Site inspection	
Is there a waste separation procedure on site? (separate waste into tin, glass, paper, plastic etc.)	Site inspection	
<b>Core criteria: Construction waste</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Has construction rubble been removed or stored for re-use?	Site inspection	

Has metal and plastic been removed from waste rubble? (waste metal can be sold as scrap).	Site inspection	
Has construction waste been kept separate from general and hazardous waste?	Site inspection	
Has all construction waste been removed from site?	Site inspection	
<b>Core criteria: Hazardous waste</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Are all hazardous substances and fuel containers kept in a locked store?	Site inspection	
Are all hazardous substances kept in a bunded container?	Site inspection	
Is the issuing of hazardous substances strictly controlled and a register maintained?	Site inspection	
Are spill kits and / or biological hydrocarbon digestive solutions available on site?	Site inspection	

### 1.5 Air Quality, Noise and Light Pollution

<b>Primary Objective</b>		
To minimise disturbance to wildlife (birds, bats, insects etc.) and to maintain sense of place within a national protected area.		
<b>Core criteria: Noise pollution</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Has there been no amplified music allowed on the site? Has the use of radios, CD players, television sets etc. been prevented?	Complaint reports	
Has construction been restricted to hours that will not create a disturbance to adjacent visitors?	Complaint reports	
Have noisy machinery been avoided and does machinery used have intact mufflers/exhausts etc.	Site inspection	
<b>Core criteria: Light Pollution</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Has care been maintained to ensure that lighting is only used when essential, suited to purpose and is directed?	Complaint reports	
Have naked lights (i.e. without shields or reflectors) been avoided? This includes contractors camp area etc.	Site inspection / complaint	
<b>Core criteria: Air quality</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Are all combustion engines on site running efficiently (no black or white smoke from exhaust)?	Site inspection / complaint / reports	
Have dust suppression measures been implemented to minimise dust when necessary?	Site inspection / reports	

## 1.6 Water Management

Primary Objective		
Prevent the wasteful use of water and protect natural water quality and drainage lines.		
Core criteria: Water Use	Monitoring criteria	Compliance
Are all hose pipes entire and not leaking?	Site inspection	
Have all hose pipes a tap at the discharge end?	Site inspection	
Are no hose pipes left unattended?	Site inspection	
Has water wastage been prevented?	Site inspection	
Core criteria: Waste Water	Monitoring criteria	Compliance
Is waste water free from hazardous contaminants?	Site inspection	
Is there any recycling of waste water?	Site inspection	
Core Criteria: Storm water management	Monitoring criteria	Compliance
Has the contamination (by fuel, oil, litter etc.) of storm water been prevented?	Site inspection	
Has erosion of stock-piles been prevented?	Site inspection	
Are there appropriate storm water velocity control measures in place?	Site inspection	
Are the building drip-lines protected from erosion (no gutters leads to drop impact erosion)	Site inspection	
Core criteria: Ground water	Monitoring criteria	Compliance
Has no waste been buried?	Site inspection / reports	
Have no pit latrines been constructed?	Site inspection	
Have any boreholes near the site been protected?	Site inspection	

## 1.7 Biodiversity Management

Primary Objective		
Minimise impacts on biodiversity during construction and mitigate long term potential impacts.		
Core criteria: Vegetation	Monitoring criteria	Compliance
Has damage to trees been prevented?	Site inspection	
Have indigenous shrubs and other small plants been protected?	Site inspection	
Are trees in or around the site free from nails and wire etc.?	Site inspection	
Has wood and plant collection been prevented?	Site inspection	
Core criteria: Fauna	Monitoring criteria	Compliance
Are there no snares or materials left on site that could harm animals?	Reports and complaints	
Are open trenches inspected each morning for trapped animals?	Site inspection and interview reports	
Have pets and alien animals not been brought on site?	Site inspection and reports	
Has the feeding of animals been prevented (intentional or unintentional)?	Site inspection and reports	
Core criteria: Top soil protection	Monitoring criteria	Compliance
Has all topsoil been removed from the footprint of new buildings? (to a depth of about 300mm)	Site inspection	
Has the removed topsoil been stockpiled for later rehabilitation use	Site inspection	
Is the topsoil stored in piles less than 1.5 meters high and watered occasionally?	Site inspection	
Is the topsoil stored such that it is protected from wind and storm erosion?	Site inspection	
Core Criteria: Rehabilitation	Monitoring criteria	Compliance
Is rehabilitation undertaken as a 'rolling' process – when an area is being completed, rehabilitation commences?	Site inspection	
Are rehabilitated areas protected until vegetation has established?	Site inspection	
Have existing trees been moved and re-planted or replacement trees planted (in a ratio of 1 removed to 3 planted)?	Site inspection	
Has landscaping and rehabilitation been undertaken with appropriate and locally indigenous plants?	Site inspection	

<b>Core criteria: Alien plant control</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Is there an alien plant removal program?	On site document or notice	
Is the sand imported to site free from weeds and alien plants?	Site inspection	
Can alien plants be recognised?	Interview	

### **1.8 Trenching and Site Preparation**

<b>Primary Objective</b>		
Minimise impacts of trenching and site clearing		
<b>Core criteria</b>	<b>Monitoring criteria</b>	<b>Compliance</b>
Is site clearing restricted to the building footprint only?	Site inspection	
Are all equipment/materials to be installed in any trench available prior to commencement?	Site inspection	
Are trenches dug with the narrowest bucket possible?	Site inspection	
Are trenches routed to avoid damage to established trees?	Site inspection	
Are services combined, whenever possible, in the same trench?	Site inspection	
Are trenches dug with a separation of top soil and overburden?	Site inspection	
Are trenches filled progressively with any open sections being covered outside of construction hours?	Site inspection	

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**Completion of site assessment and audit.**

**Auditor (sign)**..... **Site manager (sign)** .....

**Date:** .....

In signing the contractor accepts the above findings and undertakes to rectify and improve environmental compliance and care.