environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 20, promulgated in terms of theNational Environmental Management Act, 1998(Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.

2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.

3. Where applicable **tick** the boxes that are applicable in the report.

4. An incomplete report may be returned to the applicant for revision.

5. The use of "not applicable" in the report must be done with circumspection becauseif it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.

6. This report must be handed in at offices of the relevant competent authority as determined by each authority.

7. No faxed or e-mailed reports will be accepted.

8. The report must be compiled by an independent environmental assessment practitioner.

9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

11. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? ☐ NO
If YES, please completetheformentitled "Details of specialist and declaration of interest"
for appointment of a specialist for each specialist thus appointed:
Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail[1]:

Application for environmental authorisation for the construction activities at the Oorlogskloof Nature Reserve in Northern Cape Province.

Project Details:

Proponent and Project Description

The Department of Environmental Affairs, through its SRPP funds, in terms of the People and Parks programme, is funding for the upgrade of the camping facilities at the Oorlogskloof Nature Reserve. The proponent in this regard is the Northern Cape Department of Environment and Nature Conservation.

The proponent commissioned IMOGENE Building Construction as Project Implementers/Managers for the pre-construction and construction phases of the project.

The project involves the following activities:

1. Theconstruction of ten (10) log cabins that will accommodate a maximum of 15 people each. The structure will be constructed from treated SA Pine, with green metal roof sheets. The exterior will be half round logs;
   Each log cabin will be coupled withwater reticulation from natural water source,sewer reticulation to a septic tank, solar energy, and ablution facilities. Each log cabin, when complete, will occupy a land area of 80.5m² (inclusive of associated infrastructure).
   Log cabins will be built at the following locations:
   Olienhoutbos, Driefontein, Praamkoppie, Kareboos, Swartkliphuis, Doltuin,Brakwater, Suikerbosfontein, Bo Kloof, and Kameel se gat;
2. Drilling of three (3) boreholes: 165mm boreholes will be drilled at the Praamkoppie, Olienhoutbos and Groot Tuin. Each borehole is estimated to be at a maximum depth of 200m with a 12m of PVC casing. Each borehole is to yield water at a flow rate of .42litres per secondand a maximum amount of 10 800 litres of water will be extracted at each borehole per month.
3. Water reticulation from water source to the log cabins: Water supply will be provided from the boreholes, nearby springs, fountains and rivers. 2500l storage plastic tanks, pumps and pipeline will be installed.
4. Installation of specialist Water Treatment Systems: a septic tank with two tanks (2000L and 100L) will be installed to receive waste water from the ablution facilities at each site. The septic tank will be fitted with a filter and chopper to chop foreign objects and solid waste into smaller particles so they can be closely packed at the bottom of the septic tank to maximise the tank's capacity usage. The system will operate by means of a battery charged by the solar panels. Water from the septic tanks will be reused in the toilet system after being treated with chlorine by means of a venturi system. The quality of water coming out of the system will be of safe levels regarding Biological Oxygen Demand (BOD); Chemical Oxygen Demand (COD; Fats, Oils and Grease (FOG), etc. The quality will be such that the water can be used for plant watering, or re-use in systems such as flushing. The system is estimated to produce very minimal quantities of sludge of less than 1 cubic metre in 10 years. In this system, sludge is

[1]Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

expected to forever biodegrade or stay at the bottom of the tank after being cut into fine material by the filter and chopper system. This is an upgrade of the existing pit toilets which in turn means there will be no disposal of sludge. It will work exactly as the pit toilets using and conserving water while giving the hikers a pleasure of a flushing toilet. This system will be installed at accessible and inaccessible areas which will be hard for the park to dispose the sludge from these areas should it need to be disposed, that's why the applicant and other project stakeholders decided to install this kind of system that will last for a very long time and has minimisedmaintenance with no sludge disposal but the septic tank as their modern pit.Given that these toilets are used only by passing hiking groups of 15 for around 6 hours on average- and that this use will be likely much more careful, one would expect the pit filling rate to thus be around 7.5 cubic litres/ per person year- given the nature of this waste would be light toilet paper and human waste only.Practically speaking for this case study, this amounts to 15 people X 7.5 cubic litres per annum or 112.5 cubic litres / per year as an absolute maximum, but probably far less.The 2000 Litre septic tank would at this rate be filled for practical purposes only between 12 - 18 years even if used by 15 people every day , 365 days per year.Essentially this type of waste matter quickly biodegrades to a very fine dust layer on the floor of the septic tank, completely after 2-3 weeks of anearobic digestion and denitrification.Given that there is a further 1000 Liter buffer tank allowing further settling , clarification and bio remediatonthe average transit time of water through the system would be at around 100 Liters per day through-put giving an overall treatment time of 25-30 days, which is very good and extended safe treatment.

5. Installation of solar energy: Each log cabin will be furnished with solar power to provide energy for basic uses such as lighting and powering water geysers. Solar panels, calcium batteries will form part of the solar energy installation.
6. Construction of stream crossings in the form of timber/boardwalk type pedestrian bridges, lowlevel crossings, culverts, drifts and gabions. This activity entails the following:
    - Ten (10) timber foot/pedestrian (boardwalk type) bridges across streams along the hiking trails. These bridges will be located at the following places:
        - Driefontein: (5m long x 1m wide with no railings);
        - Kameel Se gat area-replacement of eight (8) existing portions over the Oorlogskloof River with lengths of 4.4m, 5m, 6m, 6.4m, 6.6m, 6.7m, 6.9m and 7.6m;
        - Eland se Kliphuis (20m long x 1m wide x 1m high railings);
        - Two at Suikerbosfontein (08m long x 1m wide with no railings and 6m long x 1m wide with no railings);
        - Doltuin (8m long x 1 m wide 1 m high railings);
        - Two at Saaikloof (15m long and 1 m wide with no railings& 8m long x 1m wide with no railings); and
        - Two at Saaikloof Day Trail (6m and 8m long x 1m wide with no railings).
    - Vehicular stream crossings/ hydraulic structures at various points that include the following:
        - Three (3) low level bridges or portal framed culverts incorporating 1800 x 900 portal framed culverts;
        - Six (6) single pipe concrete culverts;
        - Two (2) double pipe concrete culverts; and
        - Two (2) concrete drifts
7. Maintainance of hiking trails and access roads: Sections of the access roads will be upgraded. The upgrade involves re-gravelling, and installation of stormwater management system. Soil erosion along the access roads will be mitigated by installing gabions and gabion mattresses at various locations along the road.

   Hiking trails will also be maintained. This activity involves the repair of damaged areas, widening of pathways by trimming of infringing vegetation, removing and repacking of stones, and installation of wooden poles to prevent soil erosion.
8. Alien invasive species removal: Dense concentrations of Black Wattle, Port Jackson, Eucalyptus and Prosopis (muskietboom) will be removed at strategic entrance or feeder points. They will be will be

either uprooted if small or cut and tree stumps will be coated with a Garlon/diesel mix (200ml Garlon: 20L diesel) or Chopper/Diesel Mix (12% Chopper, 88% water).

The 10 proposed sites are all existing with overnight camping tents/shelter, long drop toilets and either perennial or seasonal springs and streams as sources of water supply. Visitors currently have tousethe natural surface water for all their basic needs bathing purposes, cooking, etc. or bring their own water for consumption purposes.

In terms of the EIA Regulations 2010, a Basic Assessment process had to be followed because of the following listed activities:

Relevant Notice	Activity No.	Activity Description
544, 18 June 2011	11(iii)	Construction of stream crossings (pedestrian bridges, culverts, drifts, etc. at the Nature Reserve.
	11(x)	Construction of approximately 80.5 m² log cabins within 32 metres from the edge of streams. These are existing sites at Brakwater and Driefontein.
546,18 June 2011	6(a)ii(aa)	Construction of 10 log cabins that have a capacity to accommodate 15 people each at any given time inside the Oorlogskloof Nature Reserve (Protected area in terms of NEM: Protected Areas Act).
	16(iii)	Construction of log cabins with associated structures and infrastructure such as ablutions, 2500l freshwater tanks, septic tanks and boreholes with a footprint of about 80.5 m² at each site.
	16(iv)	

Project Environmental Consultants

IKAMVA Consulting has been appointed by IMOGENE as the independent Environmental Assessment Practitioners to undertake the application for environmental authorisation process.

Current Infrastructure on site

There are currently overnight tents that are used as accommodation facilities at all the sites.These tents can accommodate a number of between 10 and 15 people at any given time. They are all situated either directly or indirectly along the hiking trails. The camps have open pit toilet system. The sites are all situated close to permanent and seasonal water bodies (springs and streams). This is currently the only source of water for these facilities but fortunately all of the water inside the Nature Reserve is clean and safe for human consumption. The unfortunate part is that not all the water sources near these facilities are permanent and some permanent water sources have small quantities of water. Permanent water sources are only found at the following camping sites: Groot Tuin, Brakwater, Kareboos, Swartkliphuis, Olienhoutbos, Driefontein, Kameel se gat, and Suikerbosfontein. Places such as Praamkoppie, Doltuin, and Bo-kloof have periodically available water.

Apart from the tents, braai areas which are about to be phased out, and open pit toilets, there are no other forms of services at the camping sites. Visitors have to bring all the basic equipment and other necessities by themselves and use the nearby water resources to do their chores.

2. FEASIBLE AND REASONABLE ALTERNATIVES

"Alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;

(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application.Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

In addition to the alternatives that have been highlighted above, the Integrated Environmental Management Information Series 11 (DEAT, 2004) extends the types or categories of alternatives and these include Demand alternatives, Scheduling alternatives, Input alternatives, Routing alternatives, and Scale alternatives which need to be assessed in an EIA process.

It must be noted that a Feasibility Study was undertaken by the national Department of Environmental Affairs for the proposed development. Various alternatives were assessed and the conclusion of the study identified the construction of the log cabins and the methods identified in this document. It is not feasible nor necessary to assess other alternatives as all the parties concerned with the project are of the same view that the preferred alternatives are best suited for this kind of development at this particular site/area. Alternatives have not been assessed during the EIA phase of the project. The following describes the reasons as to why alternatives were not assessed:

(a) **the property on which or location where it is proposed to undertake the activity;**

No site alternatives were assessed during the EIA phase of this project for these reasons:
The proposed project is an upgrade of an existing activity at existing sites. The log cabins are to be built at the existing camp sites in most of the sites and in open spaces directly adjacent to the existing tent sites where the existing camp sites are close to water bodies, or are under trees that would need to be disturbed. At all these sites, the open spaces are very close (less than 50m) to the tents and they are therefore assessed as part of the existing sites.
The existing sites have been identified as being highly desirable from both environmental and technical perspectives for the construction of the log cabins.
The EAP, Applicant, Project Funder, and the Project team, all came to a conclusion that it will not be feasible whatsoever to assess other site alternatives because the proposed sites are already disturbed and therefore there will be minimal disturbance to the environment. The area of the nature reserve is considered as an area that has its biodiversity very sensitive to disturbance.

(b) **the type of activity to be undertaken;**

No activity alternatives were assessed in this report as the existing sites have been identified as highly desirable for the establishment of the log cabins. This is the preferred activity to other activities at the nature reserve.

(c) **the design or layout of the activity;**

Design and layout alternatives were not assessed during the compilation of this report. This is mainly because the preferred designs have been identified as having very limited environmental impacts on the proposed site/area and are technical viable. No feasible nor reasonable alternatives were therefore assessed.

(d) **The scale of the activity/project**

Scale alternatives were not assessed for this proposed activity. The proposed project area has more than 10 camping sites which are connected by hiking trials. However, due to financial and technical considerations it was agreed during the planning phase that only 10 sites will be upgraded from tents to

log cabins. Increasing the number of the log cabins and other proposed activities will not pose any new significant negative impact as long as the activity/project deliverables will be done at the existing sites. Decreasing the scale of the project will not relieve the site/area from being subjected to potential negative impacts but will potentially impose a wide array of environmental, economic and social impacts.

(e) **The demand for the activity**

Assessing demand alternatives for this proposed activity will not be practical nor reasonable, therefore they were not assessed.

(f) **Route to be used for the activity**

No route alternatives were assessed during the compilation of the report mainly because the activity is not a route activity and it is not reasonable to look for alternative routes for this particular activity. It is of importance to note that the project will be done at existing sites and there are already existing routes to the sites.

(g) **Scheduling alternatives for the activity**

Scheduling alternatives have not been identified or assessed in this report. This aspect will be finalised once the final design of the project has been completed. In terms of impacts that these alternatives may pose, the EAP is of the opinion that the activity will not make any significant difference whether the log cabins and their associated structures or infrastructure are constructed concurrently or in phases as long as the mitigation measures that are stipulated in the EMPr are adhered to.

(h) **Input alternatives of the activity**

Input alternatives have not been assessed during compilation of this report.

i) **the technology to be used in the activity;**

Technology alternatives have not been assessed during the compilation of the report.The preferred technology to be used has been identified as the most practical and reasonable one. The project is generally labour intensive with construction structures to be used having to be delivered to site as prefabricated structures and this is the preferred method. This is mainly because of the topography of the area as well as biodiversity sensitivity.

(i) **The operational aspects of the activity; and**

No operational alternatives were assessed as no feasible and reasonable alternatives were identified that are relevant to the proposed project.

(j) **The option of not implementing the activity.**

This option is assessed as a 'No Go' alternative in this Basic Assessment Report.

Paragraphs 3 – 13 below should be completed for each alternative.

3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.
List alternative sites, if applicable.

Please note that this project involves the construction of 10log cabins at different areas within the Nature Reserve. There are 10 sites within the Nature Reserve that are proposed for the activity. These are not alternative sites but existing sites where the log cabins will be constructed simultaneously. Because of the sensitivity of the area, the activity is proposed at the existing sites where there are overnight tents to avoid further disturbance to the ecosystem.
The co-ordinates for the proposed activities are as follows (also see the locality maps on Appendix A):

Log cabins:

1. Olienhoutbos: 31º 28' 41.95" S 19º 03' 24.51"E
2. Driefontein: 31º 30' 41.42" S 19º 07' 04.15"E
3. Praamkoppie: 31º 28' 53.33" S 19º 02' 01.39"E
4. Kareboos: 31º 28' 21.08" S 19º04' 51.95"E
5. Swartkliphuis: 31º 28' 46.46" S 19º 05' 02.33"E
6. Bo Kloof: 31º 30' 15.58" S 19º 02' 43.16"E
7. Doltuin: 31º 29' 23.28" S 19º 04' 15.47"E
8. Brakwater: 31º 27' 54.39" S 19º 04' 49.58"E
9. Suikerbosfontein: 31º 30' 20.97" S 19º 04' 35.13"E
10. Kameel se gat: 31º 30' 46.88" S 19º 06' 51.40"E

Pedestrian Bridges:

1. Driefontein 31° 30' 40.04"S 19° 07' 04.77"E
2. Kameelsegat 31° 30' 50.32"S 19° 05' 34.52"E
3. Suikerbosfontein 1 31° 30' 07.30"S 19° 04' 34.66"E
4. Suikerbosfontein 2 31° 29' 57.48"S 19° 04' 45.42"E
5. Doltuin 31° 29' 23.81"S 19° 04' 15.02"E
6. Saaikloof 1 31° 27' 18.02"S 19° 04' 13.62"E
7. Saaikloof 2 31° 27' 18.95"S 19° 03' 37.15"E
8. Saaikloof 3 31° 27' 13.82"S 19° 03' 41.36"E
9. Saaikloof 4 31° 27' 08.67"S 19° 03' 40.82"E
10. Eland se Kliphuis 31° 28' 51.08"S 19° 05' 34.52"E

Hydraulic Structures:

a) 1800 x 900 culvert

1. 31° 27' 51.87"S 19° 04' 51.85"E
2. 31° 28' 14.85"S 19° 04' 28.04"E
3. 31° 28' 19.60"S 19° 04' 17.62"E

b) Single Pipe Concrete Culvert

1. 31° 27' 50.04"S 19° 04' 53.02"E
2. 31° 28' 06.09"S 19° 04' 30.85"E
3. 31° 28' 16.66"S 19° 04' 27.20"E
4. 31° 28' 22.71"S 19° 04' 07.88"E
5. 31° 28' 25.73"S 19° 03' 43.59"E
6. 31° 28' 39.93"S 19° 02' 06.74"E

c) Double Box Culvert

1. 31° 28' 22.77"S 19° 03' 35.16"E

2. 31° 28' 39.93"S 19° 02' 40.42"E

d) Concrete Drift

1. 31° 28' 25.42"S 19° 03' 42.15"E
2. 31° 28' 34.90"S 19° 02' 24.07"E

	Latitude (S):		**Longitude (E):**	
Alternative:				
Alternative S1[2] (preferred or only site alternative)				
Alternative S2 (if any)				
Alternative S3 (if any)	o	'	o	'

In the case of linear activities:

Alternative:	**Latitude (S):**		**Longitude (E):**	
Alternative S1 (preferred or only route alternative)				
• Starting point of the activity	o	'	o	'
• Middle/Additional point of the activity	o	'	o	'
• End point of the activity	o	'	o	'
Alternative S2 (if any)				
• Starting point of the activity	o	'	o	'
• Middle/Additional point of the activity	o	'	o	'
• End point of the activity	o	'	o	'
Alternative S3 (if any)				
• Starting point of the activity	o	'	o	'
• Middle/Additional point of the activity	o	'	o	'
• End point of the activity	o	'	o	'

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

4. PHYSICAL SIZE OF THE ACTIVITY

The preferred size of the activity is approximately 80.5 square metres at each of the ten sites. The combined physical size of the activityat the Oorlogskloof Nature Reserve is approximately 805 square metres.

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[3] (preferred activity alternative)	**805m²**
Alternative A2 (if any)	m²
Alternative A3 (if any)	m²

or, for linear activities:

	Length of the activity:
Alternative:	

[2] "Alternative S.." refer to site alternatives.

[3] "Alternative A.." refer to activity, process, technology or other alternatives.

Alternative A1 (preferred activity alternative)	m
Alternative A2 (if any)	m
Alternative A3 (if any)	m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

5. SITE ACCESS

Does ready access to the site exist?	**YES** ■
If NO, what is the distance over which a new access road will be built	m

Describe the type of access road planned:

Access to the sites is mainly by means of jeep tracks which make it difficult to access the sites by vehicle during rainy days. The main access road at the Nature Reserve will be upgraded by re-gravelling, laying hyson cells, installing stormwater management system, etc. However, the access road connects only three sites and the rest of the nature reserve has to be accessed through jeep tracks and on foot.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

6. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

6.1 the scale of the plan which must be at least a scale of 1:500;
6.2 the property boundaries and numbers of all the properties within 50metres of the site;
6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
6.4 the exact position of each element of the application as well as any other structures on the site;
6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
6.6 all trees and shrubs taller than 1.8metres;
6.7 walls and fencing including details of the height and construction material;
6.8 servitudes indicating the purpose of the servitude;
6.9 sensitive environmental elements within 100metres of the site or sites including (but not limited thereto):
- rivers;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;

- areas with indigenous vegetation (even if it is degraded or invested with alien species);

6.10 for gentle slopes the 1metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and

6.11 the positions from where photographs of the site were taken.

7. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R18 764 025.00
What is the expected yearly income that will be generated by or as a result of the activity?	R4,896,732.00
Will the activity contribute to service infrastructure?	YES [X]
Is the activity a public amenity?	YES [X]
How many new employment opportunities will be created in the development phase of the activity?	130
What is the expected value of the employment opportunities during the development phase?	R7,344,817.00
What percentage of this will accrue to previously disadvantaged individuals?	100%
How many permanent new employment opportunities will be created during the operational phase of the activity?	2
What is the expected current value of the employment opportunities during the first 10 years?	+/- R2,000,000.00
What percentage of this will accrue to previously disadvantaged individuals?	100%

9(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

NEED:			
1.	Was the relevant provincial planning department involved in the application?	YES	[X]
2.	Does the proposed land use fall within the relevant provincial planning framework?	YES	[X]
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:		

	N/A

DESIRABILITY:			
1.	Does the proposed land use / development fit the surrounding area?	YES	
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES	
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	
4.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
	N/A		
5.	Will the proposed land use / development impact on the sense of place?		NO
6.	Will the proposed land use / development set a precedent?		NO
7.	Will any person's rights be affected by the proposed land use / development?		NO
8.	Will the proposed land use / development compromise the "urban edge"?		NO
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		
	N/A		

BENEFITS:			
1.	Will the land use / development have any benefits for society in general?	YES	
2.	Explain:		
	The objectives of the activity are to: ➢ Promote tourism ➢ Promote sustainable economic growth ➢ Promote Small, Medium and Micro Enterprise (SMME) sector ➢ Capacity building and skills development ➢ Play a role in poverty alleviation through job creation ➢ Promote environmental conservation		
	During construction phase of the activity, skills and jobs will be developed. This will generate income in the community and skills development that will enable the community to prosper. Training and general education in aspects such as Health and Safety, HIV and Aids, Environmental Awareness, etc. of the construction workers in various aspects of the project will have long term positive impacts on the society. The operational phase of the activity will boost the economy of the area. Now that the facilities inside the Nature Reserve will be upgraded, an increase in number of tourists will be expected. Job opportunities will be created during operational phase of the activity, which will vary from temporal to permanent. Skills development will also be a major contributor to the well-being of the local people.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES	
4.	Explain:		
	All the employed unskilled people in the project are from the local area of Hantam Local		

	Municipality. Therefore employment opportunities and skills development are focussed entirely to the local people. After project completion the workers will have the acquired skills and expertise to be sustain their lives and that of the society which they live in. This trend will also apply during the operational phase.

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
The Constitution of South Africa (Act 108 of 1996)	Department of Justice	18 December 1996
The National Environmental Management Act (Act 107 of 1998)	Department of Environmental Affairs	27 November 1998
NEM: Protected Areas Act (Act 31 of 2004)		18 February 2004
NEM: Biodiversity Act (Act 10 of 2004)		7 June 2004
NEM: Air Quality Act (Act No. 39 of 2004)		24 February 2004
NEM: Waste Act (Act No. 59 of 2008)		10 March 2009
White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity		July 1997
National Forests Act (Act 84 of 1998)	Department of Forestry	30 October 1998
The National Environmental Management Act, 1998: Environmental Impact Assessment Regulations 2010	Department of Environmental Affairs	18 June 2010
Occupational Health and Safety Act (Act 85 of 1993	Department of Labour	23 June 1993
Health Act (Act No 61 of 2003)	Department of Health	23 July 2004
Hazardous Substances Act (Act No. 15 of 1973		26 March 1973
National Water Act (Act No 36 of 1998)	Department of Water Affairs	26 August 1998
National Heritage Resources Act (Act 25 of 1999)	Department Of Arts and Culture	28 April 1999
Conservation of Agricultural Resources Act (Act 43 of 1983)	Department of Agriculture	21 April 1983
National Veld and Forest Fire Act (Act 101 of 1998)	Department of Forestry	19 November 1998
Northern Cape Conservation Act (Act No. 9 of 2009	Department of Environment and Nature Conservation (provincial)	01 January 2012
Relevant municipal by-laws and ordinances	Namakwa and Hantam Municipalities	

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES ■
If yes, what estimated quantity will be produced per month?	$3m^3$
How will the construction solid waste be disposed of (describe)?	

Solid waste will be separated at source. Different bins will be used to accept waste materials such as glass, plastic, cans/tins, paper & cardboardand domestic waste. The waste will be kept in scavenger and weather proof litter bins. Waste can be temporarily kept at a central storage container within the project area and be transported out of the nature reserve at least once a week.

Where will the construction solid waste be disposed of (describe)?

All solid waste materials will be disposed of at aregistered landfill site in Calvinia.

Will the activity produce solid waste during its operational phase?	YES	
If yes, what estimated quantity will be produced per month?	1m^3	

How will the solid waste be disposed of (describe)?

The waste that will be produced is the normal household waste, which will be very minimal. Waste will be temporarily kept at the scavenger proof waste bins at the sites. The waste should be taken out of the sites preferably once a week.

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Solid waste will be disposed of at the CalviniaLandfill site.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?		NO

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?		NO

If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?		NO
If yes, what estimated quantity will be produced per month?	N/A	
Will the activity produce any effluent that will be treated and/or disposed of on site?	YES	

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?		NO

If yes, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Water from the ablution facilities will be re-used. A waste water treatment system which will have a pump which operates by means of a solar powered battery and will have a filter and chopper to manage solids and other foreign objects. The water will be pumped back from the septic tank through the system via a chlorine treatment area and into the ablutions.

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?	YES	
If yes, is it controlled by any legislation of any sphere of government?		NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
If no, describe the emissions in terms of type and concentration:

Small quantities of exhaust emissions will be generated during the construction phase by vehicles transporting the construction materials. These emissions are low concentrations and not governed by any legislation.

11(d) Generation of noise

Will the activity generate noise?	YES	
If yes, is it controlled by any legislation of any sphere of government?		NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
If no, describe the noise in terms of type and level:

Vehicles in the form of 4x4 bakkies and small (6m³) trucks will be transporting the materials and will contribute to a noise generation inside the reserve. The amount of noise generated will be very minimal and is not governed by any legislation. This noise will be on very few occasions and will not cause any disturbance whatsoever as the vehicles will have installed silencer units.

12. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

municipal	water board	**groundwater**√	**river, stream, dam or lake**√	**other**√ (**rainwater tanks**)	the activity will not use water

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:	10 800litres at each site.
Does the activity require a water use permit from the Department of Water Affairs?	YES

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

A meeting was held with the Department of Water Affairs on the 19th of June 2012 regarding application for stream crossings. This water use is General Authorised in terms of the National Water Act (Act No. 36 of 1998) but a written authorisation will be issued by the Department of Water Affairs once they receive all the required information about the proposed water use.

13. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

The log cabins will be designed to accommodate the useof solar energy.
Energy saving measures such as energy saving light bulbs will be used during operation activities.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

The log cabins will be designed to accommodate solar panels. The design of the log cabins will be based on the PLEA (Passive and Low Energy Architecture)principle. Low energy architecture involves housing units having the minimum energy requirement for heating, cooling, lighting, etc. Measures to be considered in terms of the PLEA principle include daylight designs, thermal insulation and natural ventilation. In addition, the log cabins can beplaced in such positions to reduce the need for heating, etc.The main aim behind incorporating such measures is to contribute to sustainable development with reduced energy consumption, contributing to a reducedcarbon footprint.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines,etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No. (e.g. A): [ ]

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? [■] NO

If YES, please completethe form entitled "Details of specialist and declaration of interest" for each specialist thus appointed:
All specialist reports must be contained in Appendix D.

Property description/physical address:	**Oorlogskloof Nature Reserve, Nieuwoudtville, Northern Cape Province, South Africa**
	(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.
	See Appendix C
	In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.
Current land-use zoning:	**Conservation area (Provincial Nature Reserve)**
	In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to , to this application.

Is a change of land-use or a consent use application required?	**NO**
Must a building plan be submitted to the local authority?	**YES**

Locality map:

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:

- an indication of the project site position as well as the positions of the alternative sites, if any;
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

[redacted]	**1:50 – 1:20**√	**1:20 – 1:15**√	[redacted]	[redacted]	[redacted]	[redacted]

Alternative S2 (if any):

[redacted]	**1:50 – 1:20**	**1:20 – 1:15**	[redacted]	[redacted]	[redacted]	[redacted]

Alternative S3 (if any):

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline
2.2 Plateau
2.3 **Side slope of hill/mountain**√
2.4 Closed valley
2.5 **Open valley**√
2.6 Plain
2.7 Undulating plain / low hills
2.8 Dune
2.9 Seafront

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	[redacted]	NO	[redacted]	[redacted]	[redacted]	[redacted]
Dolomite, sinkhole or doline areas	[redacted]	NO	[redacted]	[redacted]	[redacted]	[redacted]
Seasonally wet soils (often close to water bodies)	YES	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Unstable rocky slopes or steep slopes with loose soil	[redacted]	NO	[redacted]	[redacted]	[redacted]	[redacted]
Dispersive soils (soils that dissolve in water)	[redacted]	NO	[redacted]	[redacted]	[redacted]	[redacted]
Soils with high clay content (clay fraction more than 40%)	[redacted]	NO	[redacted]	[redacted]	[redacted]	[redacted]
Any other unstable soil or geological feature	[redacted]	NO	[redacted]	[redacted]	[redacted]	[redacted]
An area sensitive to erosion	YES	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition^{E}√	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	**Building or other structure**√	[redacted]

If any of the boxes marked with an "^{E} "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Land Use Characteristics	YES/NO	Description of influence
5.1 Natural area	YES	The nature reserve is predominantly a pristine

		natural environment. Some small portions of natural grass, small plants and shrubs will need to be removed.
5.2 Low density residential	YES	Farm houses are found at the boundary of the nature reserve. However, they are not expected to have any influence on the proposed project.
5.3 Medium density residential	NO	N/A
5.4 High density residential	NO	N/A
5.5 Informal residential[A]	NO	N/A
5.6 Retail commercial & warehousing	NO	N/A
5.7 Light industrial	NO	N/A
5.8 Medium industrial[AN]	NO	N/A
5.9 Heavy industrial[AN]	NO	N/A
5.10 Power station	NO	N/A
5.11 Office/consulting room	NO	N/A
5.12 Military or police base/station/compound	NO	N/A
5.13 Spoil heap or slimes dam[A]	NO	N/A
5.14 Quarry, sand or borrow pit	NO	N/A
5.15 Dam or reservoir	NO	N/A
5.16 Hospital/medical centre	NO	N/A
5.17 School	NO	N/A
5.18 Tertiary education facility	NO	N/A
5.19 Church	NO	N/A
5.20 Old age home	NO	N/A
5.21 Sewage treatment plant[A]	NO	N/A
5.22 Train station or shunting yard[N]	NO	N/A
5.23 Railway line[N]	NO	N/A
5.24 Major road (4 lanes or more)[N]	NO	N/A
5.25 Airport[N]	NO	N/A
5.26 Harbour	NO	N/A
5.27 Sport facilities	NO	N/A
5.28 Golf course	NO	N/A
5.29 Polo fields	NO	N/A
5.30 Filling station[H]	NO	N/A
5.31 Landfill or waste treatment site	NO	N/A
5.32 Plantation	NO	N/A
5.33 Agriculture	YES	The project will not have impact on the neighbouring farming community.
5.34 River, stream or wetland	YES	The quality of surface water will be impacted upon by the proposed development, especially during the installation of stream crossings.
5.35 Nature conservation area	YES	Without the implementation of the mitigations, construction phase will have an impact on the conservation status of the nature reserve.
5.36 Mountain, koppie or ridge	YES	These are not expected to have an effect on the authorisation/rejection of the application.
5.37 Museum	NO	N/A

5.38 Historical building	NO	N/A
5.39 Protected Area	YES	The influx of a large number of construction team will have a temporal to permanent negative impact on the living and non-living organisms in the nature reserve.
5.40 Graveyard	NO	N/A
5.41 Archaeological site	YES	Direct contact with the San rock paintings may deteriorate the quality of the paintings.
5.42 Other land uses (describe)	NO	N/A

If any of the boxes marked with an "N "are ticked, how will this impact / be impacted upon by the proposed activity?

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? **N/A**
If YES, specify and explain:
If YES, specify:

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.
If YES, specify and explain:
If YES, specify:

6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including	YES	■
Archaeological or palaeontological sites, on or close (within 20m) to the site?	■	
If YES, explain:	**The nature reserve has many areas that have San paintings. The existing camping sites are situated close (but none within 20m) to San paintings/rock art, which are significant archaeological sites in the area.**	
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.		
Briefly explain the findings of the specialist:	**N/A**	
Will any building or structure older than 60 years be affected in any way?	■	**NO**
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	■	**NO**

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

(a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  (i) the site where the activity to which the application relates is or is to be undertaken; and
  (ii) any alternative site mentioned in the application;

(b) giving written notice to—
  (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  (v) the municipality which has jurisdiction in the area;
  (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  (vii) any other party as required by the competent authority;

(c) placing an advertisement in—
  (i) one local newspaper; or
  (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation54(c)(ii); and
(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  (i) illiteracy;
  (ii) disability; or
  (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

(a) indicate the details of the application which is subjected to public participation; and
(b) state—
  (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
  (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
  (iii) the nature and location of the activity to which the application relates;
  (iv) where further information on the application or activity can be obtained; and
  (iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as

Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

6. AUTHORITY PARTICIPATION

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

List of authorities informed:

Name	Organisation	Designation	Contact Details	Email
Mr. N. Viljoen	Hantam L.M	IDP Manager	Tel: 0273418500 Fax:0273418501	idp@hantam.gov.za
Mr. C. Du Plessis		Municipal Manager		municipalmanager@hantam.gov.za
Mrs.Wischut		Ward Councillor	Tel: 0731638145 Fax:0272188701	
Ms Bettie Bezuidenoudt	Namakwa D.M	Community Services Manager	Tel:0277128000 Fax:0277128040	bettieb@namakwa-dm.gov.za
Mr. Chris Fortuin		Tourism Manager		chrisf@namakwa-dm.gov.za
Dr Mariagrazia Galimberti	SAHRA	H.O.D.	Tel:0214624502 Fax:0214624509	mgalimberti@sahra.org.za
Kathryn Smuts		Heritage Officer		ksmuts@sahra.org.za
Livhu Nemakonde	Department of Forestry	Provincial Manager	Tel: 0538020523 Fax:0538321206	livhuwanen@daff.gov.za
Ms Jackie Mans		Protected Species Manager	Tel: 0543385860 Fax:0543340030	MansJ@daff.gov.za
Mr. S. Mbanjwa	Department of Environment and Nature Conservation		Tel:0538077430 Fax:0538313530	smbanjwa@ncpg.gov.za
Mr. D. Badenhorst			Tel: 053 8077430 Fax:086 5373 719	pamnc@vodamail.co.za
Mr. Wessel Pretorius		Reserve Manager	Tel: 0272181010 Fax: 0272181159	oorlogskloof@gmail.com
Mr. Mashudu Murovhi	Department of Water Affairs	Catchment Manager	Tel: 0219416237 Cell: 0828048211	murovhim@dwa.gov.za
Mr. A. Abraham	NC-Department of Water Affairs	Manager; Water Sector Regulation and Use	Tel:0538308802 Fax:0538314534	Abe@dwaf.gov.za

List of authorities from whom comments have been received:

Comments were received from the Department of Forestry on the amended BAR (July 2012). See Appendix E. This report has been sent to authorities for comments which will be sent directly to the Competent Authority.

7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate,the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority. Proof of any such agreement must be provided, where applicable.

■	NO

Has any comment been received from stakeholders?
If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Comments from Department of Forestry regarding the July BAR have been attached in Appendix E. No comments received from other stakeholders to date. Comments regarding this report will be sent directly to the Department.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

The Basic Assessment has been sent to Interested and Affected Parties for comments. Interested and Affected Parties did not comment on the Final Basic Assessment Report (February 2012) and Amended Basic Assessment Report (June 2012). Interested and Affected Parties have been given 14 days to comment on this re-amended Basic Assessment Report and they have been advised to send comments directly to the Department.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Annexure E):

None

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIEDIMPACTS ANDPROPOSED MITIGATION MEASURES

List thepotential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase,including impacts relating to the choice of site/activity/technology alternativesas well as the mitigation measures that may eliminate or reduce the potential impacts listed.

Alternative (preferred alternative)

An Impact Assessment in line with the requirement of the Environmental Impact Assessment Regulations, 2010 have been undertaken and are provided in Section 2.1 to 2.3 below.
Impact on all elements of the receiving environment has been considered. Only significant impacts identified have been rated in order to determine the Impact Risk.
The Impact Assessment was undertaken by using the methodology provided in the Table below.

Impact Assessment Methodology

The Environmental Impact Assessment Regulations, 2010, promulgated in terms of Section 24(5) of the NationalEnvironmental Management Act (Act 107 of 1998) prescribes requirements to be adhered to when undertaking impactassessments. Requirements for undertaking impact assessments for Basic Assessments and full Environmental ImpactAssessments are outlined in the following sections of the EIA Regulations:

- Regulation 543, Section 22, 2(i) – Basic Assessment Impact Assessment Requirements: and
- Regulation 543, Section 32, 2(I) – Environmental Impact Assessment Requirements

In terms of these Regulations, the following should be considered when undertaking an impact assessment:

- A description and assessment of the significance of any environmental impacts, including –
  a) Cumulative impacts, that may occur as a result of the undertaking of the activity during project life cycle;
  b) Nature of the impact;
  c) Extent and duration of impact;
  d) The probability of impact occurring;

e) The degree to which the impact can be reversed;
f) The degree to which the impact may cause irreplaceable loss of resources; and
g) The degree to which the impact can be mitigated.

In terms of the above legislated requirements a standard impact assessment methodology was compiled. In order tocompile the impact assessment methodology a review of existing impact assessment methodologies utilised by consultantsin the field was undertaken. Furthermore, the following document as compiled by the former Department of EnvironmentalAffairs and Tourism (DEAT) was utilised during the compilation for the impact assessment methodology:

DEAT (2004) Cumulative Effects Assessment, Integrated Environmental Management, Information Series 7, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

A description of the method for assessing the above criteria as well as the method for determining impact risks are provided in Sections A to I below.

A. Cumulative Impacts

Cumulative impacts can occur over different temporal and spatial scales by interacting, combining and compounding so that the overall effect often exceeds the simple sum of previous effects. The spatial scale can be local, regional or global, whilst the frequency or temporal scale includes past, present and future impacts on a specific environment or region.

Cumulative effects can simply be defined as the total impact that a series of developments, either present, past or future, will have on the environment within a specific region over a particular period of time.

Potential cumulative impacts on all elements of the receiving environment are addressed for all project phases (preconstruction, construction, operational and decommissioning), before and after implementation of mitigation measures.

B. Significance/Magnitude/Nature of Impacts

The significance or magnitude of an impact refers to the importance of an impact. When rating the extent of an impact, it is important to also rate the significance of an impact in order to determine the actual importance of an impact.

For example, the size of an area affected by atmospheric pollution may be extremely large, but the significance of this effect is dependent on the concentration or level of pollution. If the concentration is great, the significance of the impact would be High or Very High, but if it is dilute it would be Very Low or Low.

The significance of impacts has been grouped into five classes, as outlined in the Table below.

RATING		DESCRIPTION
5	Very High	Of the highest order possible within the bounds of impacts which could occur. In the case of adverse impacts: there is no possible mitigation and/or remedial activity which could offset the impact. In the case of beneficial impacts, there is no real alternative to achieving this benefit.
4	High	Impact is of substantial order within the bounds of impacts, which could occur. In the case of adverse impacts: mitigation and/or remedial activity is feasible but difficult, expensive, time consuming or some combination of these. In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.
3	Moderate	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur. In the case of adverse impacts: mitigation and/or remedial activity are both feasible and fairly easily possible. In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.

2	Low	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts: mitigation and/or remedial activity is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.
1	Very Low	Impact is negligible within the bounds of impacts which could occur. In the case of adverse impacts, almost no mitigation and/or remedial activity is needed, and any minor steps which might be needed are easy, cheap, and simple. In the case of beneficial impacts, alternative means are almost all likely to be better, in one or a number of ways, than this means of achieving the benefit. Three additional categories must also be used where relevant. They are in addition to the category represented on the scale, and if used, will replace the scale.
0	No Impact	There is no impact at all - not even a very low impact on a party or system.

C. Extent of the impact

The extent or spatial scale of an impact refers to whether an impact will occur at a local, regional, or global scale. The extent of impacts has been grouped into five classes, as outlined in the Table below.

RATING		DESCRIPTION
5	Global/National	The impact could/will occur on a national or global scale.
4	Regional/Provincial	The impact could/will occur at a Regional/Provincial Level
3	Local	The impact will affect an area up to 5 km from the proposed site.
2	Study area	The impact will affect an area not exceeding the Boundary of the study site
1	Isolated/proposed sites	The impact will affect an area no bigger than the development footprint.

D.Duration of Impacts and Degree to which impacts can be reversed

The duration or temporal scale of an impact refers to actual impact timeframe, i.e. how long will impacts to the environment last. The reversibility of impacts is directly linked to the duration of impacts. For e.g. permanent impacts are irreversible impacts, whereas, incidental impacts are immediately reversible. The duration and reversibility of impacts has been grouped into five classes, as outlined in the Table below.

RATING		DESCRIPTION	REVERSIBILITY
1	Incidental	The impact will be limited to isolated incidences that are expected to occur very sporadically.	Immediately reversible
2	Short term	The environmental impact identified will operate for the duration of the construction phase or a period of less than 5 years, whichever is the greater.	Quickly reversible
3	Medium	The environmental impact identified will operate for the duration of life of the project.	Reversible over time
4	Long term	The environmental impact identified will operate beyond the life of the project.	Reversible over the long term
5	permanent	The environmental impact will be permanent	Irreversible, impact is permanent

E. Probability of Impact Occurring

The probability of an impact refers to the likelihood of an impact occurring. The probability of impacts has been grouped into five classes, as outlined in the Table below.

RATING	DESCRIPTION
1	Practically impossible that impact will occur
2	Unlikely that impact will occur
3	Impact could occur
4	Very Likely that impact will occur
5	Impact will occur or has already occurred

F. Degree to which the impact may cause irreplaceable loss of resources (Intensity or Severity of an Impact)

The degrees to which an impact may cause irreplaceable loss of resources are determined based on the outcome of the impact risk assessment. High risk impacts in sensitive areas are more likely to result in irreplaceable loss of resources compared to low risk impacts.

RATING	DESCRIPTION
High	Disturbance or pristine areas that have important conservation value. Destruction of rare or endangered species.
Medium	Disturbance of areas that have potential conservation value or rare of use as resources. Complete change in species occurrence or variety.
Low	Disturbance of degraded areas, which have little conservation value. Minor change is species occurrence or variety.

G. The degree to which the impact can be mitigated

The degree to which an impact can be mitigated are determined by comparing the impact risk class prior to implementation of mitigation measures to the impact risk class after implementation of mitigation measures. If for e.g. an impact risk class can be reduced from a high to very low, then it is likely that there is a high potential that an impact can be mitigated.

RATING	DESCRIPTION
High	High Potential to mitigate negative impacts to the level of insignificant effects.
Medium	Potential to mitigate negative impacts. However, the implementation of mitigation measures may still not prevent some negative effects.
Low	Little or no mechanism to mitigate negative impacts.

H. Degree of Certainty

As it is not possible to be 100% certain of all facts, a standard “degree of certainty” has been incorporated into this Impact Assessment Methodology to indicate the degree of the EAP’s certainty regarding impact ratings.
As with all studies it is not possible to be 100% certain of all facts, and for this reason a standard “degree of certainty” scale will be used as outlined in the Table below. When very detailed specialist studies are available or have been undertaken as part of a project, impacts can be more accurately determined.

RATING	DESCRIPTION
Definite	More than 90% sure of a particular fact.
Probable	Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.
Possible	Between 40 and 70% sure of a particular fact or of the likelihood of an impact occurring.

Unsure	Less than 40% sure of a particular fact or the likelihood of an impact occurring.
Can't know	The consultant believes an assessment is not possible even with additional research.
Don't know	The consultant cannot, or is unwilling, to make an assessment given available information.

A. PRE-CONSTRUCTION PHASE (PLANNING & DESIGN)

Alternative sites 1 (preferred alternatives)

Impacts	Mitigation measures
1. Direct Impacts: No significant direct impacts expected during this phase 2. Indirect Impacts: No significant indirect impacts foreseen during this phase 3. Cumulative Impacts: No significant cumulative impacts foreseen at this stage	No mitigation measures needed

Alternative sites 2

Impacts	**Mitigation measures**
Alternative sites will be open spaces of land close to the existing camping sites. Impacts of the preferred alternatives and the second alternatives are the same.	Mitigation measures are the same as that of the preferred alternatives.

No Go alternative

Impacts	**Mitigation measures**
1. Direct Impacts: No direct impacts expected during this phase. Status quo will remain. 2. Indirect Impacts: No indirect impacts foreseen during this phase 3. Cumulative Impacts: No cumulative impacts foreseen at this stage	No impacts have been identified, therefore no mitigation measures required.

B. CONSTRUCTION PHASE

1) Land use and capability

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	The proposed sites are currently used as camping facilities; therefore the land use will remain unchanged. However, the camping facilities were just small tents which are mainly put over the ground. The new structures will involve excavation and other activities, and also the structures will be larger and more visible.	-	Given the current status and nature of the site, it is vital that integrated environmental management principles and tools be highly considered and implemented before construction work commences. Project activities should take the nature of the surrounding
Indirect Impact	No significant indirect impacts foreseen		
Cumulative Impact	No significant cumulative impacts foreseen		

			land use into cognisance.

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Land use and capability	Moderate	Study area	Long term	Will occur	Definite	Low	Reversible over the long term.

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Land use and capability	Low	Study area	Incidental	unlikely	Probable	high

2) Soils (geology)

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Earthworks (albeit minor) are expected during construction phase, especially during construction of vehicular stream crossings. Soils in the area are mostly sandy in nature, thus putting it at risk of being easily eroded by water and wind. Soil erosion may occur where topsoil stockpiles are incorrectly managed; Loss of vegetation may also be an issue if unmanaged.	-	Contractors and any other personnel should keep within the existing sites and are to use only existing access roads. A method statement on erosion control showing clearly how cleared surfaces and stormwater will be managed on site during construction and rehabilitation will have to be provided prior to construction. Stripped topsoil will be used in the rehabilitation processes and for landscaping as is planned. Stormwater outfalls should be appropriately designed to minimise the likelihood of soil erosion. Should the area show signs of not rehabilitating, additional plant material (preferably local plants/grass) must be planted along the disturbed site. The site must be monitored during the regular maintenance program to ensure that no erosion occurs, nor that any alien invasive species should gain a foothold in the area. Maintenance staff must be able to identify and differentiate between indigenous and alien vegetation.
Indirect Impact	Sedimentation into the nearby watercourses.		
Cumulative Impact	Loss of soil fertility, water quality and disturbance of aquatichabitat, and accumulation of algae in the watercourses could result from inadequate soil management.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Soils	High	Study area	Medium term	Will occur	Definite	Low	Reversible over time

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Soils	Low	Isolated sites	Incidental	Could occur	possible	high

3) Air Quality

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Air quality will be affected through exhaust emissions and dust generation associated with vehicle and machinery movement and exhaust emissions. With mitigation measures in place, the impact of the construction phase on air quality is considered negligible.	-	Speed limit of 20 km/h must be set on site to minimise dust generation by vehicles. Dust suppression will be undertaken by watering relevant areas when necessary. Watering of steep slopes should be conducted in moderation and with an erosion monitoring system in place. Vehicles are to be maintained in good working order and must be regularly serviced so that emissions are within the permitted standard.
Indirect Impact	No significant indirect impacts expected.		
Cumulative Impact	No significant cumulative impacts expected.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Air quality	Moderate	Study area	Short term	Will occur	Definite	Low	Quickly reversible

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Air quality	Low	Isolated sites	Incidental	Could occur	possible	low

4) Damage to indigenous vegetation

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	The project area is well known for its vast diversity of plant species, some of which are classified as endemic, endangered, rare, and protected. Plant disturbance will require specialconsideration. Fortunately for this project, all the project sites are classified as already disturbed in such that there are existing camping facilities at all the sites and camping activity has been a continual occurrence. Although none of the endemic, endangered, rare or protected plants are found at the proposed sites, it is anticipated that some indigenous vegetation will be removed during construction. This impact is expected to be very minimal even before mitigation measures.	-	Vegetation may only be cleared within demarcated work area and only when it is necessary; Re-vegetate exposed areas with a suitable grass seed mix of indigenous species upon completion of construction activities; Alien invasive species are to be removed from any area within the construction area and disposed of in a permitted disposal site; Prevent channelling of stormwater.
Indirect Impact	No significant indirect impacts foreseen		
Cumulative Impact	No significant cumulative impacts foreseen.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Damage to indigenous vegetation	Low	Isolated sites	short term	Will occur	Definite	Low	Quickly reversible.

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Impact Risk	Degree of mitigation
Damage to indigenous vegetation	Low	Isolated sites	Incidental	Could occur	possible	low	high

5) Alien Invasive vegetation

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Alien invasive vegetation may pose a threat to the landscapes after construction as a result of removal of vegetation coupled with inadequate rehabilitation. Disturbance and exposure of soil facilitates the establishment of alien invasive plants, which often become difficult to control once established without competition.	-	Construction sites should be rehabilitated immediately(within a week) after construction has been completed; The maintenance staff, for the operational phase of the activity, must be educated with regards to the danger of the invasion of alien plants and must be encouraged to remove any species that become established.
Indirect Impact	Without proper alien vegetation control, the area may lose its nature conservation value. Invasive alien vegetation may outcompete the indigenous vegetation and create a myriad of problems to the functioning of the nature reserve.		
Cumulative Impact	Decrease or cease in value as tourist destination and risk of the project becoming a white elephant.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Alien invasive species	High	Local	Medium term	Will occur	Definite	Low	Reversible over time

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Alien invasive species	Low	Isolated sites	Incidental	Could occur	possible	high

6) Disturbance to fauna

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	The project area is a habitat to a vast array of vertebrates and invertebrates of both terrestrial and aquatic communities. These animals may be affected by the activity but within tolerable levels and have the capacity to relocate to the nearby areas. Direct human interference, such as feeding, hunting, etc. may have detrimental effects on the site fauna.	-	An animal Search and Rescue should be undertaken at all the sites prior to construction taking place. Animals found at or close to any of the construction areas should not be harmed but be removed to a suitable area within the nature reserve. Poaching of any description must be prohibited and perpetrators be prosecuted. Noise making activities must be allowed only during normal working hours.
Indirect Impact	Potential decrease in animal organisms (vertebrates and invertebrates).		
Cumulative Impact	Decrease in value as tourist destination and risk of the project becoming a white elephant.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Disturbance to fauna	Moderate	Local	Long term	Will occur	Definite	Low	Reversible over the long term

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Disturbance to fauna	Low	Isolated sites	Incidental	Could occur	possible	high

7) Aesthetics

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	The construction phase will have noticeable visual impact, considering the fact that the project area is an attraction to tourists for different reasons. Both humans and wild animals may be affected by the visibility of the log cabins and their associated infrastructure. However, visual impacts are considered very minimal and negligible.	-	Environmentally friendly colours, equipment, etc. should be used to minimise the aesthetics effect of the activity. Upon construction completion, a re-vegetation initiative will serve to improve the general loss of aesthetics.
Indirect Impact	No significant indirect impacts foreseen		
Cumulative Impact	No significant cumulative impacts foreseen.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Aesthetics	Moderate	Study area	Medium term	Will occur	Definite	Low	Reversible over time

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Aesthetics	Low	Isolated sites	Incidental	unlikely	possible	high

8) Surface and ground water contamination

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	The following can have impacts on water sources: Inadequately managed/serviced ablution facilities may result in runoff transferring contaminants into the surrounding environment; Spillage of any stored hazardous substances such as fuel, can contaminate soil, groundwater and surface water; Inappropriate responses to petrochemical or hazardous spill may result in ground water pollution; Contamination of soil during improper concrete mixing.	-	Use of the natural surround as ablutions will be forbidden; No human waste will be allowed to enter any water courses or natural drainage lines; Chemicals are to be stored in a bundedarea,with relevant labels; Spills are to be cleared and contaminated material disposed of at an appropriately permitted disposal site; Spills greater than 10L or which occur in areas where ground or surface water may beaffected are to be reported to the Competent Authority within24hrs; Spill kits to be kept on site. Cement will be mixed on an appropriately lined surface or on mixing trays and not directly on the ground; Cement mixing trays and other equipment should be located at a distance whereby nearby water courses and drainage lines are not impacted on; Cement residue should be removed from site and disposed of at an appropriately permitted disposal facility.
Indirect Impact	Poor stormwater control on site, and accidental hydrocarbon spillages from vehicles, could lead to contaminated surface water flowing onto adjacent water bodies and beyond.		
Cumulative Impact	No significant cumulative impacts foreseen.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Water contamination	Moderate	Local	Medium term	Will occur	Definite	Low	Reversible over time

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Water contamination	Low	Isolated sites	Incidental	unlikely	possible	high

9) Heritage Features/objects

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	The nature reserve as a whole has a rich and important heritage history. The Rock art found within the nature reserve and sometimes close to the proposed sites may be damaged by frequent close contact with humans (not with the actual construction activities); Damage to Cultural, heritage and paleontological artefacts that may be uncovered;		All the heritage objects/features in the nature reserve should be treated as 'No Go' areas for all the construction personnel. These areas should only be visited under strict supervision of the Reserve Manager or any other designated person. These areas may be demarcated during construction if necessary. Should heritage artefacts be discovered during construction, work at the point of the discovery will stop and the location will be clearly demarcated. South African Heritage Resources Agency (SAHRA) will be contacted immediately and construction will only recommence upon authorisation from SAHRA.
Indirect Impact	None foreseen.		
Cumulative Impact	Decrease in tourism/property value; Decrease in conservation value of the whole nature reserve.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Heritage features/objects	High	Study area	Medium term	Will occur	Definite	Low	Reversible over time

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Heritage features/objects	Low	Isolated sites	Incidental	Could occur	possible	high

10) Socio economic structure

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	This is a positive impact as construction activities will bring much needed employment opportunities for the communities of Nieuwoudtville and other surrounding areas. Positive impacts include: Job creation and skills development during construction will also assist in poverty alleviation in the area. The development will also increase the tourism potential of the nature reserve.	+	No mitigation measures
Indirect Impact	Poverty alleviation; Increased wealth and well-bieng in the local community; Increased tourism potential of the area		
Cumulative Impact	Secondary and tertiary job opportunities in the		

	project site and outside may have a long lasting effect on the local communities.		

11) Litter/solid waste

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Incorrectly contained waste storage may result in soil pollution, nuisance impacts, water contamination and visual impacts; The infrequent collection and incorrect storage will result in wind strewn litter, attraction of vermin and odours; Incorrect storage conditions and handling may result in ground water and land contamination, fires and health risks.	-	Weatherproof and scavenger proof bins shall be provided on site and emptied regularly; Waste should be ensured that it is sorted in appropriate receptacles. Waste bins shall be emptied on a regular basis or when full and the collected waste disposed of at a suitably permitted waste disposal site. Non-reusable building waste to be disposed of at a permitted disposal site or the recognised municipal disposal site. Hazardous waste will be kept in correctly sealed storage bins in a shaded and bunded area. Hazardous materials or substances will becollected into a designatedcontainer/containment area and disposed ofappropriately in a registered hazardous waste disposal site. Safe disposal certificates to be obtained for all hazardous wastes leaving the site.
Indirect Impact	Potential loss/death of animal organisms as a resultof ingesting and being chocked by the waste materials such as plastic and paper.		
Cumulative Impact	Problematic waste on site could result in the nature reserve losing its 'nature reserve' status and also losing its status as a tourism destination.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Solid waste	High	Study area	Medium term	Will occur	Definite	Low	Reversible over time

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Solid waste	Low	Isolated sites	Incidental	Could occur	possible	high

12) General Health

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Inadequately managed waste has a potential to attract nuisance animals such as rodents and could be a nuisance and a potential health concern to the personnel and wild animals on site. Human contact with wild animals may have negative effects on both parties concerned.	-	Workers should wear appropriate protective clothing at all times; Training of staff and workers on Occupational Health and Safety aspects will be mandatory and workers should be refreshed every three months, apart from every day 'Toolbox Talks'; Ample signage including 'no smoking' zones, safe eating areas will be installed
Indirect Impact	Should animals be endangered as a result of making contact with waste or any other		

	harmful construction material, injury or disease could occur and that could lead to animal fatalities.		at the working areas. Human contact with wild animals will be avoided wherever possible. Only people with the necessary expertise may be allowed to get into contact with wild animals.
Cumulative Impact	Decrease in conservation value of the area; Decrease in tourism potential of the area.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
General Health	High	Local	Long term	Will occur	Definite	Low	Reversible over the long term.

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Impact Risk	Degree of mitigation
General Health	Low	Isolated sites	Incidental	Could occur	possible	low	high

13) Safety and Security

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Potential vandalism mainly by animals such as baboons during construction phase; Potential conflict between animals and construction workers which can result in injuries and fatalities to both parties.	-	Security measures should be put in place to avoid and to minimise vandalism and human-animal conflicts; Food should be always kept in locked areas to discourage the animals from visiting the working area; Animals should not be fed by any of the staff and general workers.
Indirect Impact	Work stoppages and construction delays as a result of absenteeism, vandalism, etc.		
Cumulative Impact	No significant cumulative impacts foreseen		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Safety & Security	Moderate	Study area	Medium term	Will occur	Definite	Low	Reversible over time

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Safety & Security	Low	Isolated sites	Incidental	Could occur	possible	high

14) Fire outbreaks

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Incorrect storage and handling of hazardous material may result in fire outbreak; Indiscriminate smoking and disposal of cigarette butts may induce fire.	-	Dedicated smoking areas should be set aside at all the construction sites. Penalties should be imposed to those found smoking outside smoking zones; "No-smoking" signs to be placed in areas used where there may be fire
Indirect Impact	Air pollution may result from burning materials;		

	Safety risks: both plants and animals may be at risk during fire outbreak. Fires may also impose negative visual impacts		risk (oil/fuel storage areas, near dry vegetation, etc.); Basic fire fighting equipment shall be readily available on site; Employees to be made aware of the procedures in the event of a fire. All hazardous material should be kept in appropriate containers with bunds underneath.
Cumulative Impact	Decrease in property value and tourism potential.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Fire outbreaks	High	Local	Long term	Will occur	Definite	Low	Reversible over the long term.

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Fire outbreaks	Low	Isolated sites	Incidental	Could occur	possible	high

15. Noise

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Working vehicles and machinery may yield noise levels that are disturbing to the fauna at the project area.	-	Modern low noise emission vehicles and equipment shall be favoured on site. All working equipment and plant to be fitted with silencers yielding a maximum ambient noise level of 80 dB; Construction will be restricted to normal daytime working hours (07:00 – 17:00). No construction activities will take place during weekday evenings and night-time (after 17:00), on Saturdays after midday (12:00) and the entire day on Sundays. All noise-making equipment shall be turned off when not in use. All equipment shall be kept in goodworking order. All equipment shall be operated within specifications and capacity (i.e. do not overload and overrun machines). Compliance with the appropriate legislation with respect to noise is mandatory. The project personnel will familiarise themselves with, and adhere to, any local by-laws and regulations regarding the generation of noise.
Indirect Impact	No significant indirect impacts foreseen considering the fact that noise making activities will be done in the shortest possible time.		
Cumulative Impact	Nosignificant cumulative impacts foreseen		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Noise	Moderate	Local	Incidental	Could occur	Possible	Low	Immediately reversible

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Noise	Low	Isolated sites	Incidental	Could occur	Possible	high

No Go alternative

Impact	**Positive/Negative**
1. No additional job opportunities will be created;	Negative
2. No contribution to infrastructure and development of the area;	Negative
3. Continual use of existing unsafe and uncomfortable tents as shelter and the continual use of unsafe stream crossings	Negative
4. No additional attraction of the area to tourists	Negative
5. No construction associated risks (fires, spills of hazardous materials, etc.);	Positive
6. No impact on air quality and noise generation;	Positive
7. No potential soil erosion from earthworks and vehicle movement;	Positive
8. Potential soil and groundwater contamination from hydrocarbon spills, existing undesigned ablutions and illegal dumping activities;	Negative
9. No skills development;	Negative
10. No potential damage to heritage features/objects by construction personnel	Positive
11. No disturbance of fauna and flora by construction personnel	Positive
12. Reduced potential wealth and well being in the community.	Negative

C. OPERATIONAL PHASE

1. Air Quality

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Uncontrolled fires during braaing activities may affect ambient air quality; Frequent use of firewood and/or coal may decrease the air quality of the area. Visiting vehicles may create dust and emit harmful chemicals during site visits.	-	Braaing activities should only be allowed in dedicated areas and/or at certain times; The solar energy should be the priority during camping activities to avoid air quality problems; Fire fighting equipment should be installed at all the camping facilities. Speed limit of 20 km/h must be set on site to minimise dust generation by vehicles. Vehicles are must be checked against excessive emissions prior to entering the site.
Indirect Impact	No indirect impacts expected.		
Cumulative Impact	No cumulative impacts expected.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Air Quality	Moderate	Study area	Medium term	Will occur	Definite	Low	Reversible over time

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Air Quality	Low	Isolated sites	Incidental	unlikely	definite	high

2. Indigenous vegetation

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Unauthorised harvesting of indigenous vegetation for various reasons may happen during operational phase of the activity. Vehicles creating new tracks as a means of easy access or short cut have a potential of damaging indigenous vegetation on site.	-	Signs should be placed either along the hiking trails or at the camping sites that, *inter alia*, clearly prohibits the unauthorised harvesting of plants and states the importance of indigenous species; Tour guides should also act as enforcers to make sure that no plants are tampered with without the necessary permits and only existing tracks are used as access roads.
Indirect Impact	Soil erosion.		
Cumulative Impact	Introduction of invasive alien species; Decrease in property value of the nature reserve.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Indigenous vegetation	Moderate	Local	Long term	Will occur	Definite	Low	Reversible over the long term.

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Indigenous vegetation	Low	Isolated sites	Incidental	Could occur	possible	high

3. Fauna

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Poaching may pose a threat to the sustainability of the nature reserve as a whole.	-	All visitors to the area should be given an induction before commencement of tour operations. This induction should, *interalia,* include toolbox talks about the fauna present on site and how to deal with them. Poaching of any description and feeding of fauna and avifauna will be strictly prohibited. A monitoring system will be used to assess whether there is any impact on fauna during touring seasons.
Indirect Impact	Disturbance in animal communities.		
Cumulative Impact	Loss in tourism potential of the area; Decrease in property value.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Fauna	Moderate	Local	Medium term	Will occur	Definite	Low	Reversible over time

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Fauna	Low	Isolated sites	Incidental	Could occur	possible	high

4. Surface and ground water pollution

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Burst or leaking sewer pipes may contaminate water resources; Potential oil and hydrocarbon leaks from visiting (and nature reserve) vehicles can contaminate water sources.	-	Stormwater runoff must be managed sufficiently so as to avoid stormwater damage and pollution of water courses. Site stormwater structures should be diverted away from the waste water treatment systems. Notices should be displayed that clearly states which items can or cannot be flushed at the ablutions. A monitoring programme on ablution facilities should be implemented to avoid unnecessary leakages; All vehicles entering the property should be checked against hydrocarbon leaks.
Indirect Impact	Poor stormwater control on site, and accidental hydrocarbon spillages from vehicles, could lead to contaminated surface water flowing onto adjacent water bodies.		
Cumulative Impact	Loss of aquatic resources.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Water resources	High	Local	Medium	Could occur	possible	Low	Reversible over time

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Water resources	Low	Isolate sites	Short term	Could occur	possible	High

5. Socio economic structure

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Employment opportunities will be created during operational phase of the activity; SMMEs are likely to get a much needed boost also during this phase. The development will also increase the tourism potential of the nature reserve.	+	No mitigation measures proposed
Indirect Impact	Increased levels of well-being of local people;		

	Decrease in financial dependency.		
Cumulative Impact	Increased wealth in the community; Decrease in crime rates in the area; Increase in level of education, etc.		

6. Litter/solid waste

Impact	***Impact Description***	***+/-***	***Mitigation measures***
Direct Impact	Wind strewn litter resulting in visual pollution (litter also poses health risks through attraction of scavengers and other vermin, some of which may be disease vectors for communicable diseases); Infrequently collected waste resulting in attraction of vermin, overflow of waste and odour nuisance; Litter or contaminated water entering into storm water drains will result in pollution of ground and surface water.	-	Weather proof and scavenger proof litter bins will be provided at all the camping sites. Waste that is collected in the designated bins will be serviced according to the Municipality's refuse collection service schedule. Waste will be kept in the designated sealed bins to prevent water from entering and to keep vermin at bay.
Indirect Impact	Potential injury or even fatalities on animal organisms as a result of ingesting and being chocked or suffocated by the waste materials such as plastic and paper.		
Cumulative Impact	Inadequate waste management of solid waste have impacts that can result in the nature reserve losing its 'nature reserve' status and also losing its status as a tourism destination.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
Litter/solid waste	High	Local	Medium tem	Will occur	definite	Medium	Reversible over time.

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
Litter/solid waste	Low	Isolate sites	incidental	Could occur	possible	High

7. General Health and safety

Impact	*Impact Description*	*+/-*	*Mitigation measure*
Direct Impact	Inadequately managed waste has a potential to attract nuisance animals such as rodents and could be a nuisance and a potential health concern to the personnel and wild animals on site. Consumption of animal meat that is infected with a disease or making close contact with the wild animals could have serious health impacts on nature reserve personnel. Conversely, animal contact with any potential harmful material such as waste, binding materials, fuels, etc. can have a detrimental effect on a wide array of animal communities on site. Encounters with dangerous animals such as baboons, snakes, bees, etc. may be detrimental to the working staff and visitors.	-	First Aid Kit must be made available at the accommodation facilities. Conversely, visitors should be encouraged to have their own First Aid Kits. Playing with and/or teasing wild animals should be avoided at all costs. Visitors and staff should be discouraged against consuming animal tissues.
Indirect Impact	Decrease/Loss of animal organisms as a result of disease outbreaks, poaching, etc. Transmission of diseases to humans can be spread to other personnel outside the working environment.		
Cumulative Impact	Decrease in property value of the nature reserve as a result of decrease in animal and plant populations.		

Impact Rating before mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Intensity	Reversibility
General health & safety	High	Local	Long term	Could occur	Possible	Medium	Reversible over the long term.

Impact Rating after mitigation

Impact	Significance	Extent	Duration	Probability	Degree of certainty	Degree of mitigation
General Health &Safety	Low	Isolated sites	Incidental	unlikely	possible	High

No Go alternative

The "No-Go" alternative would imply that the status quoremains and new accommodation facilities and their associated structures and infrastructure would not be developed. The construction of the log cabins and their associated services may therefore inject a new dimension in the accessibility of the nature reserve and an increase in tourism potential.

Furthermore, the 'No-Go' alternative will not provide potential benefits that may occur during construction and operation, including eradication of alien species, stabilisation of eroded areas, upgrading of access roads, provision of safe drinking water, provision of hygienic ablutions, provision of safe and comfortable accommodation facilities,safe and clear accessibility, etc.

The No-Go alternative may however prevent the occurrence of those environmental impacts identified in the impact

assessment section.

8. DECOMMISIONING PHASE

1. Direct impacts: Not Applicable. This activity is not considered to be closed or decommissioned once used. Should this phase be inevitable, the Competent Authority will be notified and a Decommissioning EMPr will have to be submitted to the relevant Authorities.

2. Indirect Impacts: N/A

3. Cumulative Impacts: N/A

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

With the implementation of mitigation measures prescribed in the Basic Assessment Report, and with the implementation of management and monitoring measures prescribed in the EMPr, all impacts expected during the construction and operational phase of the facilities could be of low to very low risk.
Furthermore, the proposed developmentat the Oorlogskloof Nature Reserve will have a positive impact with regards to convenience, safety, and the overall operations of the nature reserve.

No-go alternative (compulsory)

In terms of the 'No-Go' alternative, the activity is refused an Environmental Authorisation, and therefore the activity would have to continue using the overnight sleeper tents. This alternative will not be feasible as the reasons behind the changing of the tents into much safer and adequate facilities as discussed in this report will have to be foregone. The applicant is providing a crucial service to the local community, the Nature Reserve and the Tourists in general. There is a motivation for the activity as there is a need to improve the facilities within the Oorlogskloof Nature Reserve, and therefore 'No-Go' option will have a negative impact in terms of improving the tourism accommodation facilities, and general access to the Nature Reserve.
Therefore the "no-go" alternative is not considered a feasible alternative.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	**YES**

It is the view of the EAP, that the information contained in this report and the documentation attached hereto, is sufficient to make a decision. It is recommended that the proposed log cabins and their associated structures and infrastructureshould be authorized subject to the mitigation measures proposed.

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

N/A

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

To emphasise the recommendations mentioned in the EMP, The EAP recommends the following mitigation measures:

- All the mitigation measures proposed in the report should be implemented.
- The EMPr must be made a condition of the authorization.
- An ECO be appointed to monitor the constructionphase and report to the Competent Authority on a monthly basis.
- In the interest of resource conservation, the log cabins should be fitted with rain water tanks tocontribute to sustainability of water resources.
- All units must implement water saving measures in their design, for example, dual flush toilets, low flow showerheads, etc.
- A management plan for the threatened heritage sites next to or within the hiking trails should be implemented as soon as possible.
- All landscaping should make use of entirely locally occurring vegetation species.
- All recommendations made in the Environmental Management Programme should be adopted.
- Access control measures should be implemented to avoid poaching of game and other natural resources.
- It is recommended that a basic theme is kept with the promotion of naturalmaterials.
- The proposal made regarding the environmental education and interpretation should be adopted.

Furthermore, a Closure Plan should be compiled and submitted to the Department of Environmental Affairs for review and approval prior to decommissioning of activities on site, should any of the sites ever be decommissioned. An Emergency Preparedness Plan should be attached to the Closure Plan.

Is an EMPr attached?	YES	■

The EMPr must be attached as Appendix F.

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information