2013

Environmental Impact Assessment Upington Solar Park

Visual Impact Assessment

Scoping phase

January 2014

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Current Revision	**1**					

Approval			
Author Signature		Approver Signature	
Name	Elmie Weideman	Name	Johan Goosen
Title	Landscape Architect	Title	Landscape architect (Associate)

Limitations of Consultant's Liability

The preliminary walk through exercise is being conducted as part of the assignment in order for the Consultant to familiarise themselves with the buildings that are to be audited. Should the Consultant notice any infrastructure that could potentially harm and/or constitute a danger to the Client and or persons on the premises, the Consultant will notify the Client's representative during the walk through. These items will also be recorded in the Preliminary Report. However, this action on the part of the Consultant shall not entitle the Client to hold the Consultant liable for any other risks that may be present in or near the building but were not identified during the preliminary walk through.

Table of Contents

List of Figures

List of Tables

List of Abbreviations

3D: Three dimensional
CPV: Concentrated Photovoltaic
CSP: Concentrated solar Power
DEA&DP: Department of Environmental Affairs and Development Planning
EIA: Environmental Impact Assessment
GIS: Geographic Information Systems
GPS: Global Positioning System
GW: Gigawatt
kV: Kilovolts
Km: Kilometre
PV: Photovoltaic
VIA: Visual Impact Assessment

Glossary

Fatal flaw: A fatal flaw is defined as an impact that has a " no – go" implication for the project

Glare: a continuous source of brightness relative to diffused lighting. This is not a direct reflection of the sun, but a reflection of the bright sky around the sun. Glare is less intense than glint.

Glint: Specular reflection, produced as direct reflection of the sun in surface of the PV solar panel. This is the potential source of the visual issues regarding viewer distraction.

View corridor: A linear geographical area usually along movement routes that is visible to users of the route.

Viewshed: The theoretical area from which a development or feature will be visible, defined on the basis of topography

1 Introduction

The South African Department of Energy is investing the establishment of an industrial park dedicated to the deployment of solar technology including PV, CPV and CSP near Upington in the Northern Cape. This will form a concentrated zone for various solar activities to generate power for delivery to the national grid. As a result of the Northern Cape's ideal climatic conditions, this region has received a great deal of interest for the production of sustainable energy production.

In December 2013 Lidwala Consulting Engineers SA (Pty) Ltd appointed Aurecon South Africa as a sub consultant to undertake a Visual Impact Assessment for the construction of a 1GW Upington Solar Park for phase 2 of the broader SGW solar corridor programme.

This report is for Scoping level only – the EIA part of this study will be undertaken at a later stage.

1.1 Visual Assessment Team and Expertise

The VIA was undertaken by Johan Goosen and Elmie Weideman of Aurecon, both are qualified as Landscape Architects. Mr Goosen has 15 years' experience in EIA's and Mrs Weideman 2 years' experience in VIA's.

Together they have completed the following VIA's (list is not exhaustive):

- 150 km power line in Natal
- Saldanha Bay Oil Tank Farm
- Kriel Ash Dam Facility
- St Helena Wind Farm
- Benga Mine and Powerplant, Mozambique
- Samancor Chrome Smelter at Mooinooi
- Meteor Estate residential development close to Vredefort Dome
- Zanzibar Urban Services Project, Tanzania
- Kuka Aerial Ropeway, Steelpoort area

2 Scope of Work

The scope of work included of this report is to:

- Describe the methodology that will be used in the VIA;
- Briefly describe the visual characteristics of the proposed solar park development;
- Briefly describe the existing visual characteristics of the site and its environs;
- Provide a brief description of the proposed development and the affected environment;
- Identify any visual issues that may need to be taken into account in the future planning and implementation of the proposed development
- Provide recommendations for the scope of an approach to the VIA that is to be undertaken during the EIA phase; and
- Identify any potential fatal flaws from a visual perspective that would result in significant risk to the project

3 Methodology

3.1 Assessment Methodology

- A desktop survey has been done, using baseline information from other studies which have be done on the project
- Site photos, extracted from various previous studies conducted on this project, has been used to determine the visual characteristics of the site and its environs
- A 3dimensional (3D) GIS terrain model will be used during the EIA phase to assess visibility of the development as a whole, or as parts thereof, from significant viewpoints within the viewshed.
- The visual impact of various configurations of elements of the development (e.g. :) will be tested using a 3D GIS terrain model over the entire viewshed. This will include assessing the visual impact from view viewpoints in surrounding settlements and from surrounding roads, on the presence of heritage resources, tourist routes and tourist facilities.
- Visual impacts will be identified and assessed using standard impact assessment criteria as defined by the EIA team.
- Mitigation measures will be proposed to aid future planning and the compilation of associated documentation.
- It is acknowledged that placement for optimal solar generation may take precedence over placement to minimise visual impact.

3.2 Assumptions and Limitations

- Currently there are three technical (spatial) and three electrical layouts; at this stage it is assumed that the different electrical options will not have a significant difference on the visual impact. The technical (spatial) layouts may influence the visual impact as a result of glint and glare.
- The VIA report will be drawn up in conformity with the requirements of the various provincial guidelines including:

  Guidelines for Involving Visual and Aesthetic Specialists in EIA Processes compiled for the Department of Environmental Affairs and Development Planning of the Provincial Government of the Western Cape. (June 2005)

- The preliminary viewsheds, i.e. the area that will potentially be visually affected by the development, have been roughly determined for all three potential position/s of the solar power tower(s), this is the highest point/s on the site. The height was estimated at 195m.

4 Nature of the proposed development

The project will include:

- Currently there is a 132kV transmission line on site. An additional 400kV line will be built which will connect the main solar substation to the ESKOM grid.
- Internal roads, of which main roads will be tarred or paved, all secondary roads will be dirt roads
- A water reservoir which will be placed along the southern or northern boundary
- Built structures include: workshops, ablution facilities, offices, parking, a solar technology demonstration area, a research facility, visitors and security centre, meteorological station and a water treatment control building.
- 2m high fencing will be placed around the plant which will include perimeter lighting and video camera surveillance

- The developer plans to accommodate all types of solar generating developments which includes the following systems, concentrated solar power and photovoltaic power which include the typical components as set out in 4.1 and 4.2

4.1 Concentrated Solar Power (CSP)

Concentrated solar power systems use mirrors and lenses to concentrate a large area of sunlight onto a small area. Electrical power is produced when the concentrated light is converted to heat, which drives a heat engine connected to an electrical power generator.

The concentrating technologies exist in various common forms, namely parabolic trough, enclosed trough, concentrating linear Fresnel reflector, dish sterling, central receiver system and solar power tower.

Parabolic trough / Solar Collector Assembly (SCA)

A parabolic trough consists of a linear parabolic reflector that concentrates light onto a receiver positioned along the reflector's focal line. The reflector follows the sun during the daylight hours by tracking along a single axis. A fluid is heated as it flows through the receiver and is then used as a heat source for a power generation system.

The parabolic trough is composed of 4 segments with an aperture width of 5.75m. Each trough structure comprises of a solar collector assembly at around 150m length; connected in series, creating 2 parallel rows of 300m, with a total loop length of 600m. Each solar collector assembly consists of 12 solar collector elements connected in series, with a total aperture area of 817m^{2}.

Each sub module consists of a galvanized steel module with a length of 12m. Parabolic reflectors, mounted on the cantilever arms and receiver tubes are placed in the focal line. The parabolic mirrors are positioned by arms held by the structure.

The metallic structure of the collector consists of 13 aligned pylons. The Solar collector element is mounted on these pylons. The main characteristics of the SCA are summarised in the table below.

Table 1: Typical technical characteristics of the Solar Collector Assembly

Item	value
Model of collector	SKAL-ET or similar
Number of SCA's per loop	4
Focal distance	1.71 m
Aperture width	5.77 m
Length of a SCA	around 148.5 m
Aperture area of a SCA	817.5 m2
Quantity of SCE's	12
Quantity of receiver tubes per SCA	36
Mirrors average reflectivity	93.5%
Concentration factor	82
Optical efficiency	78.8%
Maximum operating wind speed	14 m/s

A typical image of a parabolic trough as well as a schematic design is indicated below.

Figure 1: Example of a parabolic trough ***http://www.techbells.blogspot.com***

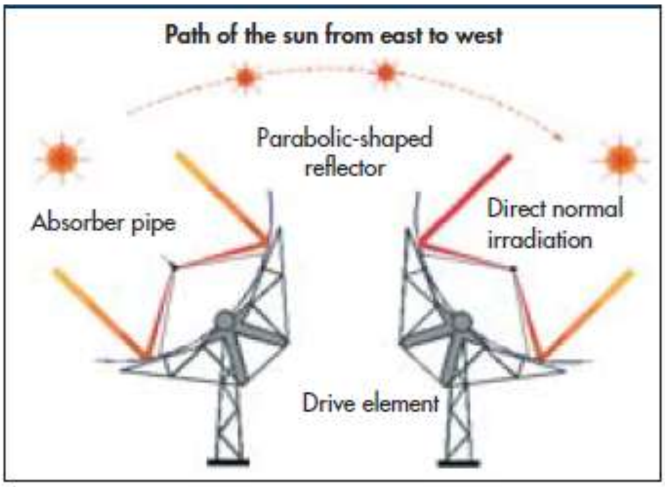


Figure 2: Schematic of the tracking system

Enclosed parabolic trough

An enclosed trough system is used to produce process heat. The design encapsulates the solar thermal system with a greenhouse – like glasshouse. Lightweight curved solar reflecting mirrors are suspended from the ceiling of the glasshouse by wires. The mirrors concentrate the sunlight and focus it on a network of stationary steel pipes, also suspended from the glasshouse structure. Water is carried throughout the length of the pipe, which is boiled to generate steam when intense sun radiation is applied. A typical image of an enclosed parabolic trough is indicated below.

Figure 3: Example of Enclosed parabolic trough http://www.celsias .com

Central Receiver System

The solar field contains the heliostats that reflect and focuses sunlight on the receiver. The system elements are the heliostats, the central receiver and the power tower. The image below is an indication of the schematic process of a Central Receiver System.

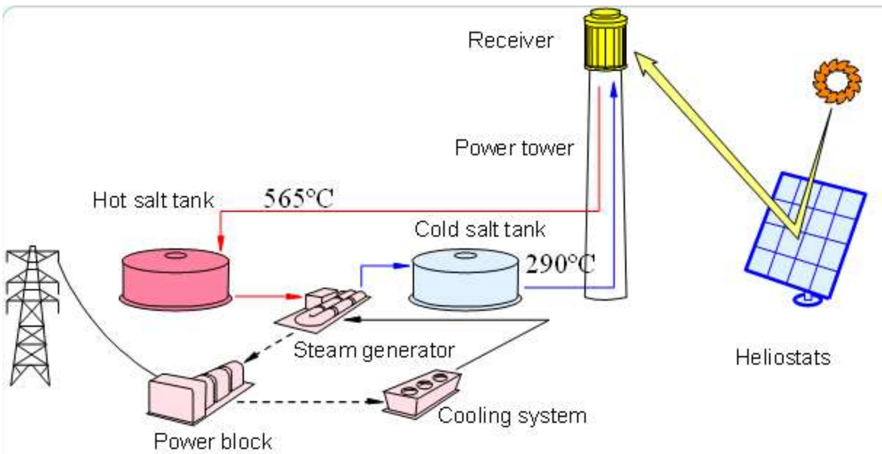


Figure 4: Schematic drawing of the Central Receiver System

Fresnel reflectors

Fresnel reflectors are made of many thin, flat mirror strips to concentrate sunlight onto tubes which working fluid is pumped. Flat mirrors allow more reflective surface in the same amount of space as a parabolic reflector, thus capturing more of the available sunlight.

Figure 5: Example of Fresnel reflector http://www.scientificaerican.com

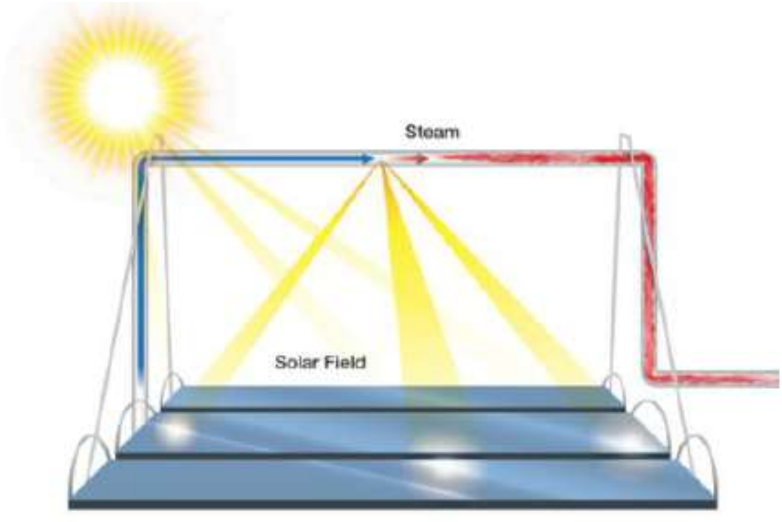


Figure 6: Sketch of a Fresnel linear collector

Dish Stirling

A dish sterling consists of a stand-alone parabolic reflector that concentrates light onto a receiver positioned at the reflector's point. The reflector tracks the sun along two axes; the working fluid in the receiver is heated and used by the sterling engine to generate power.

Figure 7: Example of Dish stirling https://www.xaharts.org

Solar power tower

A solar power tower consists of an array of dual – axis tracking reflectors that concentrates sunlight on a central receiver atop a tower; the receiver contains a fluid deposit. The fluid is heated and then used as a heat source for a power generation or energy storage system. A typical image of a solar power tower with a collection of photovoltaic panels is depicted in the image below.

Figure 8: Example of Solar power tower http://www.china-aircon.com

It must be noted that the final height and appearance of the Solar Park components will be dependent on technical factors.

4.2 Photovoltaic Power System

Photovoltaic panels

Photovoltaic power systems are power systems energised by photovoltaic panels. Photovoltaic panels convert solar radiation into direct current electricity using semi-conductors; this is known as the photovoltaic effect. Photovoltaic solar panels are composed of a number of solar cells containing a photovoltaic material. Individual ground mounted PV panels will be connected to a string of panels forming an array. The array of panels will be attached to a steel support structure at an angle in order to receive the maximum amount of solar radiation. The two types of structures used in PV plants include the following:

- Fixed tilt
- Tracking

Fixed tilt solar fields are characterised by an immobile structure orientated according to an azimuth. Structures are arranged in evenly spaced long rows. Tracking fields are regularly spaced and shaped with larger row distances than fixed systems.

The images below indicate a typical PV field layout as well as an example of photovoltaic panels.

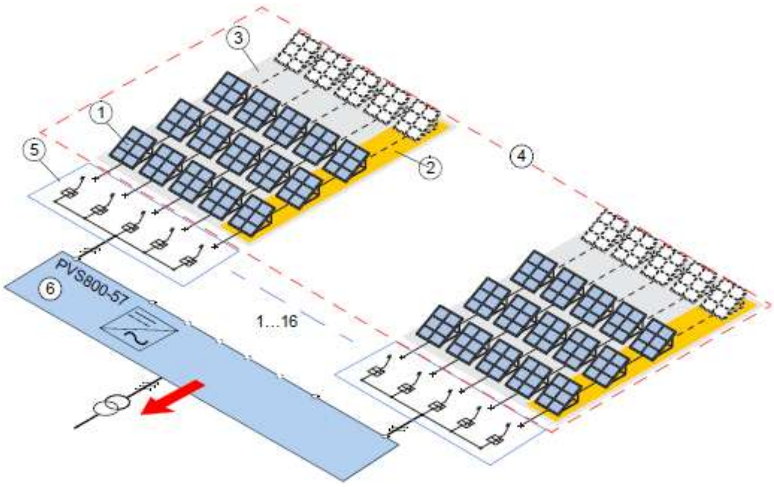


Figure 9: Description of a typical PV field layout

Figure 10: Example of Photovoltaic panels

The fixed power blocks are composed of 24 rows holding 12 strings of 24 modules each in portrait position. The various fixed power block physical sizing are indicated in the two tables below.

Table 2: Fixed power block physical sizing

Parameter	Value
Module inclination (°)	25
In-plane length (m)	3.3
Row in-plane area (m²)	240.39
Row pitch (m)	6
Access road width (m)	10
Field width (m)	155.67
Field length (m)	144
Area (ha)	2.24
Occupancy ratio (-)	0.51
Power ratio (MW/ha)	0.80

Table 3: Fixed power block physical sizing

Parameter	Value
Module inclination (°)	25
Row width* (m)	145.69
In-plane length (m)	3.3
Row in-plane area (m²)	240.39
Row pitch (m)	6
Access road width (m)	10
Field width (m)	155.67
Field length (m)	144
Area (ha)	2.24
Occupancy ratio (-)	0.51
Power ratio (MW/ha)	0.80

5 Nature of the current visual environment

5.1 Location and Status of the study area

The proposed site consists of the farm 451 Klipkraal, owned by the Khara Hais Municipality. The site is located approximately 8km north west of Upington *(28º 26' 47 "S, 21º 08' 44" E)* and is zoned as agricultural and undetermined land. The site boundaries are formed by a railway line to the south, the national road (N10) to the north, the farm Olyfenhoutsdrift to the west and Upington town to the east.

The most common land use in the area is agriculture and therefore the existing site still presents remnants of this. The land is fenced off in camps and contains concrete dams and human shelters, possible used by farm workers. A railway line bisects the portion of land and an overhead power line is present close to the southern boundary.

5.2 General description of the site and surrounding area

5.2.1 Topography

The site of the proposed Solar Park is situated close to the Orange River sandy flood plains. Topographically this area have a slightly sloping plateau with rolling Kalahari red sand dunes which varies in height from 3 – 6m from trough to crest with an approximate spacing of 30 – 100m apart from each other. Small, scattered calcrete rocky outcrops occur in isolated regions with shallow dry riverbeds cutting through the landscape. Soils are red – yellow apedal soils which stands in contrast to the Kalahari khaki grasses. The slope gradient map indicates the uniform topography of the site, please refer to Appendix A.

Figure 11: Red Kalahari soils stands in contrast to the khaki coloured grasses
Macroplan Town and Regional Planners, December 2011

5.2.2 Vegetation

The site lies on the border of the Nama Karoo and Savanna Biome, the site consist of Kalahari Karroid shrubland and the Gordonia Duneveld vegetation types. Generally the natural landscape consists of grass covered parallel dunes and lower lying flat areas which mainly consists of thorny trees and dwarf shrubs scattered sparsely over the landscape. There are also localised open patches where no vegetation is growing. There are very few natural large trees in the study area and these are restricted to positions where water naturally collects.

Figure 12: Vegetation is characterised by grasses and sparsely scattered trees and shrubs Macroplan Town and Regional Planners, December 2011

5.2.3 Land use character

The floodplains along the Orange River are intensively cultivated for production of grapes, raisins, dates, citrus, maize, vegetables and lucern. Extensive farms are present towards the north and west and intensive farms are present from the south and south east of the study area, the latter adding value to the overall vista. The large farms lying towards the north and west is as a result of the low carry capacity of the area and the intensity of the farm practices is very low. Farmsteads, surrounded by trees, can be expected to occur in isolated instances. The remoteness of the landscape adds to a particular sense of place.

The proposed site was previously used for cattle grazing. A municipal refuge area is located directly next to the site and vacant areas are found directly east of the site. Two railway lines intersects the site, one passing along the southern end of the site, the second roughly 1km below the northern edge, running in an east west direction. An abundant borrow pit has been identified to the north east of the site, close to the entrance of the site leading to the N14.

A preliminary viewshed analysis (refer to Appendix B) was used to determine the visibility of the proposed development. The visibility of the project is the geographic area from which the project will be visible. This is considered the zone of theoretical visibility as it assumes a straight line between contours. The actual visibility might be lower because of screening by existing trees and buildings. The viewshed analysis indicates that two of the three solar power towers have a 100% visibility and one has a 98% visibility based on a radius of 7km.

Figure 14: existing railway track

Figure 15: Entrance into the site from the N10 **Macroplan Town and Regional Planners, December 2011**

6 Main issues to be addressed in the Impact Assessment phase

- The visual impact on receptors along the Orange River Basin (especially landscape based tourism and residents)
- The visual impact on tourists who travel through the area to access other tourist destinations, the focus will be on the main routes such as the N10 and N14, the N10 being the main road between Upington and Namibia and the N14 is the main road between Keimoes and Upington which also runs parallel to the Orange River. Both these roads are associated with tourism and should be recognised as view corridors. It is likely that the proposed infrastructure development will be visible from these roads.
- Detailed assessment of the landscape character of the area and each proposed option for the Solar Park
- The identification of key viewpoints, especially from farmsteads and higher lying areas which could possibly form important vistas (this will only be determined once a site visit has been conducted)
- The effect of glint and glare from the various Solar Park components, especially the glare from the solar receiver unit at the top of the solar power tower. Glint and glare is the result of viewers seeing the reflection of the sun (glint) or the corona around the sun (glare). Glint and glare will only occur during the summer months from viewpoints facing east and northeast to the project site during morning hours and viewers looking west and north west to the project site during evening hours. Viewers located north of the project area facing a southern direction will experience no glint or glare during any season.
- The duration of glint and glare by possible adjusting of panels, this will potentially have an impact on motorists passing through the study area at a certain speed. Simulations demonstrated glint and glare will be visible to motorists in their periphery for a brief period in the early morning or late evening during summer.
- The cumulative effects of solar energy projects in the Upington area – as it is expected that there are other government and private initiatives in the area as well due to the suitability from a solar point of view.

7 Approach to the Impact Assessment Phase

The terms of reference for the impact assessment phase are based on the findings of the site visit , as well as an interpretation of the guideline document for VIA's (Oberholzer 2005) commissioned by the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP).

In terms of this guideline document , the depth and scope of a VIA is based on a combination of the sensitivity of the environment and the nature of the existing environment and type of development and both divided into five categories , which are indicated in a matrix (Table 1 from Oberholzer . 2005) . The category of development is based on Box 3 from the same document as indicated below.

Table 1: Categorisation of issues to be addressed by the visual assessment

Type of environment	Type of development (see Box 3) Low to high intensity				
	Category 1 development	Category 2 development	Category 3 development	Category 4 development	Category 5 development
Protected/wild areas of international, national, or regional significance	Moderate visual impact expected	High visual impact expected	High visual impact expected	Very high visual impact expected	Very high visual impact expected
Areas or routes of high scenic, cultural, historical significance	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	High visual impact expected	Very high visual impact expected
Areas or routes of medium scenic, cultural or historical significance	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	High visual impact expected
Areas or routes of low scenic, cultural, historical significance / disturbed	Little or no visual impact expected. Possible benefits	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected
Disturbed or degraded sites / run-down urban areas / wasteland	Little or no visual impact expected. Possible benefits	Little or no visual impact expected. Possible benefits	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected

Box 3: Key to Categories of Development

Category 1 development:
e.g. nature reserves, nature-related recreation, camping, picnicking, trails and minimal visitor facilities.

Category 2 development:
e.g. low-key recreation / resort / residential type development, small-scale agriculture / nurseries, narrow roads and small-scale infrastructure.

Category 3 development:
e.g. low density resort / residential type development, golf or polo estates, low to medium-scale infrastructure.

Category 4 development:
e.g. medium density residential development, sports facilities, small-scale commercial facilities / office parks, one-stop petrol stations, light industry, medium-scale infrastructure.

Category 5 development:
e.g. high density township / residential development, retail and office complexes, industrial facilities, refineries, treatment plants, power stations, wind energy farms, power lines, freeways, toll roads, large-scale infrastructure generally. Large-scale development of agricultural land and commercial tree plantations. Quarrying and mining activities with related processing plants.

It is clear from the above that solar farms are categorised as category 5 developments and accordingly for the landscape which is regarded as medium scenic significance, the development can be expected to result in a development of high visual impact.

Accordingly, the level of VIA that would be required, based on the expected level of impact (obtained from Table 1), is determined by Table 2 below.

Table 2: Categorisation of approaches used for visual assessment

Approach	Type of issue (see Box 4)				
	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	Very high visual impact expected
Level of visual input recommended	**Level 1** visual input	**Level 2** visual input	**Level 3** visual assessment	**Level 4** visual assessment	

The approach required for a Level 4 VIA includes the following:

- Identification of issues raised in the scoping phase, and site visit;
- Description of the receiving environment and the proposed project;
- Establishment of view catchment area, view corridors, viewpoints and receptors;
- Indication of potential visual impacts using established criteria;
- Inclusion of potential lighting impacts at night;
- Description of alternatives, mitigation measures and monitoring programmes.
- Review by independent, experienced visual specialist (if required);
- Complete 3D modelling and simulations, with and without mitigation; and
- Review by independent, experienced visual specialist (if required).

8 Conclusion

- The receiving environment of the project has little capacity to absorb the proposed development, especially when considering the visual impact of the CSP system with its central tower structure.
- The potential impacts of glare and glint on especially the road users of the national N10 and N14 roads must be adequately investigated and mitagated as it poses a potential safety risk.
- The predominantly rural sense of place of Upington and surrounds may be impacted by this and other similar projects in the area (cumulative impact), especially where it concerns nature based tourism as an income stream.

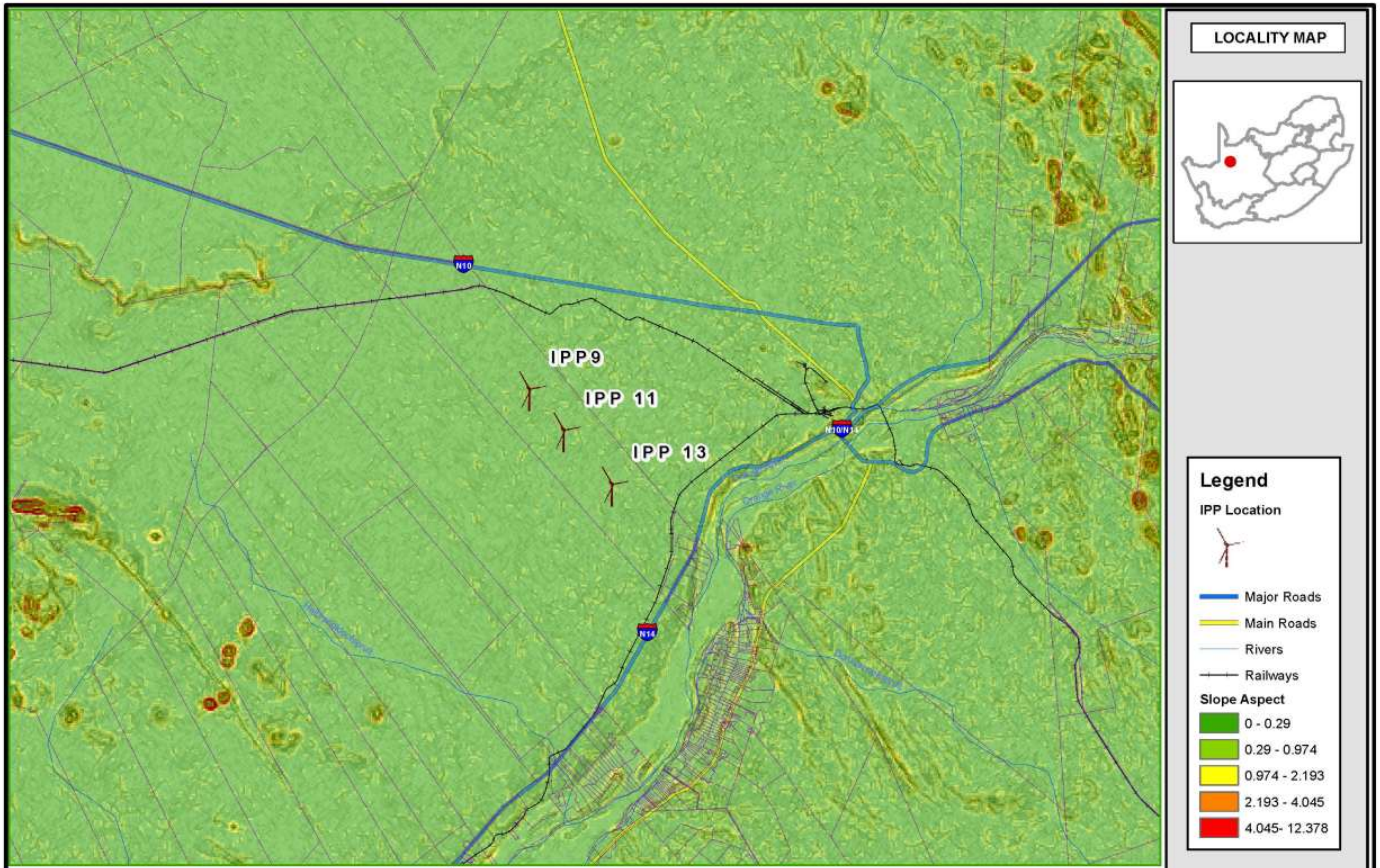
These and other issues / impacts identified will be investigated during the EIA Phase of the project, as more detailed information on the various alternatives becomes available, and the VIA specialist site visit takes place.

9 References

Oberholzer, B. 2005. Guideline for involving visual & aesthetic specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 2005 053 F. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

Mucina L & Rutherford, C. 2006. The vegetation of South Africa Lesotho and Swaziland.

Appendix A - Slope Analysis



MAP PREPARED BY:

aurecon

MAP PREPARED FOR:

Lidwala

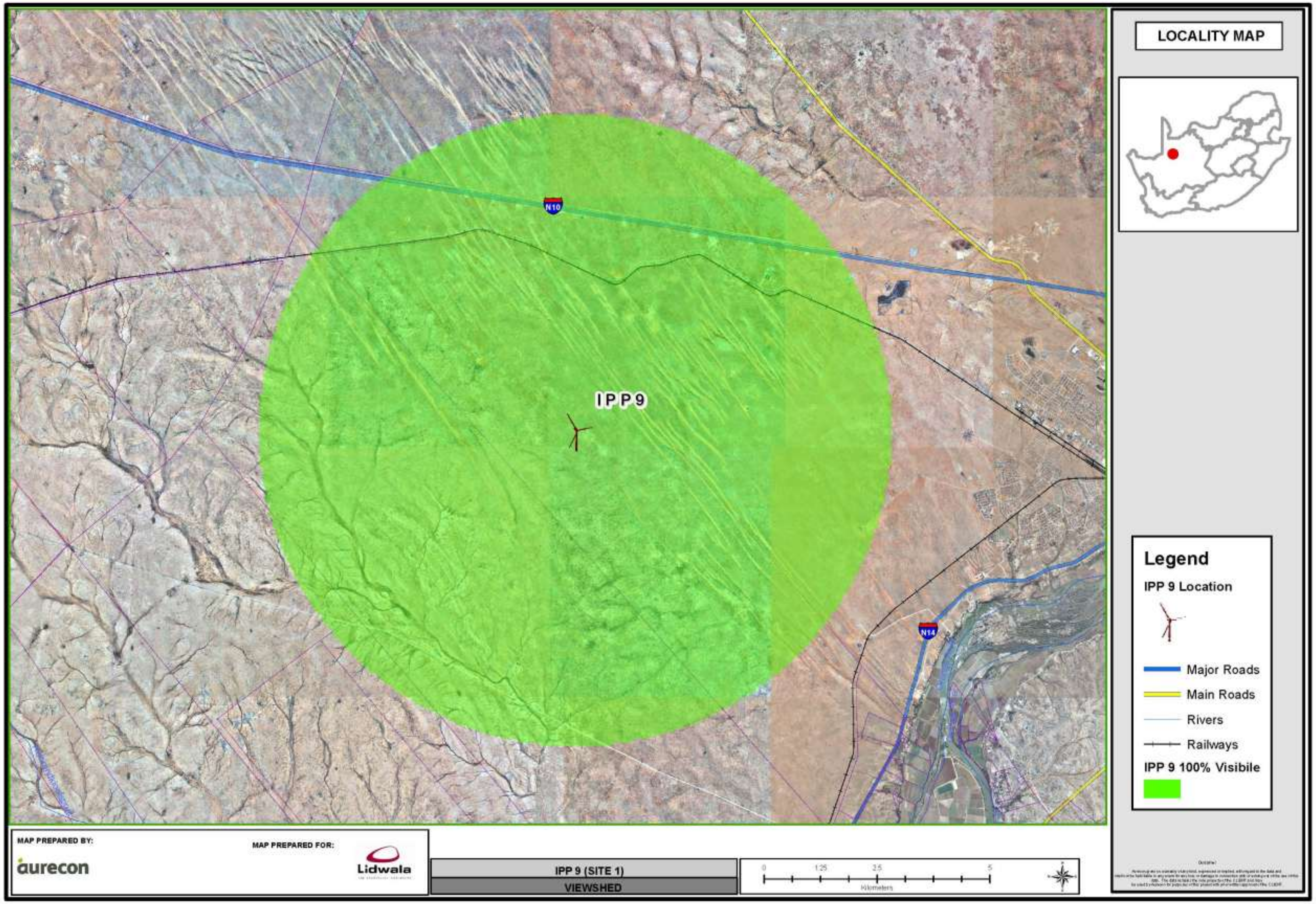
IPP 9, 11, 13 (ALL SITES)

SLOPE ASPECT

0 2.5 5 10

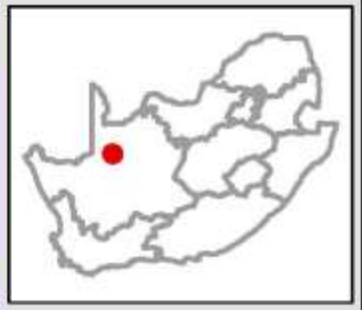
Kilometers

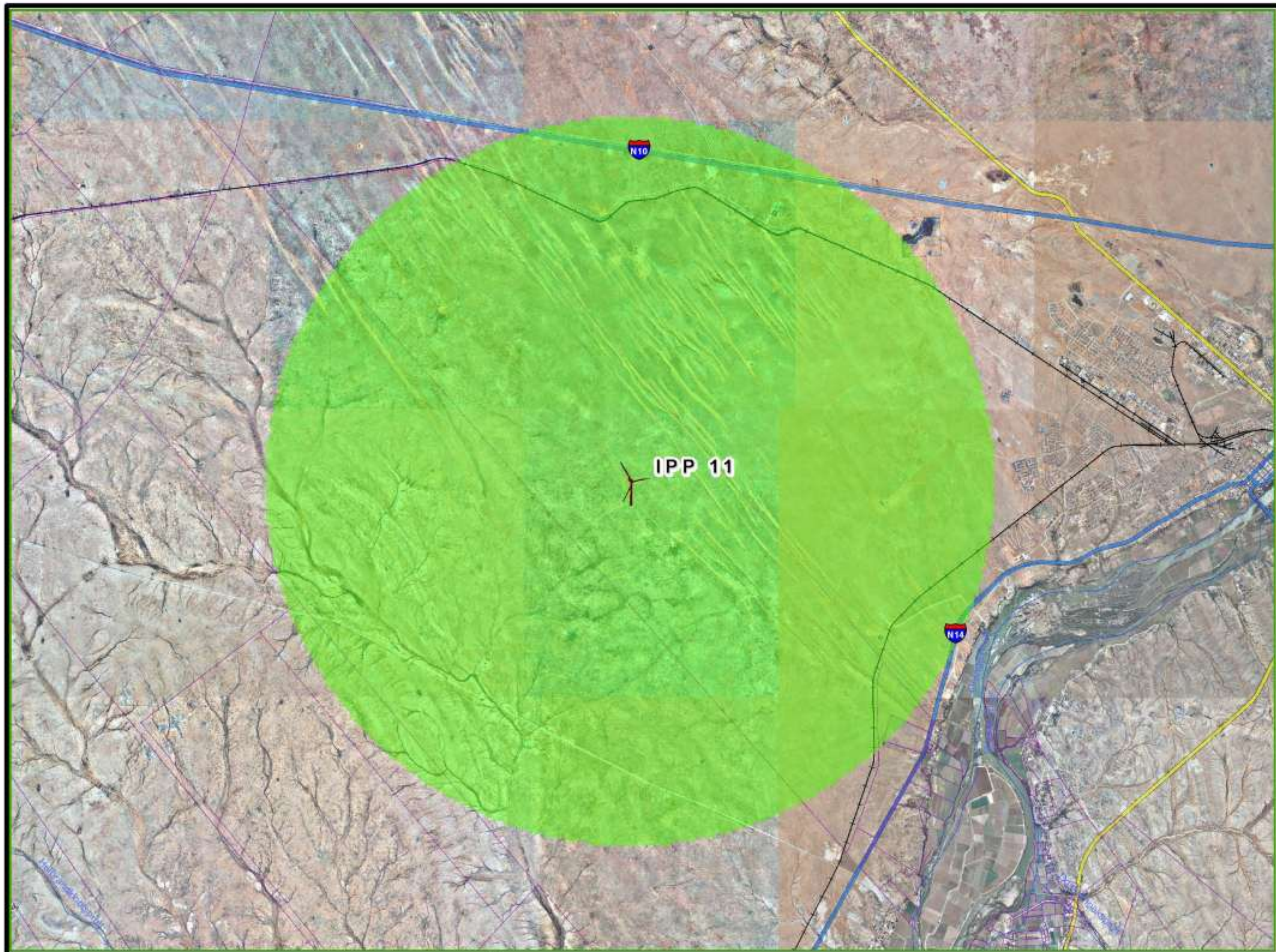
Appendix B - Viewshed Analysis



N10
IPP9
N14
LOCALITY MAP
Legend
IPP 9 Location
Major Roads
Main Roads
Rivers
Railways
IPP 9 100% Visibile
MAP PREPARED BY:
aurecon
MAP PREPARED FOR:
Lidwala
IPP 9 (SITE 1)
VIEWSHED
0
1.25
2.5
5
Kilometers

LOCALITY MAP





Legend

IPP 11 Location

Major Roads

Main Roads

Rivers

Railways

IPP 11 100% Visibile

MAP PREPARED BY:

aurecon

MAP PREPARED FOR:

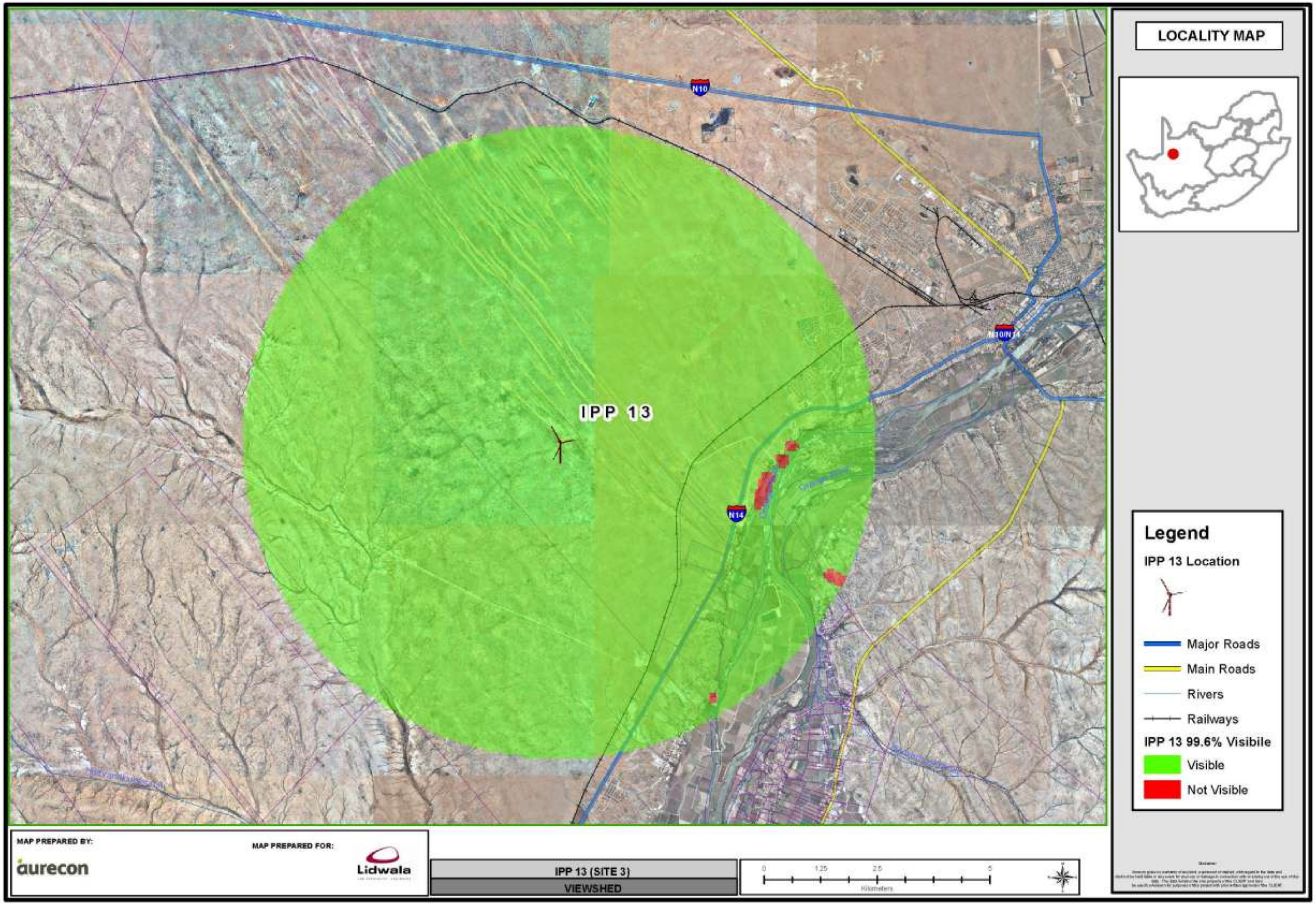
Lidwala

IPP 11 (SITE 2)

VIEWSHED

0 1.25 2.5 5

Kilometers


LOCALITY MAP
N10
N10/N14
N14
IPP 13
Legend
IPP 13 Location
Major Roads
Main Roads
Rivers
Railways
IPP 13 99.6% Visibile
Visible
Not Visible
MAP PREPARED BY:
aurecon
MAP PREPARED FOR:
Lidwala
IPP 13 (SITE 3)
VIEWSHED
0
1.25
2.5
5
Kilometers
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United Arab Emirates, Vietnam.

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	12/12/20/
NEAS Reference Number:	DEAT/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010

PROJECT TITLE

Environmental Impact Assessment for the Proposed 1 GW Upington Solar Park, Northern Cape

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Postal address:	**1121 Hertzog Street, Waverley**		
Postal code:	**0186**	Cell:	**082 890 1918**
Telephone:	**0861 543 9252**	Fax:	**086 764 9166**
E-mail:	**environmental@lidwala.com**		

4.2 The specialist appointed in terms of the Regulations_

I, ELMIE WEIDEMAN, declare that --

General declaration:

I act as the independent specialist in this application

I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant

I declare that there are no circumstances that may compromise my objectivity in performing such work;

I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;

I will comply with the Act, regulations and all other applicable legislation;

I have no, and will not engage in, conflicting interests in the undertaking of the activity;

I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;

all the particulars furnished by me in this form are true and correct; and

I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of section 24F of the Act.

EWeideman

Signature of the specialist:

AURECON SOUTH AFRICA

Name of company (if applicable):

20-06-2014

Date: