WITBERG ACCESS ROAD SECTION 24G APPLICATION

FINAL ENVIRONMENTAL ASSESSMENT REPORT

May 2012
J31040
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>LIST OF TABLES</strong></td>
<td>I</td>
</tr>
<tr>
<td></td>
<td><strong>LIST OF FIGURES</strong></td>
<td>I</td>
</tr>
<tr>
<td></td>
<td><strong>LIST OF APPENDICES</strong></td>
<td>I</td>
</tr>
<tr>
<td></td>
<td><strong>LIST OF ABBREVIATIONS</strong></td>
<td>II</td>
</tr>
<tr>
<td>1</td>
<td>INTRODUCTION AND BACKGROUND</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>PURPOSE OF THE ENVIRONMENTAL ASSESSMENT REPORT</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>DETAILS OF THE EAP THAT UNDERTOOK THE S24G</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>DESCRIPTION OF THE RECEIVING ENVIRONMENT</td>
<td>4</td>
</tr>
<tr>
<td>4.1</td>
<td>Physical Environment</td>
<td>4</td>
</tr>
<tr>
<td>4.2</td>
<td>Baseline Social Environment</td>
<td>8</td>
</tr>
<tr>
<td>4.2.1</td>
<td>Introduction</td>
<td>8</td>
</tr>
<tr>
<td>4.2.2</td>
<td>Regional Site Setting</td>
<td>8</td>
</tr>
<tr>
<td>4.3</td>
<td>Demographic Profile</td>
<td>9</td>
</tr>
<tr>
<td>4.3.1</td>
<td>Population Distribution</td>
<td>9</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Ethnic Composition</td>
<td>9</td>
</tr>
<tr>
<td>4.3.3</td>
<td>Economic Profile</td>
<td>9</td>
</tr>
<tr>
<td>4.4</td>
<td>Employment</td>
<td>9</td>
</tr>
<tr>
<td>4.4.1</td>
<td>Income Levels</td>
<td>10</td>
</tr>
<tr>
<td>4.4.2</td>
<td>Local Workforce</td>
<td>10</td>
</tr>
<tr>
<td>4.5</td>
<td>Socio-economic impacts of the Witberg Road</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>DESCRIPTION OF THE PROPOSED PROJECT</td>
<td>11</td>
</tr>
<tr>
<td>6</td>
<td>LEGAL ASPECTS</td>
<td>12</td>
</tr>
<tr>
<td>7</td>
<td>GENERAL APPROACH TO S24G APPLICATION AND PUBLIC PARTICIPATION</td>
<td>15</td>
</tr>
<tr>
<td>8</td>
<td>SUMMARY OF THE S24G APPLICATION AND PUBLIC PARTICIPATION PROCESS</td>
<td>16</td>
</tr>
<tr>
<td>9</td>
<td>ALTERNATIVES AND METHODOLOGY FOR MEASURING IMPACTS</td>
<td>18</td>
</tr>
</tbody>
</table>
9.1 Alternatives 18
9.2 Methodology for measuring impacts 18

10 DETAILS OF THE SPECIALISTS AND SPECIALIST STUDIES 20
10.1 Ecology 20
10.1.1 Name of the specialist 20
10.1.2 Expertise of the specialist 20
10.1.3 Scope and purpose of the study 21
10.1.4 Methodology adopted 21
10.1.5 Assumptions and limitations 23
10.1.6 Summary of findings 24
10.2 Agriculture 25
10.2.1 Name of the specialist 25
10.2.2 Expertise of the specialist 25
10.2.3 Scope and purpose of the study 25
10.2.4 Methodology adopted 26
10.2.5 Assumptions and limitations 26
10.2.6 Summary of findings 26
10.3 Visual 27
10.3.1 Name and company of specialist 27
10.3.2 Expertise 27
10.3.3 Scope and purpose of the study 28
10.3.4 Methodology adopted 28
10.3.5 Assumptions and limitations 28
10.3.6 Summary of findings 28
10.4 Heritage 29
10.4.1 Name and Company of Specialist 29
10.4.2 Expertise 29
10.4.3 Scope and purpose of the study 29
10.4.4 Methodology 29
10.4.5 Assumptions and limitations 29
10.4.6 Summary of findings 30

11 DETAILS OF OEMP AND CLOSURE PLAN 31

12 DETAILS OF THE PUBLIC PARTICIPATION PROCES FOLLOWED 32
12.1 Announcement of the project 32
12.2 Public Review of Environmental Assessment Report 32

13 SUMMARY OF IMPACTS 33

14 CONCLUSION 34
LIST OF TABLES

Table 1: Details of Environmental Assessment Practitioner
Table 2: Details of Listed Activities Government Regulations R 386 of 2006
Table 3: Applicable Legislation
Table 4: Summary Impact Table Ecology
Table 5: Summary Impact Table Agriculture
Table 6: Summary Impact Table Heritage

LIST OF FIGURES

Figure 1: Location Maps
Figure 2: Properties on which track is situated
Figure 3: Critical Biodiversity Areas map of the area surrounding the Witberg Road.
Figure 4: S24G Application process
Figure 5: Ecological Sensitivity map of the area surrounding the Witberg Road

LIST OF APPENDICES

Appendix A - Section S24G Application Form
Appendix B - Correspondence from Authorities
Appendix C - Notice to landowners
Appendix D - Location Map
Appendix E - Photos of site prior to commencement of construction
Appendix F - Photos of site after commencement of construction
Appendix G - Specialists’ Curriculum Vitae
Appendix H - Ecology Assessment Report
Appendix I - Agricultural Assessment Report
Appendix J - Visual Statement
Appendix K - Heritage Assessment
Appendix L - Operational Environmental Management Plan
Appendix M - List of registered Interested and Affected Parties
Appendix N - Advertisements placed in Die Burger and Worcester Standard
Appendix O - Notice placed on property boundary
Appendix P - Background Information Document
Appendix Q - Specialist Declaration of Independence
Appendix R - Issues and Response Report
LIST OF ABBREVIATIONS

BA - Basic Assessment
BID - Background Information Document
CAA - Civils Aviation Authority
CBA - Critical Biodiversity Area
CKDM - Central Karoo District Municipality
CR - Critically Engandered
DEA - Department of Environmental Affairs
DMA - District Management Area
EAP - Environmental Assessment Practitioner
ECO - Environmental Control Officer
EIA - Environmental Impact Assessment
EMF - Environmental Management Framework
EMP - Environmental Management Plan
EN - Endangered
ERM - Environmental Resources Management
G7 - G7 Renewable Energies
GN - Government Notice
I&APs - Interested and Affected Parties
IDP - Integrated Development Plan
IEM - Integrated and Environmental Management
IRR - Issues and Response Report
LLM - Laingsburg Local Municipality
NEMA - National Environmental Management Act (Act No. 107 of 1998)
MEC - Member of Executive Council
N/A - Not Applicable
NGO - Non-governmental Organisation
PPP - Public Participation Process
R - Government Regulation
SAHRA - South African Heritage Resources Agency
SDF - Spatial Development Framework
SEA - Strategic Environmental Assessment
VIA - Visual Impact Assessment
VU - Vulnerable
N1 - National Highway
1 INTRODUCTION AND BACKGROUND

On 27 July 2010 and 28 July 2010, respectively, the Laingsburg Local Municipality (LLM) and the Civils Aviation Authority (CAA) granted consent to G7 Renewable Energies (G7) to install three 60 m meteorological masts atop a ridge on their proposed Witberg Wind Farm site, situated between Touws River and Matjiesfontein in the Western Cape. Construction of the masts was completed on 08 October 2010.

A jeep track was previously established at the top of the ridge in order to gain access to the proposed construction sites of the masts. The track, which was constructed in May / June 2010, is approximately 2.5 - 3 m wide and 12.7 km long, starting from the eastern part of the ridge near existing communication towers and extending towards the west.

Although the width and length of the road did not trigger any activities pertaining to the construction of roads as published under Government Notices R386 and R387 of the National Environmental Management Act (Act No 107 of 1998) (NEMA), the DEA is of the opinion that it triggered Activities 12 and 16(b) under GN R 386 (Section 6).

The DEA therefore is of the view that the construction of the access road is illegal as the Department had not granted Environmental Authorisation before commencement of Activities 12 and 16(b).

On 11 March 2011 the Department of Environmental Affairs (DEA) issued a notice to G7 indicating that a Section 24 Application (S24G Application) must be undertaken and that an independent Environmental Assessment Practitioner (EAP) must be appointed to undertake this process. The culmination of the S24G Application will result in an Environmental Assessment Report (EAR) which must assess the environmental impacts associated with the construction of the road and suggest mitigation measures where necessary. The Report must also provide a recommendation to the DEA as to whether the legal requirements for authorisation are sufficient, or whether the site must be completely rehabilitated.

G7 subsequently appointed Arcus GIBB (Pty) Ltd (GIBB) to undertake the S24G Application on their behalf. A S24G Application Form was submitted to the DEA on 15 April 2011 (Appendix A). The DEA issued a response to the S24G Application on 18 August 2011 (Appendix B).

After further consultation with the DEA, GIBB subsequently appointed specialists to undertake the following specialist studies:

- Ecological Impact Assessment
- Heritage Impact Assessment
- Agricultural Impact Assessment
- Visual Statement

This report contains the findings of the above specialist studies as well as the information requested by the DEA.
2 PURPOSE OF THE ENVIRONMENTAL ASSESSMENT REPORT

The purpose of the Environmental Assessment Report is to:

- Summarise the S24G Application and public participation processes (PPP) undertaken to date.
- Provide the results and conclusions of the specialist studies undertaken.
- Synthesise the issues and concerns identified by Interested and Affected Parties (I&APs) and various stakeholder groups within an Issues and Response Report (IRR)
- Provide a recommendation to the DEA as to whether an authorisation should be granted or whether the site should be completely rehabilitated.
## DETAILS OF THE EAP THAT UNDERTOOK THE S24G

<table>
<thead>
<tr>
<th>Table 1: Details of Environmental Assessment Practitioner</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of EAP</strong></td>
</tr>
<tr>
<td><strong>Contact person</strong></td>
</tr>
<tr>
<td><strong>Physical and Postal Address</strong></td>
</tr>
<tr>
<td><strong>Telephone</strong></td>
</tr>
<tr>
<td><strong>Fax</strong></td>
</tr>
<tr>
<td><strong>E-mail</strong></td>
</tr>
</tbody>
</table>

**Expertise to conduct this EMP:**

Ms. Jaana-Maria Ball MSc (Botany); MBA; PrSciNat; is a Professional Environmental Scientist, Ecologist and Botanist. She is a Director within GIBB with 18 years of experience in the environmental field, having been the Project Manager or Director of many high profile projects in Southern Africa. She specialises in strategic and operational planning as well as the management of complex Strategic Environmental Assessments (SEAs), EIAs, Environmental Management Plans (EMPs), coordination and execution of public involvement processes, and the management of large, multi-disciplinary project teams. Her extensive EIA project experience covers a wide variety of activities, acting as EAP for multiple wind farm EIAs, including the Kouga Wind Farm, St. Helena Wind Farm and Caledon Wind Farm. Notably, she has also undertaken various large-scale EIAs, including the Pebble Bed Modular Reactor nuclear power station in Western Cape, as well as Nuclear-1 and associated Bantamsklip Transmission Lines EIAs. Jaana acts as an advisor and reviewer to numerous international and national organisations.

Mr. Jan-Willem de Jager M.Phil (Environmental Management); M.Com. (Market Research); is an Environmental Scientist with 3 years experience. He specialises in Market Research; Environmental Impact Assessments (EIAs) and Environmental Auditing. Jan-Willem has been involved in various high-profile environmental projects including the EIAs for the Caledon Wind Farm, St Helena Wind Farm and the Matola – Kendal Petroleum Pipeline. He has also been involved in Basic Assessments (BAs) and S24G Applications for various projects including those undertaken for the Caledon Wind Test Mast, Port Elizabeth Health Care Waste Transfer Station, Beaufort West Waste Disposal Sites and Langebaan Special Forces Base Boat Park.
4 DESCRIPTION OF THE RECEIVING ENVIRONMENT

The information in Section 4 was largely sourced from the specialist reports undertaken for the S24G Application (Appendices G – J) as well the Witberg Wind Farm EIA Report compiled by Environmental Resources Management (ERM) for which a positive Environmental Authorisation was issued on 13 October 2011.

4.1 Physical Environment

The site lies adjacent to the National Highway 1 (N1), approximately 30 km east of Touws River and 8 km Southwest of Matjiesfontein (Figure 1). The town of Matjiesfontein is an important tourism destination and is also a declared National Heritage Monument. Given the remote location of and heritage status of Matjiesfontein, the surrounding landscape is also of cultural importance. The road extends over three farms, namely Elandskrag 1/269, RE/269 Elandskrag and RE/164 Jantjesfontein (Figure 2).

Figure 1: Location Map
The road runs along the summit of the Witberg mountain range, at an elevation of between 1,250 and 1,400 m. The ridge has a narrow crest, some 20 – 150 m wide, which falls steeply away to both the north and south, with slopes approaching 45° in some places. The ridge drops to the west. The descending sections of the track drop at a slope of less than 10% and do not appear to pose a significant long-term erosion risk. Some short, steep areas would have a high erosion risk. Four sections of particular concern were observed along the track, varying from approximately 30 m to 300 m in length (Section 10).

In terms of geology and soils, the ridges are generally quartzitic with very shallow, rocky soils. The lower-slopes and valley bottoms are largely underlain by shale, which may form loose gravel on the slopes or give rise to heavier clay soils on the flats. Some of the lower slopes and plains, particularly in the eastern parts of the site, contain coarse sands and gravels of a quartzitic nature.

The climate of the study area can be regarded as mild to warm with rain throughout most of the year. The long-term average annual rainfall of the valleys to the south is approximately 200 mm, while immediately to the north near Matjiesfontein, the figure is around 120 mm. On top of the mountain ridges where the road is located, the rainfall (400 mm per year) is somewhat higher due to the increased altitude. Rainfall is typically erratic, both locally and seasonally and is therefore not reliable for agricultural practices.

Due to the rugged nature of the area, there are numerous drainage lines coming off the larger ridges and mountain sides. However, the surrounding plains are far more arid, featuring no perennial rivers in the immediate area. The vegetation of the site reflects the varied topography and associated geology of the area with several different vegetation types occurring in close proximity. Matjiesfontein Quartzite Fynbos grow predominantly on the ridges, while Matjiesfontein Shale Renosterveld occurs mostly in the valleys between the ridges as well as on the lower slopes of the ridges themselves.

Koedoesberge-Moordenaars Karoo dominates the lowlands of the north-eastern section of the site, while Matjiesfontein Shale Fynbos occurs on the ridges and
mountain slopes of the southern parts of the site. The road pertaining to this S24G Application is restricted to the Matjesfontein Quartzite Fynbos vegetation type occurring along the higher ridges.

The National Environmental Management: Biodiversity Act (Act No. 10 of 2004) provides for listing threatened or protected ecosystems, in one of four categories: critically endangered (CR), endangered (EN), vulnerable (VU) or protected. The Draft National List of Threatened Ecosystems (Notice 1477 of 2009, Government Gazette No 32689, 6 November 2009) has been gazetted for public comment. The list of threatened terrestrial ecosystems supersedes the information regarding terrestrial ecosystem status in the South African National Spatial Biodiversity Assessment of (NSBA) 2004.

All the vegetation types present are listed by Mucina and Rutherford (2006) as Least Threatened, and none are listed within the National List of Threatened Ecosystems (Notice 1477 of 2009). Only about 15% of Matjesfontein Quartzite Fynbos habitat has been transformed for crop production. However, the conservation target for Matjesfontein Quartzite Fynbos is 27% and it is estimated that 5% is currently formally conserved within Anysberg Nature Reserve.

The site falls within the planning domain of the Biodiversity Assessment of the Central Karoo District Municipality (CKDM). This district-wide biodiversity assessment was commissioned to inform Spatial Development Frameworks (SDFs), Biodiversity Sector plans, Environmental Management Frameworks (EMFs), Strategic Environmental Assessments (SEAs) and the EIA process.

The Biodiversity Assessment identifies Critical Biodiversity Areas (CBAs) which represent biodiversity priority areas that should be maintained in a natural to near natural state. The CBA maps indicate the most efficient selection and classification of land portions requiring safeguarding in order to meet national biodiversity objectives. It is important to consider the results of these maps since they were designed specifically for use in the EIA process and are extensively used by local conservation authorities in their decision-making with regards to the suitability and likely impact of new developments on biodiversity.

When incorporated into municipal SDFs and bioregional plans, such fine-scale plans are recognised under NEMA and the various activities listed under the act as described in Section 2.4. The CBA map for the general area surrounding the site is depicted in Figure 3. The map indicates that while some parts of the road fall within areas classified as CBA, the majority of the road lies within an Ecological Support Area. The road traverses two sections of CBA. The first section is at the start of the road near the communication masts and is about 370 m long, while the second is approximately 8 km along the road and is approximately 730 m in length. It is important to recognise that the CBA map was derived using hexagonal cells, each with a series of attributes which are used as input to the algorithm which produced the final map. Consequently, the fact that a certain cell is classified as a CBA does not necessarily mean that the entire cell contains the biodiversity features for which it was selected.

Certain cells may not have any known significant biodiversity features, but are selected in order to ensure connectivity between different areas of CBA, or in order to ensure that conservation targets for different vegetation units are met. Therefore, the impact of the road on CBAs needs to be evaluated within this context and the actual presence of significant biodiversity features within the impacted areas as observed on
the ground. For this reason, a qualified and experienced botanist, Mr Simon Todd, was appointed to undertake an Ecological Impact Assessment (Section 10.1).

Figure 3 below indicates that the majority of the road passes through areas classified as Medium Sensitivity, but occasionally passes through or runs along the border of areas classified as High and Very High sensitivity. These higher sensitivity areas are those areas associated with steep slopes vulnerable to erosion as well as steep south-facing slopes which represent mesic areas which can function as refuges during times of climate variability. All drainage lines are classified as Very High Sensitivity, but the figure illustrates that the road does not actually cross any drainage lines.

Figure 3: Critical Biodiversity Areas map of the area surrounding the Witberg Road¹

¹ Note: This map is an extract of the Critical Biodiversity Areas map produced as part of the Biodiversity Assessment of the Central Karoo District Municipality. This information was obtained from the South African National Biodiversity Institute website.
4.2 Baseline Social Environment

4.2.1 Introduction

The proposed wind farm project site is located in the Western Cape Province’s Central Karoo District Municipality (CKDM) and in the Laingsburg Local Municipality (LLM). The CKDM is one of five districts situated within the Western Cape Province. The District comprises of three local municipalities, namely Beaufort West, Prince Albert, Laingsburg as well as the District Management Area (DMA) of Murraysburg. The CKDM is the largest district in the Western Cape Province at 38,853 km². Despite its large land mass, it is sparsely populated and largely rural.

4.2.2 Regional Site Setting

(a) Statutory and Private Nature Reserves

There are several private nature reserves and game farms within a 30 km radius of the proposed Witberg Wind Farm site. These private nature reserves include the Bijstein Private Nature Reserve (approximately 8 km west of the site), the Witteberg Private Nature Reserve (approximately 2.5 km south of the site) and the Rietfontein Private Nature Reserve located in Matjiesfontein (approximately 9 km from the site). The statutory reserves in the area include the Touws River Nature Reserve approximately 50 km west of the site and the Anysberg Nature Reserve, located approximately 2.5 km from the south-eastern boundary of the site.

(b) Historic Town of Matjiesfontein

Matjiesfontein is an historic town located approximately 9 km to the north-east of the proposed site and is a designated National Heritage Monument of historical importance. It is a well-visited tourist attraction, frequented by weekend visitors from the region and tourists on-board luxury steam train services such as Rovos Rail and the Blue Train.

(c) Description of the Affected Farms

The project site is located on three properties namely, RE/164 Jantjesfontein, Elandskrag 1/269 and RE/269 Elandskrag. On the proposed project site, the main activity is livestock farming as practiced by the landowners directly affected by the project; however oats and lucerne (alfalfa) are also grown. In the past wheat was grown on the site but it is no longer commercially viable. The drinking water used for the livestock is drawn from boreholes and dams located on the farms. Some of the water sources in the area are rich in iron oxide. As a result, irrigation systems do not work effectively as they get clogged with the iron oxide.

The majority of the neighbouring farms are used for weekend and holiday retreats and not for commercial farming. This, according to the landowners, has led to a dramatic increase in the price of farm land. Furthermore, less stringent measures to eliminate predators on these properties have resulted in large-scale livestock losses for adjacent farm owners.
4.3 Demographic Profile

4.3.1 Population Distribution

The population of the CKDM was 56,230 at the time of the 2007 Community Survey. This indicated a seven percent decline in the population as compared to 2001. The decrease in population could be attributed to the decline in the transportation services and agricultural activities in the area. As previously mentioned, the CKDM is the largest district in the province in terms of land area, however due to its relatively small population, there is a population density of only 1.6 persons/km². The CKDM is primarily urbanised, with 80% of the population living in urban areas. The LLM has a population of 7,330 people; and there has been a gradual increase in the population since 2001. The LLM covers approximately 8,781 km² and its population density is 0.83 persons/km², lower than that of the CKDM. The majority of its population (91%) live in urban areas.

4.3.2 Ethnic Composition

The racial composition of the population within the CKDM comprises 80% coloured, followed by 10% white and 10% black/African. The population of LLM has a slightly larger distribution of coloured people at 83%, followed by 15% white and 2% black/African.

4.3.3 Economic Profile

The economy of the CKDM comprises mostly of transport and communication sectors, financial and business services, wholesale and retail, catering and accommodation, as well as agriculture, forestry and fishing. During the period of 1995 - 2004, approximately 20.9% of revenue was attributed to the transport and communication sectors. Finance and business services were responsible for 18.4% of revenue, followed by wholesale, retail trade, catering and accommodation at 17.2%. Agriculture, forestry and fishing industries comprised 10.5% of revenue at the CKDM level.

4.4 Employment

Based on the CKDM's Integrated Development Plan (IDP) 2007 - 2011, 36% of the population are employed, 20% of the population are unemployed and 44% of the population are not economically active. Between 2001 and 2006 the percentage of employment-seekers was 3.2% higher than the average employment growth rate (0.6%). The labour market is currently unable to absorb the high number of job-seekers.

In the LLM, approximately 16.3% of those aged between 15 and 65 years are unemployed. Of the unemployed persons, 96% are coloured, 2% are black/African and 2% are white. In the LLM, approximately 52.4% of the population is considered to be skilled, versus only 42% at the broader, district municipality level.
4.4.1 Income Levels

Approximately 35% of households in the CKDM had a monthly income of R800 or less, as well as 7% of households not earning an income. Female-headed households comprise 35% of all households, with 1.2% of households headed by those aged 15 - 19 years. The households headed by females and children are potentially more vulnerable than others, given their status as vulnerable groups.

The majority of households in the LLM (44%) earn an income of between R4,812 and R9,600 per month, followed by 16% that earn between R12 and R4,800, and 15% that earn between R9,612 and R19,200. Approximately 1% of the population have no income; this is a relatively small percentage considering the illiteracy levels in the area.

4.4.2 Local Workforce

Agriculture comprises the main source of employment for residents in the area. Another income source for local residents is derived from government grants (pension, disability and child support). The grant amounts are between R600 and R1,060 for pension, R240 for child support and R1,080 for disability.

4.5 Socio-economic impacts of the Witberg Road

A local contractor was employed for the construction of the track, with a total project value of R84,000. In addition, subcontractors for the establishment of the mast foundations were also sourced from the local area (Laingsburg). It is the intention of the Applicant to keep sourcing local labour for the maintenance of the access track.
5 **DESCRIPTION OF THE PROPOSED PROJECT**

G7 was granted approval by the LLM and the CAA on 27 July 2010 and 28 July 2010, respectively, for the construction of three 60 m meteorological masts on their proposed Witberg Wind Farm, situated between Touws River and Matjesfontein in the Western Cape.

The need and desirability for an access road to the construction site led to the establishment of a jeep track on May / June 2010 at the top of the ridge in order to gain access to the construction sites of the masts. A local contractor appointed for the construction of the track and a D7 Bulldozer was used for this purpose. The track is approximately 12.7 km long and runs along the ridgeline of the mountain starting at the existing communication masts towards the eastern end of the mountain. The track is approximately 2.5 – 3 m wide and has mostly been constructed by clearing the vegetation and the topsoil to a shallow depth.

In some of the steeper sections, a greater amount of material was removed or relocated in order facilitate the construction of the road. An attempt was made along some of the steeper sections to create diversion berms across the road, but these have largely become eroded or filled to the extent that they no longer function satisfactorily.

The road is currently used for service and maintenance of the masts and by the various specialists visiting the site for ongoing monitoring and assessment purposes. It is also used by the farmers for ongoing maintenance of property fences. Since the road terminates without reaching any other roads, it does not create a thoroughfare and cannot be travelled in a single direction only and can only be accessed from the pre-existing access to the ridge for the communication masts. As such, access to the road is strictly controlled due to the presence of four locked gates which control access to the communication masts.

Although the width and length of the road did not trigger any activities pertaining to the construction of roads as published under Government Notices R386 and R387 of NEMA, the DEA is of the view that Activities 12 and 16(b) under GN R 386 were triggered (Section 6).
As stated in Section 5 above, the DEA is of the opinion that the construction of the access road triggered Activities 12 and 16(b) published under GN R 386 of NEMA. The details of these activities are provided in Table 2 below.

**Table 2: Details of Listed Activities Government Regulations R 386 of 2006**

<table>
<thead>
<tr>
<th>Government Regulations R 386 of 2006</th>
<th>Details of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered or an endangered ecosystem listed in terms of Section 52 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).</td>
</tr>
<tr>
<td>16</td>
<td>The transformation of undeveloped, vacant or derelict land to –</td>
</tr>
<tr>
<td></td>
<td>(b) residential, mixed, retail, commercial, industrial or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare.</td>
</tr>
</tbody>
</table>

Applicable legislation that must be considered is listed in Table 3 below:

**Table 3: Applicable Legislation**

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Details/Applicable Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Constitution of the Republic of South Africa (Act No. 108 of 1996)</td>
<td>The Constitution of the Republic of South Africa is the supreme law of South Africa and is the statute against which all other laws (both statutory instruments and the common law) must be measured. Any legislation which may be in conflict with the Constitution, is considered invalid, subject to the provisions of the limitations clause contained in Section 36. The Bill of Rights forms the cornerstone upon which the constitutional dispensation in South Africa is built. Section 24 of the Constitution specifically refers to Environmental Rights, i.e. “Everyone has the right to an environment which is not harmful to their health or well-being; and to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures”.</td>
</tr>
<tr>
<td>National Environmental Management Act (Act No. 107 of 1998)</td>
<td>The National Environmental Management Act (NEMA) provides the legislative framework for environmental management in South Africa. The stated purpose of NEMA is, “to provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions exercised by organs of state...”</td>
</tr>
<tr>
<td>Legislation</td>
<td>Details/Applicable Sections</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Activities identified in terms of Section 24(2)(a) and (d) of NEMA, which may not commence without environmental authorisation from the competent authority and in respect of which the investigation, assessment and communication of potential impact of such activities must follow the procedure as described in regulations 21 to 35 of the NEMA EIA Regulations. If the activity is listed in GN R544 and R546 an applicant applies for authorisation by undertaking a basic assessment. If the activity is listed in GN R545 then a full Scoping and EIA is required. However, as the above government notices were only promulgated on 02 August 2010, after the construction of the Witberg Access road, GN R 386 and R 387 are applicable for this development.</td>
<td></td>
</tr>
</tbody>
</table>
| National Environmental Management: Biodiversity Act (Act No. 10 of 2004) | This Act provides for the following:  
- Listing of ecosystems which are threatened and in need of protection (Section 52) (none published as yet);  
- Identifying any process or activity in such a listed ecosystem as a threatening process (Section 53) (none published as yet);  
- A list of threatened and protected species has been published in terms of Section 56(1), Government Gazette 29657; and  
- Identification of protected species. The following notices have been published, i.e. GN R150 (commencement of Threatened and Protected Species Regulations, 2007), GN R151 (Lists of critically endangered, vulnerable and protected species) and GN R152 (Threatened or Protected Species Regulations). |
| National Forests Act (Act No. 84 of 1998) | The Act involves the protection of trees and forests, regulates access to and use of forest resources, and provides for the declaration of protected trees (both species and specimens). |
| Conservation of Agricultural Resources Act (Act No. 43 of 1983) | The Act involves the following:  
- Protection and conservation of agricultural land.  
- Prohibition of the spreading of weeds (Section 5);  
- Classification of categories of weeds and invader plants (Regulation 15 of GN R1048) and restrictions in terms of where these species may be grown; and  
- Requirement and methods to implement control measures for alien and invasive plant species (Regulation 15E of GN R1048). |
| National Heritage Resources Act (Act No. 25 of 1999) | This Act involves the following:  
- Stipulates assessment criteria and categories of heritage resources according to their significance (Section 7); |
<table>
<thead>
<tr>
<th>Legislation</th>
<th>Details/Applicable Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Provides for the protection of all archaeological and Palaeontological sites, and meteorites (Section 35);</td>
</tr>
<tr>
<td></td>
<td>• Provides for the conservation and care of cemeteries and graves by South African Heritage Resources Agency (SAHRA) where this is not the responsibility of any other authority (Section 36);</td>
</tr>
<tr>
<td></td>
<td>• Requires the compilation of a conservation management plan as well as a permit from SAHRA for the presentation of archaeological sites as part of tourism attraction (Section 44).</td>
</tr>
<tr>
<td></td>
<td>• List activities which require developers to notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development (Section 38). One such activity listed under Section 38 is the commencement of a linear activity, including roads, exceeding 300 m in length. For this reason, Heritage Western Cape will be a commenting authority on the S24G Application.</td>
</tr>
</tbody>
</table>
7 GENERAL APPROACH TO S24G APPLICATION AND PUBLIC PARTICIPATION

The S24G Application and public participation for the project has been undertaken in accordance with the principles of Integrated Environmental Management (IEM). IEM, by definition, implies an open and participatory process whereby stakeholders and other I&APs are invited to review and comment on a proposed project. The scoping and public participation processes being undertaken for the project are broadly represented in Figure 4, and summarised in Section 8 below.

The primary intention of the approach outlined above is to identify issues, concerns and recommendations and facilitate their incorporation into the formulation of mitigation measures to offset the negative impacts and increase the positive impacts associated with the road.

The DEA is to assess the information provided in this report, including the comments received from I&APs, take into consideration all applicable legislation related to this activity and issue an Environmental Authorisation or direct the G7 to cease the activity and rehabilitate the site.
8 SUMMARY OF THE S24G APPLICATION AND PUBLIC PARTICIPATION PROCESS

The S24G Application process consists of the following steps:

**Step 1:** A person or company ascertains whether he / she / they are responsible for the commencement or continuation of an activity requiring authorisation in terms of the EIA Regulations without the necessary authorisation.

**Step 2:** An application for rectification is submitted by hand to the DEA.

**Step 3:** The application is reviewed. This may include a site inspection to verify information provided. Based on the review of the application, the applicant will be advised on further information required to consider the application.

**Step 4:** The Minister or the relevant Member of Executive Council (MEC) advises the applicant on further procedural and information requirements by means of a notice. This may include the compilation of a report after conducting prescribed public consultation. The Minister or relevant MEC will also advise the applicant on the administration fine payable and details of the account where monies must be deposited.

**Step 5:** The applicant follows the process prescribed by the Minister or relevant MEC and pay the fine.

**Step 6:** The applicant submits the required reports together with proof of payment of the fine to the department.

**Step 7:** The department reviews the reports and advises the Minister or relevant MEC to inform his decision.

**Step 8:** The Minister or relevant MEC communicates his decision to the applicant. This decision could be either:

- issue the applicant with an Environmental Authorisation; or
- issue the applicant with a directive instructing him to cease with the activity and rehabilitate the environment.

**Step 9:** The applicant implements the Minister's or relevant MEC's decision.
Figure 4: S24G Application process
9 ALTERNATIVES AND METHODOLOGY FOR MEASURING IMPACTS

9.1 Alternatives

Two alternatives were considered as part of this S24G Application. As the jeep track has already been constructed, the options assessed in this report include closing the road and completely rehabilitating the disturbed site, or keeping the existing road and implementing mitigation measures proposed by the specialist studies carried out as part of the S24G Application.

9.2 Methodology for measuring impacts

The methodology employed in assessing the significance of the possible impacts (positive, neutral, negative, as well as cumulative) associated with the proposed project is described in this section. Direct and indirect potential were assessed.

The purpose of the impact assessment is to:

- Address issues that have been raised during the consultation process;
- Assess all identified impacts and determine the significance of each impact; and
- Formulate mitigation measures in order to minimise negative impacts and optimise the effects of positive impacts.

The significance of each impact is predicted by assessing each of the impacts according to the following criteria:

- **Extent of the impact.** This includes assessing the spatial scale of the impact, i.e. is it local (within the boundaries of the study site), regional, national or international.

- **Duration of the impact.** The lifespan of the impact is assessed, i.e. is it short term (0 - 5 years) Medium term (6 - 15 years) long term (where the impact will cease after the operational life of the proposed project) or permanent (the impact will persist beyond the operational life of the proposed project).

- **Intensity of the impact.** The intensity or severity of the impact would be indicated as either Low (where the impact affects the environment in such a way that functioning and processes are not affected), Medium (i.e. where the affected environment is altered but functioning and processes continue albeit in a modified way) or High (i.e. where functioning and processes are altered to the extent that they will temporarily or permanently cease).

- **Probability of occurrence.** The likelihood of the impact actually occurring would be indicated as either Improbable (the possibility of the impact materialising is very low as a result of design or historic experience), Probable (there is a distinct possibility that the impact will occur), Highly probable (it is most likely that the impact will occur), or Definite (the impact will occur regardless of the implementation of any prevention measures).

- **Significance of the impact.** Based on a synthesis of the information contained in the criteria above, the potential impact would then be assessed in terms of the following significance criteria:
- **Low** (i.e. where the impact would not have any influence on the decision to authorise the proposed project)
- **Moderate** (i.e. where the impact should influence the decision to authorise the proposed project unless it is effectively mitigated)
- **High** (i.e. where the impact would influence the decision to authorise the proposed project regardless of any mitigation measures)

For each potential impact the following is described:

- The source(s) or cause(s) of impact;
- The severity of the impact (e.g. its magnitude, extent, duration, etc) as well as the likelihood of its occurring;
- The assessed significance of the impact; and
- Possible measures for avoiding or mitigating the impact.
10 DETAILS OF THE SPECIALISTS AND SPECIALIST STUDIES

A summary of each specialist study is provided below. The details include:

- Name of the specialist
- Expertise of the specialist
- Scope and purpose of the study
- Methodology adopted
- Assumptions and limitations
- Summary of findings
- Where applicable, a summary impact table providing:
  - Nature, extent, probability, degree to which can be reversed, significance
  - Cumulative impacts
  - Proposed mitigation measures
  - Advantages and disadvantages of each option
  - Mitigation measures and monitoring

Refer to Appendix G for complete curricula vitae of specialists.

10.1 Ecology

The complete Ecology Report can be found in Appendix H.

10.1.1 Name of the specialist

Simon Todd
Simon Todd Consulting

10.1.2 Expertise of the specialist

Mr Todd holds a Masters Degree in Conservation Biology (cum laude) from the University of Cape Town and is a registered member of the The South African Council for Natural Scientific Professions (SACNASP). Previously he held the position of Chairman and is currently a committee member of the Arid Zone Ecological Forum.

Mr Todd has published numerous research reports as well as a large number of papers in leading scientific journals dealing largely with human impacts on the vegetation of these regions. He currently serves as a guest lecturer at two universities and has also served as an external examiner. He has reviewed papers for more than ten international ecological journals.

Mr Todd has over 14 years of experience working in the in the ecological field as an independent contractor and consultant and has worked extensively throughout the Western, Northern and Eastern Cape on a wide variety of ecological projects and assessments. Mr Todd currently works almost exclusively on specialist assessment of renewable energy facilities and has conducted a large number of specialist ecological
assessments across the country on such facilities ranging in size from small (5MW) to very large projects (750 MW).

10.1.3 Scope and purpose of the study

The following activities and associated assessments form the basis of this specialist ecological study which aims to assess the potential impacts of the access road on the ecological receiving environment of the study area.

- Confirm and describe the vegetation status in different parts of the site.
- Develop a description of the broad ecological characteristics of the site and its surrounds in terms of patchiness, patch size, relative isolation, connectivity, corridors, disturbance regimes, ecotones, buffering, viability, etc.
- Locate and confirm the presence and distribution of wetlands and drainage lines on site
- Determine whether any protected trees occur on site or not.
- The identity and extent of any alien woody plant invasion in and around the site
- The potential presence of species of concern is evaluated. This is done by assessing habitat suitability for those plant and animal species of conservation concern that have been assessed as potentially occurring in the area. Particular attention is paid to those plant and animal species classified as threatened (VU, EN or CR), Near Threatened or Critically Rare. It must be noted that this assessment does not constitute a detailed search for these species, which requires separate specialist studies.
- In terms of biodiversity process, the following are identified or described:
  - The key ecological ‘drivers’ of ecosystems on the site and in the vicinity, such as fire and grazing.
  - Environmental gradients (e.g. upland-lowland), biome boundaries, soil interfaces or sand movement corridors on the site or in its vicinity.
  - Any possible changes in key processes, e.g. increased fire frequency (with specific consideration of lightning strike) or drainage/artificial recharge of aquatic systems.
  - The condition and functioning of rivers and wetlands (if present) in terms of: possible changes to the channel, flow regime and naturally-occurring riparian vegetation.
- Seasonal variation is to be considered as far as possible based on secondary data.
- Undertake an assessment of impacts on flora, habitats and fauna, identifying appropriate mitigation measures and enhancement techniques where appropriate.
- Identify permits and relevant legislation that may be required in terms of removal of vegetation.
- In terms of biodiversity process, determine the impact of the road in terms of soil erosion and mitigation measures for reducing the risk of erosion.

10.1.4 Methodology adopted

a) Site Visits

The site was previously visited over two days during November 2010 and assessed as part of the ongoing EIA process for the establishment of a wind farm on the site.
The ecological information collected during that site visit is used in this assessment and was supplemented by a second site visit that took place during November 2011, which was directed specifically at investigating the ecological risks and features associated with the presence and construction of the road.

During the initial site visit, the different biodiversity, habitat and landscape features present at the site were identified and mapped. This included searches for listed plant species along the ridge and elsewhere at the site, as well as faunal surveys and habitat assessments. Sensitive habitats such as wetlands and unique edaphic environments were identified and noted in the field and recorded on a GPS and satellite imagery of the site. The information gathered during the initial site visit was used to generate a sensitivity map of the site, which was included in the Ecological Assessment which forms a part of the above-mentioned EIA process. This map includes the area through which the road has been constructed and is reproduced below in Figure 5.

Figure 5: Ecological Sensitivity map of the area surrounding the Witberg Road

During the second site visit, the ecological impacts associated with the construction and presence of the road were specifically assessed in the field. This included assessing the current and future potential risks and impacts likely to be associated with the road, particularly the current evidence of and likely future risk of erosion. This included generating a detailed, 1 m resolution elevation profile of the road using a GPS with a barometric altimeter, accurate to 1 m. All sites along the road which were observed to be eroded or pose a future erosion threat were identified, recorded with a GPS and photographed. The presence of any sensitive environments, such as wetlands, along the course of the road was also documented, and the manner in which the road could directly or indirectly affect these areas assessed in the field.
b) Data Review and Sourcing

Following the site visit and the identification of the different ecological features of the site, lists of mammals, reptiles and amphibians which were observed at the site were augmented with species likely to occur at the site based on distribution records from the literature and various spatial databases (SANBI’s SIBIS and BGIS databases). Various literature was consulted (as detailed in the Specialist Report) for reptiles, amphibians and mammals. The lists provided are based on species which are known to occur in the broad geographical area as well as an assessment of the availability and quality of suitable habitat at the site. For each species, the likelihood that it occurs at the site was rated along a scale of low, medium, high and definite. The conservation status of each species is also listed.

c) Assessment and Sensitivity Mapping

The risks and impacts associated with the road were assessed in the field based on the different habitats present within the immediate vicinity of the road or which had been directly impacted by the road. Although it was clearly not possible to assess exactly how many individuals of which listed plant species may have already been impacted by the road, the presence of listed plant species and their population sizes or abundance near to the road was assessed. The presence of any rare or unique habitats along the road were also noted and their locations recorded. Since erosion is one of the major risks associated with the road, the presence of erosion or the potential for future erosion along the road was assessed in the field by recording any erosion present at the time of the site visit as well as the potential for erosion as estimated by the elevation profile generated during the second site visit. All sites along the track that were or had been waterlogged and constituted a risk in terms of vehicles getting bogged down or rutting the road were also recorded.

The Ecological Sensitivity Map produced as part of the EIA study was derived by integrating the information collected on-site with the available ecological and biodiversity information available in the literature and the various publically available spatial databases. The ecological sensitivity of the different units identified in the mapping procedure was rated according to a scale from low, medium, high and very high.

10.1.5 Assumptions and limitations

The major potential limitation associated with the sampling approach is the narrow temporal window of sampling. Ideally, a site should be visited several times during different seasons to ensure that the full complement of plant and animal species present are captured. However, this is rarely possible due to time and cost constraints and consequently the representivity of the species sampled at the time of the site visits should be taken into account. Both site visits took place at a similar time of year with the result that it was not possible to assess the presence of plant species such as geophytes which are not present during the summer months. Geophytes aside, it was relatively wet during both site visits and the perennial vegetation was in a relatively good vegetative condition with a large proportion of species in flower, during either or both of the site visits. Few reptiles were observed during the initial site visit, probably because the weather was relatively cool at the time, however it was warmer during the second site visit and more reptiles were observed. The lists of amphibians, reptiles and mammals for the site are based on those observed at the site as well as those likely to occur in the area based on their distribution and habitat preferences.
This represents a sufficiently conservative and cautious approach which takes account of the study limitations.

10.1.6 Summary of findings

The major potential impacts associated with the road were identified as follows:

- Erosion
- Alien plant invasion
- Impacts on biodiversity (listed plant species)
- Faunal Impacts
- Disruption of ecosystem processes (Fire)

The assessment indicates that all potential impacts can be mitigated to a low level. Despite the relatively sensitive nature of the receiving environment, the road, with mitigation measures applied, is not seen to pose a significant environmental impact. This results from the fact the road is not very wide and does not significantly deteriorate the quality of the ridgeline habitat through which it runs. Various mitigation measures to reduce the current and future potential impact of the road are provided. This includes monitoring programmes for alien plants and erosion. Mitigation of erosion potential should however not be viewed as a once-off exercise and regular maintenance of the road will be required into the future.

Table 4: Summary Impact Table for Ecology

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Extent</th>
<th>Duration</th>
<th>Intensity</th>
<th>Probability</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment of Erosion Risk associated with the Witberg Road</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>No Mitigation</td>
<td>Local</td>
<td>Long-term</td>
<td>High</td>
<td>Definite</td>
<td>High</td>
</tr>
<tr>
<td>Alternative 1</td>
<td>With Mitigation</td>
<td>Local</td>
<td>Long-term</td>
<td>Low</td>
<td>Definite</td>
<td>Low</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>Full Rehabilitation</td>
<td>Local</td>
<td>Medium-term</td>
<td>Low</td>
<td>Highly Probable</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Assessment of Alien Plant Invasion Risk associated with the Witberg Road</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>No Mitigation</td>
<td>Local</td>
<td>Long-term</td>
<td>Medium</td>
<td>Highly Probable</td>
<td>Medium</td>
</tr>
<tr>
<td>Alternative 1</td>
<td>With Mitigation</td>
<td>Local</td>
<td>Long-term</td>
<td>Low</td>
<td>Highly Probable</td>
<td>Low</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>Full Rehabilitation</td>
<td>Local</td>
<td>Short-term</td>
<td>Low</td>
<td>Highly Probable</td>
<td>Very Low</td>
</tr>
<tr>
<td><strong>Assessment of the impact of the Witberg Road on plant biodiversity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>No Mitigation</td>
<td>Local</td>
<td>Long-term</td>
<td>Low</td>
<td>Definite</td>
<td>Low</td>
</tr>
<tr>
<td>Alternative 1</td>
<td>With Mitigation</td>
<td>Local</td>
<td>Long-term</td>
<td>Low</td>
<td>Definite</td>
<td>Low</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>Full Rehabilitation</td>
<td>Local</td>
<td>Medium Term</td>
<td>Low</td>
<td>Highly Probable</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Assessment of the impact of the Witberg Road on fauna</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>No Mitigation</td>
<td>Local</td>
<td>Long-term</td>
<td>Low</td>
<td>Definite</td>
<td>Low</td>
</tr>
<tr>
<td>Alternative 1</td>
<td>With Mitigation</td>
<td>Local</td>
<td>Long-term</td>
<td>Low</td>
<td>Definite</td>
<td>Low</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>Full Rehabilitation</td>
<td>Local</td>
<td>Medium</td>
<td>Low</td>
<td>Highly Probable</td>
<td>Very Low</td>
</tr>
<tr>
<td><strong>Assessment of the impact of the Witberg Road on ecosystem processes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>No Mitigation</td>
<td>Local</td>
<td>Long-term</td>
<td>Low</td>
<td>Definite</td>
<td>Low</td>
</tr>
<tr>
<td>Alternative 1</td>
<td>With Mitigation</td>
<td>Local</td>
<td>Medium-term</td>
<td>Low</td>
<td>Definite</td>
<td>Low</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>Full Rehabilitation</td>
<td>Local</td>
<td>Medium Term</td>
<td>Low</td>
<td>Definite</td>
<td>Very Low</td>
</tr>
</tbody>
</table>
10.2 Agriculture

The complete Report on Soil and Agricultural Potential can be found in Appendix I.

10.2.1 Name of the specialist

Mr Garry Paterson
ARC-Institute for Soil, Climate and Water

10.2.2 Expertise of the specialist

Mr Garry Paterson holds a Bachelor of Science (Honours) degree in Geography from the University of Strathclyde in Glasgow, Scotland, as well as a Masters in Soil Science (cum laude) from the University of Pretoria. He has authored various publications, including three refereed articles in the South African Journal of Plant and Soil.

He is a Registered Natural Scientist with the South African National Council for Natural Scientific Professions, and is a member of the South African Soil Classification Working Group as well as the Soil Science Society of South Africa, for which he was President from 2005 – 2007. He was also a Council Member of the South African Soil Survey Organisation from 2002 – 2003, and is currently a Scientific Referee for the South African Journal for Plant and Soil.

His professional experience spans 30 years as a Soil Scientist, during which he has published over 200 soil survey reports. He was a Soil Scientist for the Soil and Irrigation Research Institute in Pretoria for over ten years, and has held his current position as Senior Soil Scientist at the ARC-Institute for Soil, Climate and Water since 1992.

10.2.3 Scope and purpose of the study

The ARC-Institute for Soil, Climate and Water (ARC-IS CW) was contracted by GIBB to supply soil information concerning an access road that has been constructed by G7.

Existing information was sourced and used to prepare the report. The following was important in this regard:

- Maps relevant to the properties, including the EIA report undertaken for the Witberg Wind Farm
- An understanding of current farming activities
- Soils (soil potential) and loss thereof due to new infrastructure
- Climate
- Existing lawful water use rights
- Infrastructure which may be affected
- Surface drainage conditions
10.2.4 Methodology adopted

Existing soil information was obtained from the map sheet 3320 Ladismith (Stehr et al., 1994) from the national Land Type Survey, published at 1:250 000 scale. A land type is defined as an area with a uniform terrain type, macroclimate and broad soil pattern. The soils are classified according to MacVicar et al (1977).

10.2.5 Assumptions and limitations

The agricultural impact assessment report is the result of a desktop so the detailed composition of the specific land types has not been ground-truthed. It should be clearly noted that, since the information contained in the land type survey is of a reconnaissance nature, only the general dominance of the soils in the landscape can be given, and not the actual areas of occurrence within a specific land type. There is also the possibility that other soils that were not identified due to the scale of the survey may also occur.

10.2.6 Summary of findings

The area under investigation contains 83.5% rock and surface outcrops. In addition, 12.5% of the land type has shallow, red or grey lithosols (<400 mm deep), with the remainder comprising slightly deeper soils in or near the stream beds. Due to the quartzitic parent material, the soils have a light texture, generally with less than 15% clay in the topsoil and of a medium to coarse grade.

The area also has steeply sloping terrain on both sides of the track, as well as a prevailing climate that is hot, dry and windy. Rainfall is erratic, both locally and seasonally and therefore cannot be relied on for agricultural practices, even if the soils were suited. From an agricultural perspective, the area where the track is located is isolated and difficult to access due to the steep topography.

- Soil Erosion

One aspect where concern may be raised is the possibility of increased soil erosion occurring due to the road construction.

In any situation where the topsoil is removed, there is an increased hazard of erosion, especially in areas of steeper topography. However, this was assessed by the Ecological Impact Assessment (Section 10.1).

- Loss of Agricultural Land

The road covers a very small surface area within the broader landscape, and combined with the shallow soils and climatic restrictions, this is not likely to lead to serious agricultural impacts. Further, due to the high presence of rock and shallow soils, as well as prevailing climate conditions and steep grade, this land is of little agricultural potential.
Table 5: Summary Impact Table Agriculture

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Extent</th>
<th>Duration</th>
<th>Intensity</th>
<th>Probability</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of Loss of Agricultural Land associated with the Witberg Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative 1</td>
<td>No Mitigation</td>
<td>Local</td>
<td>Long term</td>
<td>Low</td>
<td>Improbable</td>
<td>Low</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>Full rehabilitation</td>
<td>Local</td>
<td>Short term</td>
<td>Low</td>
<td>Improbable</td>
<td>Low</td>
</tr>
</tbody>
</table>

Although there is limited arable agricultural potential in the area, it would still be beneficial for the land owner to have the use of the road for access to grazing areas, fire prevention and other purposes. Provided that the road is well maintained and soil erosion does not become a problem (Section 5.1), it would be beneficial for the road to remain.

10.3 Visual

The complete Visual Statement can be found in Appendix J.

10.3.1 Name and company of specialist

Mr Reuben Heydenrych
Aurecon

10.3.2 Expertise

Mr Heydenrych is a qualified Environmental Assessment Practitioner with a wealth of experience. He holds a Masters in Philosophy (Environmental Management) which he obtained from the University of Cape Town. His key experience includes project management of various medium and large-scale infrastructural and environmental projects. He has been involved with EIA processes in South Africa and in various other African countries as required by relevant national legislation and in terms of international requirements as EIA team leader and team member. Mr Heydenrych also has experience in environmental advisory services and strategic environmental management including Strategic Environmental Assessments (SEAs), environmental scans, environmental feasibility studies and Environmental Management Frameworks (EMFs); Environmental Management Programmes (EMPs) for the construction and operational phases of infrastructure developments; and environmental auditing, including due diligence assessments, ISO 14001 systems development and auditing, legal compliance and waste management audits.

Mr Heydenrych has also obtained and a degree in Landscape Architecture from the University of Pretoria and has undertaken visual impact assessments for various large infrastructure and wind farm developments in the Western Cape.
10.3.3 Scope and purpose of the study

The Terms of Reference received from GIBB require the preparation of a visual opinion on the impacts of the access road. This requires conducting a site visit and the preparation of a visual statement on the visual impacts of the new access road.

10.3.4 Methodology adopted

The site was visited by the specialist in November 2011 to assess the visual impact of the road from various vantage points. The visual impact of the road was considered based on its location at the ridge of the terrain. An expert opinion on the visual impacts of the access road was composed according to the Terms of Reference.

10.3.5 Assumptions and limitations

Due to the nature of the development, an assessment according to one of the categories of visual impact assessment required by the Western Cape Guideline Document for Visual Impact Assessment falls outside the scope of this opinion.

10.3.6 Summary of findings

The visual impact of the access road is considered insignificant for the following reasons:

- The access road has no vertical dimension (i.e. it is not raised above the landscape like a building, nor excavated into the landscape), apart from it rising and falling with the natural topography. Therefore, the access road is not visible to visual receptors (e.g. motorists using the N1, tourists at Matjiesfontein or residents of farms in the valleys to the north and south of Witberg Ridge), all of whom are situated approximately 400 m to 600 m lower than the access road.

- The road itself is aligned on the crest of the Witberg Ridge. Due to the strict access control to the site of the existing telecommunications masts on the Witberg, all visual receptors (viewers) such as those mentioned above, are located several hundred metres below the crest of the ridge and a minimum of 2 km (horizontal distance) from the access road. Due to their relative vertical position in the landscape, it is highly unlikely that any of these viewers would be able to see the road on top of the ridge from their low vantage points.

- According the Bernard Oberholzer Landscape Architects (2011), the visibility of the wind turbines for the proposed Witberg Wind Energy Facility (which forms part of a different application), with hub heights up to 80 m, tends to be significant up to distances of 5 km. The access road, which has no vertical dimension, would be much less visible than the wind turbines and therefore, from distances of more than 5 km, its visual impact would be very limited. Arguably Matjiesfontein is the location of the most sensitive visual receptors in the area of visual influence, since it is frequented by tourists. However, Matjiesfontein is located a horizontal distance of 9.6 km from the Sentech Mast (the closest point of the access road). Thus, based on the distance from the closest sensitive visual receptors, the visual impacts of the access road would be insignificant.

- In spite of the degree of tonal and colour contrast between the access road and the surrounding undisturbed vegetation, this contrast can only be seen by users of the road and from an aerial viewpoint. This contrast would not be visible to visual receptors on the ground to the north and south of the Witberg Ridge.
10.4 Heritage

The complete Heritage Assessment Report can be found in Appendix K.

10.4.1 Name and Company of Specialist

Dr Jayson David John Orton
Archaeologist

10.4.2 Expertise

Dr Jayson Orton holds a Doctorate of Philosophy in Archaeology from the University of Oxford, as well as Bachelor of Arts, Honours and Master of Arts degrees in Archaeology from the University of Cape Town. His academic research has resulted in numerous publications, and conference presentations dealing with the Later Stone Age archaeology of the west coast of South Africa.

Dr Orton also has over 15 years of experience in the field as an archaeologist and is a member of the South African Archaeological Society Council, the Association for Southern African Professional Archaeologists (ASAPA), as well as the ASAPA Cultural Resources Management Section member. He is accredited under ASAPA as Principal Investigator (awarded 2007) for Coastal shell middens and Stone Age archaeology; as well as Field Director (awarded 2007): for colonial period archaeology, rock art and grave relocation.

10.4.3 Scope and purpose of the study

To assess the impacts to heritage resources that might have resulted from the construction of a road across the Witberg Mountains between Matjies River and Touws River.

10.4.4 Methodology

The field survey for the wind farm was conducted between 18 and 21 October 2010. During the course of assessing the locations of the wind turbines the entire course of the new gravel road was traversed providing excellent coverage for the assessment presented here. Therefore, no additional field study was undertaken.

10.4.5 Assumptions and limitations

Assessment of paleontological resources is strongly reliant on visible geological strata. To this end reliable assessment was only possible where fresh cuttings were available and the assessment had to be extrapolated across the study area based on geological strata.

In terms of archaeology, the only limitation experienced was the fact that the ground surface along the road had already been impacted thus preventing adequate examination of the actual footprint of the road. However, ground visibility in general was excellent and it is felt that the observations made along the mountain chain are sufficient for the present study.
10.4.6 Summary of findings

The operation of the road is expected to have a minimal impact on the palaeontology and archaeology of the area.

Although the area is very highly scenic and the N1 constitutes a major scenic route through the southern Karoo, the road is very unlikely to be visible to any degree from the N1 or from Matjiesfontein. Furthermore, if it is visible, this visibility would be very minor. This was confirmed by the visual study (Section 10.3).

As a result of the above findings no mitigation measures were recommended and the project should be granted a retrospective authorisation for either alternative. However, should the proposed wind farm ultimately not be constructed then any portions of the road not required by the land owner should be fully rehabilitated to reduce scarring of the mountains.

Table 6: Summary Impact Table Heritage

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Extent</th>
<th>Duration</th>
<th>Intensity</th>
<th>Probability</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assessment of archaeological impacts associated with the Witberg Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative 1</td>
<td>No Mitigation</td>
<td>Local</td>
<td>Permanent</td>
<td>Very Low</td>
<td>Improbable</td>
<td>Very Low</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>Full rehabilitation</td>
<td>Local</td>
<td>Permanent</td>
<td>Very Low</td>
<td>Improbable</td>
<td>Very Low</td>
</tr>
<tr>
<td></td>
<td>Assessment of landscape and visual impacts associated with the Witberg Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative 1</td>
<td>No Mitigation</td>
<td>Local</td>
<td>Long term</td>
<td>Low</td>
<td>Probable</td>
<td>Low</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>Full rehabilitation</td>
<td>Local</td>
<td>Short term</td>
<td>Very Low</td>
<td>Improbable</td>
<td>Very Low</td>
</tr>
<tr>
<td></td>
<td>Assessment of palaeontological impacts associated with the Witberg Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative 1</td>
<td>No Mitigation</td>
<td>Local</td>
<td>Permantent</td>
<td>Very Low</td>
<td>Improbable</td>
<td>Very Low</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>Full rehabilitation</td>
<td>Local</td>
<td>Permantent</td>
<td>Very Low</td>
<td>Improbable</td>
<td>Very Low</td>
</tr>
</tbody>
</table>
The aim of the Operational Environmental Management Plan (OEMP) (Appendix L) is to address environmental issues pertaining to the operation of the Witberg Road, and encourages best operational practices and will assist in ensuring that environmental damage during the operational phase is minimised. The effective implementation of the OEMP will ensure that the operational activities are conducted and managed in an environmentally sound and responsible manner.

The following issues are addressed in the OEMP:

- Statutory compliance
- Roles and responsibilities
- Environmental education and training
- Distribution of OEMP
- Notice board to road users
- Environmental Specifications
- Ongoing maintenance and monitoring
- Closure and rehabilitation
12 DETAILS OF THE PUBLIC PARTICIPATION PROCES FOLLOWED

12.1 Announcement of the project

The project was formally announced to the various authorities, key stakeholders and the general public (I&AP list in Appendix M). An advertisement was placed in the Worcester Standard and Die Burger on 19 and 20 January 2012 respectively (Appendices N) and notices placed at the entrance of the existing access road for the telecommunication masts on the N1 (Appendix O). The advertisement and notice gave a brief description of the proposed project and invited parties to register as I&APs. A Background Information Document (BID) (Appendix P) was also compiled which provides more detailed information to I&APs and invited them to raise any issues or concerns about the project and submit these to GIBB for inclusion to the IRR (Appendix R).

12.2 Public Review of Environmental Assessment Report

The S24G Application Environmental Assessment Report will be published for a 30 day public review period. The purpose of this comment period is to provide I&APs with an opportunity to review and comment on the report and to identify any further issues or concerns that need to be addressed before finalizing these reports for submission to the DEA. An Issues and Response Report will be submitted to the DEA as part of this report.
A summary of the key findings from the specialists are the following:

a. **No significant ecological impacts (with proper implementation of suggested mitigation measures)**

The major potential impacts associated with the road were identified as follows:

- Erosion
- Alien plant invasion
- Impacts on biodiversity (listed plant species)
- Faunal impacts
- Disruption of ecosystem processes (Fire)

The assessment indicates that all potential impacts can be mitigated to a low level. Despite the relatively sensitive nature of the receiving environment, the road, with mitigation measures applied, is not seen to pose a significant environmental impact.

b. **No significant impacts to agriculture**

The prevailing rockiness and shallow soils in the area should mean that any erosion that might occur should be localised and should not develop excessively, so that if the basic measures as addressed in the EIA report are implemented, the hazard should remain low. This was confirmed by the ecological assessment undertaken for the S24G Application. The road also covers a very small surface area within the broader landscape, and combined with the shallow soils and climatic restrictions, is not likely to be a significant issue.

c. **No significant visual impacts**

The visual impact of the access road is considered insignificant as the access road is not visible from below the ridge and presents no visual impact in comparison to the existing telecommunication and wind measurement masts. Further, in comparison to the significant visible impact of the wind turbines proposed as part of the Witberg Wind Energy Facility (which forms part of a different application), the access road, which has no vertical dimension, would be much less visible than the wind turbines and therefore its visual impact would be very limited.

In spite of the degree of tonal and colour contrast between the access road and the surrounding undisturbed vegetation, this contrast can only be seen by users of the road and from an aerial viewpoint. This contrast would not be visible to visual receptors on the ground to the north and south of the Witberg Ridge.

d. **No significant impacts to heritage**

The operation of the road is expected to have a minimal impact on the palaeontology and archaeology of the area, and will have very limited visibility to nearby scenic N1 route, as confirmed by the visual study. The road is also not visible from Matjiesfontein and will therefore have no significant impacts on the character of the town or its surrounding countryside.
Following the recommendations by the specialists and weighing up all the potential negative environmental impacts that were rated as High before or after mitigation, it is concluded that these impacts do not have a significant cumulative negative bearing on the environmental acceptance of this proposed development as long as they are mitigated/enhanced as recommended by the specialists and the EAP. The two main negative bio-physical impacts identified were impacts on bio-diversity and erosion. It was determined that the impacts of the construction of the road on flora, fauna and ecosystem processes was low to begin with, and with mitigation measures will remain low. However, the risks of erosion as a result of the construction of the road is high, but with mitigation measures put in place, it is also considered low. Once the OEMP is accepted, the activities for monitoring of erosion and the mitigation measures provided must be adhered to and implemented. These include:

- Erosion control berms must be maintained along the high-risk sections of road that have been identified in.
- Where erosion is observed to occur, stone packs must be used to fill where appropriate.
- Sections of track which become saturated during wet periods should be firmed with rock of gravel fill. This should be sourced on the ridge, so as to avoid the risk of bringing seed of alien species onto the ridge. Addressing the issue of water saturation is paramount, as vehicles tend to drive on the vegetation adjacent to the road to avoid wet areas, creating a wider road and exacerbating the problem.
- Water diversion structures should be put in place where possible to reduce erosion risk. The diversion structures should divert water off the road and disperse the water into the adjacent vegetation. It is important that the structures are properly constructed so that the energy in the water is dissipated and erosion of the adjacent slopes and vegetation does not occur.
- A monitoring programme should be instituted by the Applicant in order to monitor erosion problems along the road as they develop so that remedial actions can be instituted before any severe erosion develops. Erosion control structures require regular maintenance and therefore, monitoring and maintenance of the structures will need to be an ongoing activity that occurs for the life of the road.
- The Applicant must ensure that regular monitoring and inspection take place, so that if any signs of soil erosion commencing is observed, and mitigation measures can be put in place as timeously as possible. This maintenance should be continuous, and inspections should take place several times a year.

It would also appear that the stakeholder most negatively impacted on by the proposed development, namely the existing farm owner, also have some gain from the same development. As the road runs parallel to one of his boundary fences, which is on one of the remotest areas of his farm, it will better enable him to maintain these fences, which is a legal requirement for all agricultural landowners. The specialists involved therefore believe that with the correct monitoring and mitigation procedures in place these impacts are no longer of a High negative significance rating and are not fatal flaws of the development.

Based on all of the above, it is recommended that the development be authorised to continue, as long as the monitoring and mitigation measures identified in this report and incorporated in the final OEMP are implemented.
This report, and information or advice, which it contains, is provided by Arcus GIBB solely for internal use and reliance by its Client in performance of Arcus GIBB duties and liabilities under its contract with the Client. Any advice, opinions, or recommendations within this report should be read and relied upon only in the context of the report as a whole. The advice and opinions in this report are based upon the information made available to Arcus GIBB at the date of this report and on current SA standards, codes, technology and construction practices as at the date of this report. Following final delivery of this report to the Client, Arcus GIBB will have no further obligations or duty to advise the Client on any matters, including development affecting the information or advice provided in this report. This report has been prepared by Arcus GIBB in their professional capacity as Consulting Engineers. The contents of the report do not, in any way, purport to include any manner of legal advice or opinion. This report is prepared in accordance with the terms and conditions of the Arcus GIBB contract with the Client. Regard should be had to those terms and conditions when considering and/or placing any reliance on this report. Should the Client wish to release this report to a Third Party for that party's reliance, Arcus GIBB may, at its discretion, agree to such release provided that:

(a) Arcus GIBB written agreement is obtained prior to such release, and
(b) By release of the report to the Third Party, that Third Party does not acquire any rights, contractual or otherwise, whatsoever against Arcus GIBB and Arcus GIBB, accordingly, assume no duties, liabilities or obligations to that Third Party, and
(c) Arcus GIBB accepts no responsibility for any loss or damage incurred by the Client or for any conflict of Arcus GIBB interests arising out of the Client's release of this report to the Third Party.

Arcus GIBB (Pty) Ltd
Website : www.arcusgibb.co.za
Postal Po Box Physical 14 Kloof Street, Cape Town, 8001
Address : 3965, Cape Address :
Town, 8000
Contact Ms Jaana Email jball@gibb.co.za
Person : Ball Address :
Telephone 021 569 Fax No. : 021 424 5571
No. : 9100