



## environmental affairs

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

## BASIC ASSESSMENT REPORT

The rehabilitation of National Route 6, section 4, south of and at Penhoek Pass between kilometres 52.0 and 66.2.

(For official use only)

**File Reference Number:**

**Application Number:**

**Date Received:**


Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

### Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
11. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

**SECTION A: ACTIVITY INFORMATION**

Has a specialist been consulted to assist with the completion of this section?

YES	NO
	x

If YES, please complete the form entitled "Details of specialist and declaration of interest"

for appointment of a specialist for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

**1. ACTIVITY DESCRIPTION**

Describe the activity, which is being applied for, in detail<sup>1</sup>:

The project involves the rehabilitation of National Route 6, section 4, south of and at Penhoek Pass between kilometres 52.0 and 66.2. This section of road is between Queenstown and Jamestown in the Eastern Cape Province.

WorleyParsons RSA has been appointed by the South African National Roads Agency Limited as consulting engineers for the project. Dr Norbert Klages of Arcus GIBB (Pty) Ltd has been appointed as Environmental Assessment Practitioner for the project.

The section of the road before the Penhoek Pass will only be rehabilitated. The existing road reserve is approximately 32 m. The design cross section for the road will be two 3.7 m lanes with two 2.0 m paved shoulders before the pass.

The scope of the project includes the lengthening of the existing climbing lane from foot of the pass (at km 61.2) to the summit (at km 65.9). The effect of this will be an overall widening of the roadway by approximately 5.0 m. The cross section in the pass will be two 3.5 m lanes in a northerly direction and one 3.7 m lane south with two 1.0 m paved shoulders and a 2.5 m concrete drain.

The horizontal alignment starts on the existing alignment and starts to deviate to the east with 1.6 m over the first straight. Over the first horizontal curve the alignment reverts back to the existing alignment to cross over the existing rail bridge. The alignment then starts to deviate around the second horizontal curve into the pass with a deviation of 2 m to the north to accommodate the climbing lane. The alignment reverts back to the existing at the crest of the pass.

The scope includes the widening of stormwater structures along the entire project where appropriate. All 450 mm diameter pipes will be replaced. No watercourses are being crossed by the road section under investigation, and it is never closer than 32 m from any wetland.

The entire proposed works are situated inside a Critical Biodiversity Area (category: terrestrial CBA 2 - elsewhere termed "Important CBA") as mapped by the Eastern Cape Biodiversity Conservation Plan 2007. Thus, activity 19 (a/ii/ee) of Listing Notice 3 of the 2010 EIA Regulations is triggered.

Since the proposed activities will constitute a linear development of longer than 300 m, input will also be required from the Provincial Heritage Authority in terms of Section 38 of the National Heritage Resources Act (NHRA). As per the provisions of Section 38(8) of the Act, it is envisaged that the requirements will be met in part through the Basic Assessment.

To provide further context for this Basic Assessment, the road upgrade requires road building material from the surrounding area. It is proposed that material for the construction of the road will be sourced

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

along the N6 from an existing borrow pit at position 31°28'50"S, 26°42'42"E on portion RE/180 of the farm Valschfontein and an existing hard rock quarry at position 31°16'12"S, 26°43'51"E on portion RE/2/103 of the farm Allemans Poort. The locality and site plans of the proposed borrow pit and quarry are included under Appendix A and more detailed design drawings of the proposed activities are included in Appendix C.

The borrow pit is situated directly adjacent to the proposed works. It is an extension of an existing borrow pit. No written documentation has been traced regarding the previous mining activities at this site. The borrow pit extension will have a rectangular shape of approximately 235 x 225 metres and is to be mined for weathered dolerite to a depth of 2 - 5 metres. A total quantity of 100 000 m<sup>3</sup> is needed for subbase and fill material to satisfy the road construction needs. The profile has been designed in such a way that the borrow pit will be self-draining towards the north-east corner. Top soil and overburden will be used for the rehabilitation of the borrow pit. The inclined sections of the side walls, the batter, will have a slope of 1:3. The material will be mined by mechanical means with a frontend loader. No blasting will take place on site.

The rock quarry is situated 20.6 km past the northern end of the proposed road works adjacent to the N6. The existing quarry has an oblong shape of 160 m x 60 m. Access is via a bell-mouth to the north and onto the N6. The quarry, approximately 15 m deep, consist of slightly weathered to unweathered widely jointed dolerite. Material from this quarry was used previously for road construction of the N6. Site investigations have indicated that future quarry extension should proceed in a south-easterly direction. Total reserves are estimated at 90 000 m<sup>3</sup>, enough to satisfy the needs for 30 000 m<sup>3</sup> G1/G2 material, 20 000 m<sup>3</sup> G4 material and 10 000 m<sup>3</sup> of surfacing stone for the road upgrade under investigation. The rock face of the quarry will be approximately 10 m high from which material is broken by means of blasting. A mobile crusher will be brought on site for the grading of the rock into the required dimensions. As indicated in the detailed layout plan provided in the Appendix the crusher, stock pile areas, site office and other facilities will be placed next to the access road off the N6 inside the fenced mining area (9.87 ha). A table with the land budget for the mining area is given in the detailed layout plan. Since the rock reserves exceed the current demand, SANRAL envisages to make future use of this quarry for road maintenance purposes.

Permitting of the materials sources required for the project will have to be undertaken in accordance with the Regulations pertaining to the Minerals and Petroleum Resources Development Act. Specifically, since this is a SANRAL project, the exemptions provisions of Section 106(1) of the Act will apply, and thus no mining license application will be completed. However, use of any materials sources would be subject to the preparation of an Environmental Management Plan compiled in accordance with Regulation 51 of the MPRDA for the hard rock quarry and the borrow pit that are envisaged to be used. The Environmental Management Plan for the mining activity will be submitted to the Department of Mineral Resources.

## 2. FEASIBLE AND REASONABLE ALTERNATIVES

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

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific

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

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

Nearly all proposed construction will occur within the existing road reserve of approximately 32 m width. In order to achieve the desired road geometry for the climbing line on the pass, on the uphill side very small parts (a few 100 m<sup>2</sup>) of private land falling into Gelegenfontein 179, Valschfontein 180 and Penhoekberg 181 will have to be acquired by SANRAL through expropriation. This is in process. An alternative site or route for the road was not considered to be a viable option as it would have a much higher impact. Therefore, a route/site alternative was not assessed for this project.

Likewise, material for the construction of the road will be sourced from an existing borrow pit and an existing hard rock quarry along the N6. Therefore the alternative of opening new sources of material was dismissed in having a much greater impact on the environment.

Only the preferred alternative will be assessed in the Basic Assessment Report as other alternatives - other than the no go option - have been eliminated in the planning phase of this project.

**3. ACTIVITY POSITION**

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

List alternative sites, if applicable.

**Alternative:**

Alternative S1<sup>2</sup> (preferred or only site alternative)

Alternative S2 (if any)

Alternative S3 (if any)

**Latitude (S):**

**Longitude (E):**

0	'	0	'
0	'	0	'
0	'	0	'

**In the case of linear activities:**

**Alternative:**

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

**Latitude (S):**

**Longitude (E):**

31°	32.491'	26°	40.008'
31°	29.173'	26°	42.344'
31°	26.474'	26°	41.545'

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

0	'	0	'
0	'	0	'
0	'	0	'

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

0	'	0	'
0	'	0	'
0	'	0	'

<sup>2</sup> "Alternative S.." refer to site alternatives.

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

**4. PHYSICAL SIZE OF THE ACTIVITY**

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

**Alternative:**

Alternative A1<sup>3</sup> (preferred activity alternative)  
 Alternative A2 (if any)  
 Alternative A3 (if any)  
 or, for linear activities:

**Size of the activity:**

m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

**Length of the activity:**

**Alternative:**

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

14 200 m
m
m

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

**Alternative:**

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

**Size of the site/servitude:**

426 000 m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

**5. SITE ACCESS**

Does ready access to the site exist?

YES x	NO
m	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

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

**6. SITE OR ROUTE PLAN**

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

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;

<sup>3</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers;
  - the 1:100 year flood line (where available or where it is required by DWA);
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.11 the positions from where photographs of the site were taken.

**7. SITE PHOTOGRAPHS**

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

**8. FACILITY ILLUSTRATION**

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

**9. ACTIVITY MOTIVATION**

**9(a) Socio-economic value of the activity**

What is the expected capital value of the activity on completion?	R 14 mill.	
What is the expected yearly income that will be generated by or as a result of the activity?	N/A	
Will the activity contribute to service infrastructure?	YES x	NO
Is the activity a public amenity?	YES x	NO
How many new employment opportunities will be created in the development phase of the activity?	40	
What is the expected value of the employment opportunities during the development phase?	R500000	
What percentage of this will accrue to previously disadvantaged individuals?	80%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	N/A	
What is the expected current value of the employment opportunities during the first 10 years?	N/A	
What percentage of this will accrue to previously disadvantaged individuals?	N/A	

**9(b) Need and desirability of the activity**

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

The need for the road upgrade was identified by SANRAL based on the condition of the road and on road safety

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considerations. The upgrade would bring this section of the N6 up to National Road standard, which is responding to the importance of the road in enabling nation-wide efficient transportation of people and goods. The existing road layers do not contain sufficient material for the upgrade. Borrow pit and quarry will provide the additional needed material for general fill, selected fill, as well as subgrade and subbase for the road.

### NEED:

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

### DESIRABILITY:

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

### BENEFITS:

1.	Will the land use / development have any benefits for society in general?	YES x	NO
2.	Explain: The road upgrade will make for safer and speedier travel.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES x	NO
4.	Explain: Local communities will have the benefit of a better road.		

## 10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline: \_\_\_\_\_ Administering authority: \_\_\_\_\_ Date: \_\_\_\_\_

<p>National Environmental Management Act</p> <p>GNR 546 (19) of 2010 The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre. In Eastern Cape: Outside urban areas, in: Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>GNR 544 (47) of 2010 The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre - (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres – excluding widening or lengthening occurring inside urban areas.</p>	<p>Department of Environmental Affairs</p>	<p>Act 107 of 1998</p>
<p>Minerals and Petroleum Resources Development Act</p>	<p>Department of Mineral Resources</p>	<p>Act 28 of 2002</p>
<p>National Heritage Resources Act</p>	<p>SAHRA</p>	<p>Act 25 of 1999</p>

**11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT**

**11(a) Solid waste management**

Will the activity produce solid construction waste during the construction/initiation phase? 

YES x	NO
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If yes, what estimated quantity will be produced per month? 

10 m <sup>3</sup>
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How will the construction solid waste be disposed of (describe)?

To be used in the rehabilitation of the borrow pit
----------------------------------------------------

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

At the borrow pit or at an approved landfill site
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Will the activity produce solid waste during its operational phase? 

YES	NO x
-----	------

If yes, what estimated quantity will be produced per month? 

m <sup>3</sup>
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How will the solid waste be disposed of (describe)?

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

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

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? 

YES	NO x
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If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? 

YES	NO x
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If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.



**11(b) Liquid effluent**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
	x

If yes, what estimated quantity will be produced per month?

m<sup>3</sup>

Will the activity produce any effluent that will be treated and/or disposed of on site?

Yes	NO
	x

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

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO
	x

If yes, provide the particulars of the facility:

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

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

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**11(c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere?

YES x	NO
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If yes, is it controlled by any legislation of any sphere of government?

YES	NO x
-----	------

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

If no, describe the emissions in terms of type and concentration:

Road construction activities will generate modest amounts of fugitive dust and exhaust emissions from the construction machines. This impact will be temporary and intermittent and is unlikely to exceed legislated levels.
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**11(d) Generation of noise**

Will the activity generate noise?

YES x	NO
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If yes, is it controlled by any legislation of any sphere of government?

YES	NO
-----	----

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

If no, describe the noise in terms of type and level:

Construction machinery (e.g. jackhammer) and construction vehicles (e.g. trucks loaded with stone) will make noise. Such noise will be generated in a discontinuous fashion during daytime only while the road is being built. Noise levels will be restricted to normal road building construction noise. No blasting on the road is envisaged. There are very few noise receptors next to the road as no residential homes are directly situated next to it.
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**12. WATER USE**

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

municipal x	water board	groundwater x	river, stream, dam or lake	other	the activity will not use water
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Some water from existing boreholes on nearby farms may be used. The expected volumes will be <50 k /day.

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

the volume that will be extracted per month:

Does the activity require a water use permit from the Department of Water Affairs?

litres	
YES	NO
	x

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

### 13. ENERGY EFFICIENCY

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

The road construction project has very limited scope for energy efficiency other than to avoid unnecessary travelling by construction vehicles. This will be achieved through well managed construction management and workflow procedures. No electricity will be used for the project.

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

None

## SECTION B: SITE/AREA/PROPERTY DESCRIPTION

### Important notes:

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

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

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

3. Has a specialist been consulted to assist with the completion of this section?

YES	NO
	x

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

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Property description/physical address:

The road upgrade works are situated on the following cadastres zoned Transportation (National Road 6):

Parcel_Num	21 digit key
1/179	C0840000000017900001
3/155	C0840000000015500003
3/180	C0840000000018000003
3/182	C0840000000018200003
3/183	C0840000000018300003
4/180	C0840000000018000004
4/181	C0840000000018100004
4/182	C0840000000018200004
5/180	C0840000000018000005

The road upgrade works traverse the following cadastres zoned Agriculture:

21DigitKey	Parcel_Num	Name
C0840000000018000001	1/180	Valschfontein
C0840000000018300002	2/183	Thomasfontein
C0840000000018100001	RE/1/181	Penhoek
C0840000000015500000	RE/155	Droogfontein
C0840000000017900000	RE/179	Gelegenfontein
C0840000000018000000	RE/180	Valschfontein
C0840000000018200000	RE/182	Hans Donsies Kraal
C0840000000018300000	RE/183	Thomasfontein
C0840000000018000002	RE/2/180	Valschfontein

Borrow pit and hard rock quarry are situated on the following cadastres

21DigitKey	Parcel_Num	Name
C0840000000018000000	RE/180	Valschfontein
C0840000000010300002	RE/2/103	Allemans Poort

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

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In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

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In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

Must a building plan be submitted to the local authority?

YES	NO x
YES	NO x

Locality map:

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

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

**1. GRADIENT OF THE SITE**

Indicate the general gradient of the site.

**Alternative S1:**

Flat	1:50 – 1:20 x	1:20 – 1:15	1:15 – 1:10 x at the pass	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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**Alternative S2 (if any):**

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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**Alternative S3 (if any):**

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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**2. LOCATION IN LANDSCAPE**

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

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

**3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

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

<b>Alternative S1:</b>	<b>Alternative S2</b>	<b>Alternative S3</b>
_____	<b>(if any):</b> _____	<b>(if any):</b> _____

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

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

**4. GROUNDCOVER**

Indicate the types of groundcover present on the site:

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

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup> x	Gardens
Sport field	Cultivated land	Paved surface x	Building or other structure x	Bare soil

All construction work will occur within the road reserve, which is dominated by alien species or by common species with a wide distribution pattern. The original vegetation type on the flat southern parts of the road was Tsomo Grassland (Vulnerable) but this was fully transformed when the road was built. The original vegetation type on the pass itself was Southern Drakensberg Highland Grassveld (Least Threatened), but again this was destroyed during road construction.

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

**5. LAND USE CHARACTER OF SURROUNDING AREA**

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

- 5.1 Natural area x
- 5.2 Low density residential
- 5.3 Medium density residential

5.4 High density residential	
5.5 Informal residential <sup>A</sup>	
5.6 Retail commercial & warehousing	
5.7 Light industrial	
5.8 Medium industrial <sup>AN</sup>	
5.9 Heavy industrial <sup>AN</sup>	
5.10 Power station	
5.11 Office/consulting room	
5.12 Military or police base/station/compound	
5.13 Spoil heap or slimes dam <sup>A</sup>	
5.14 Quarry, sand or borrow pit	x
5.15 Dam or reservoir	
5.16 Hospital/medical centre	
5.17 School	
5.18 Tertiary education facility	
5.19 Church	
5.20 Old age home	
5.21 Sewage treatment plant <sup>A</sup>	
5.22 Train station or shunting yard <sup>N</sup>	
5.23 Railway line <sup>N</sup>	x
5.24 Major road (4 lanes or more) <sup>N</sup>	
5.25 Airport <sup>N</sup>	
5.26 Harbour	
5.27 Sport facilities	
5.28 Golf course	
5.29 Polo fields	
5.30 Filling station <sup>H</sup>	
5.31 Landfill or waste treatment site	
5.32 Plantation	x
5.33 Agriculture	x
5.34 River, stream or wetland	
5.35 Nature conservation area	
5.36 Mountain, koppie or ridge	x
5.37 Museum	
5.38 Historical building	
5.39 Protected Area	
5.40 Graveyard	
5.41 Archaeological site	
5.42 Other land uses (describe)	

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

The crossing of the railway line on the flat section before the Penhoek Pass will not be affected by the road works. Rail crosses the road by means of an existing underpass.

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

If YES, specify and explain:

If YES, specify:

|

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

If YES, specify and explain:

|

If YES, specify:

**6. CULTURAL/HISTORICAL FEATURES**

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site?	YES x	NO
If YES, explain:	Uncertain	
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.	Five archaeological and cultural heritage resources, as defined and protected by the National Heritage Resources Act 1999, were identified at and near the proposed construction site. No palaeontological heritage resources were located.	
Briefly explain the findings of the specialist:	Middle Stone Age stone tools and blades have been located towards the south of the study site a) within the road reserve at Hazelmere on the farm Hans Donsies Kraal, b) next to an internal farm road on the farm Valschfontein and c) at the proposed borrow pit. The heritage resources present at a) and b) can be conserved in situ, while c) will need to be destroyed. Hence the impact of the former two sites is insignificant. The specialist has ranked the artefacts present at site c) of low heritage value. Colonial Period use of the landscape is exemplified by two further sites: d) the historical farmstead of Valsch Fontein 300 m east of the N6 and e) a Colonial Period rock shelter, located approximately 60 m east of the current Penhoek Pass alignment and immediately west of the early pass. Both these cultural heritage resources are situated in proximity to the study site, but not directly affected by the road upgrade. Hence the significance of the impact is insignificant in both cases. Findings of the archaeological specialist study and of the palaeontological specialist study are included in Appendix D.	
Will any building or structure older than 60 years be affected in any way?	YES	NO x
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES x	NO
If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.		

**SECTION C: PUBLIC PARTICIPATION**

**1. ADVERTISEMENT**

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

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

- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
  - (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

## 2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

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

## 3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

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

Advertisements and notices must make provision for all alternatives.



#### 4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

#### 5. COMMENTS AND RESPONSE REPORT

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

#### 6. AUTHORITY PARTICIPATION

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

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

List of authorities informed:

Bongani Mabunda, Department Economic Development & Environmental Affairs of the Eastern Cape Province, Joe Gqabi Regional Office, Aliwal North Patrick Nonjola, Municipal Manager: Maletswai Local Municipality, Aliwal North Nkosini Andries Ncube, Municipal Manager: Inkwanca Local Municipality, Molteno Joseph Jonga; Councillor W1 - Community Services, Inkwanca Local Municipality Nombulelo Yaliwe; Cllr W2 - Special Programmes, Inkwanca Local Municipality Ntsikelelo Cwebi; Cllr W3 - Technical Services, Inkwanca Local Municipality Xoliswa Gloria Mkhubukeli Lufeli; Cllr W4 - Corporate Services, Inkwanca Local Municipality Brenda Ngebulana; Regional Manager: Eastern Cape, Department of Mineral Resources Mariagrazia Galimberti, SAHRA Lizna Fourie; Department of Water Affairs, East London Regional Manager; Department of Economic Development and Environment Affairs; Queenstown
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List of authorities from whom comments have been received:

No comments were received to date.
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#### 7. CONSULTATION WITH OTHER STAKEHOLDERS

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

Proof of any such agreement must be provided, where applicable.

YES	NO
x	

Has any comment been received from stakeholders?

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

Will the road be closed and will traffic be forced to use alternative routes?

Are you aware of the fibre-optic cables that are being installed along the route ?

When will construction commence?

No other comments were received from stakeholders to date.

**SECTION D: IMPACT ASSESSMENT**

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

**1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES**

List the main issues raised by interested and affected parties.

The only issues raised were at the farmers' meeting held on the 8<sup>th</sup> December 2011:  
 Question – Will the road be closed and will traffic be forced to use alternative routes, because some of the farmers have bed and breakfast accommodation that will be affected by such closures?  
 Answer – No it is not envisaged that the road will be closed for extended periods of time except when blasting is scheduled to take place. Stop-go would be the preferred method of traffic accommodation during construction.

Question – Are you aware of the fibre-optic cables that are being installed along the route ?  
 Answer – Yes SANRAL have these plans and will accommodate accordingly.

Question – When will construction commence?  
 Answer – Much of it is dependent on the environmental issues, but at this stage if all goes according to plan then we envisage starting in February 2013.

No issues were raised by I&APs subsequent to the meeting held on the 8<sup>th</sup> December 2011 with the landowners involved.

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

See above

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

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

**ALTERNATIVE 1**

**PLANNING AND DESIGN PHASE**

**Alternative 1 (preferred alternative)**

**Direct impacts:** No impacts were identified

**Indirect impacts:** No impacts were identified

**Cumulative impacts:** No impacts were identified

**Mitigation measures that may reduce or eliminate the potential impacts listed above:**

As no negative environmental impacts are expected to arise during the planning and design phase of this project there are no mitigation measures to consider

## CONSTRUCTION PHASE

### Alternative 1 (preferred alternative)

#### **Direct impacts:**

##### Ecological impact:

The construction site, which is confined to the road reserve, is surrounded on all sides by a Critical Biodiversity Area (category: terrestrial CBA 2 - elsewhere termed "Important CBA") as mapped by the Eastern Cape Biodiversity Conservation Plan 2007. Important CBAs are serving the attainment of biodiversity conservation targets. In systematic conservation planning they are accorded this status because they contain representative samples of biodiversity and threatened species (flora and fauna) where they can persist over the long term. They also contain abiotic features and processes indispensable for biodiversity conservation, such as providing a system of natural pathways (corridors) facilitating the movement of fauna and flora. As regards the biodiversity pattern aspect, the footprint of the proposed road works is too small to make for anything other than a low intensity of the impact as the ecology is only slightly altered if effective mitigation measures as described in the accompanying EMP are implemented.

As regards the biodiversity process aspect, the movement of biota across the corridor is no more influenced by the construction activity than it is by the presence of the existing road, which is to say the impact is present, but is of medium-low negative status.

##### Storm water and erosion impact:

This potential impact is of low negative significance in the flat section south of and before the pass, and no special efforts will be necessary to manage this.

On the mountain side the potential for storm water erosion damage to the existing road and the works under construction definitely exists when there is heavy rain or snow melt is occurring. Unmitigated this potential impact is of medium significance, but can be reduced to low if effective mitigation measures as described in the accompanying EMP are implemented.

##### Socio-economic impact:

The temporary creation of unskilled construction worker jobs has a very low positive impact. If local employment opportunity are maximised this could be raised to a low positive significance.

##### Noise impact:

Construction machinery (e.g. jackhammer) and construction vehicles (e.g. trucks loaded with stone) will make noise. Such noise will be generated in a discontinuous fashion during daytime only while the road is being built. Noise levels will be restricted to normal road building construction noise. No blasting on the road is envisaged. There are very few noise receptors next to the road as no residential homes are directly situated next to it.

Blasting at the hard rock quarry may potentially cause damage to man-made structures. Mitigation of this impact to very low significance will be achieved by contracting a competent person certified by the National Explosives Council and by strict adherence to the Explosives Regulations GN R109 of 2003 and other applicable health and safety provisions. Further, two small labourers cottages are the only structures in the vicinity (>100 m) which are shielded from blasting by being located on the other side of a hill.

##### Air quality impact:

Road construction activities will generate modest amounts of fugitive dust and exhaust emissions from the construction machines. This impact will be temporary and intermittent and is unlikely to exceed legislated levels. Hence its status is low negative.

**Waste management impact:**

A low negative impact would be precipitated by the incorrect disposal of construction waste that could lead to other negative visual impacts and loss of natural habitat. With appropriate mitigation this impact will be reduced to an insignificant level.

**Traffic impact:**

Traffic along the National Route 6 will be negatively affected by the construction. Stop/Go control by means of a traffic signal and/or a signal man on each end will be used to manage traffic, while one lane after the other is upgraded. The negative impact on traffic flow will be of low significance, which can be reduced to very low significance with the introduction of an adaptive traffic management system at the construction site.

**Existing services:**

Damage to existing rail, powerline, or fixed-line telephone services could occur. The crossing of the railway line on the flat section before the Penhoek Pass will not be affected by the road works. Rail crosses the road by means of an existing underpass at km 55.2. The underpass will not be modified by the road works and no interruption of rail traffic is foreseen. Hence this potential impact is insignificant. An overhead powerline crosses the road works at km 60.2 and local telephone lines cross at km 56.5, km 58.7 and km 60.3, respectively. Likewise this potential impact is unlikely to materialise with effective mitigation in place.

**Impacts on palaeontological heritage resources:**

Due to extensive superficial sediment cover and weathering the overall palaeontological sensitivity of the study area is rated as low. The mining of road construction material will take place on dolerite outcrops. Dolerite outcrops within the study area are in themselves of no palaeontological significance since these are high temperature igneous rocks emplaced at depth within the Earth's crust.

**Impacts on archaeological heritage resources**

Five archaeological and cultural heritage resources, as defined and protected by the National Heritage Resources Act 1999, were identified at and near the proposed construction site.

Middle Stone Age stone tools and blades have been located towards the south of the study site a) within the road reserve at Hazelmere on the farm Hans Donsies Kraal, b) next to an internal farm road on the farm Valschfontein and c) at the proposed borrow pit. The heritage resources present at a) and b) can be conserved in situ, while c) will need to be destroyed. Hence the impact of the former two sites is insignificant. The specialist has ranked the artefacts present at site c) of low heritage value.

Colonial Period use of the landscape is exemplified by two further sites: d) the historical farmstead of Valsch Fontein 300 m east of the N6 and e) a Colonial Period rock shelter, located approximately 60 m east of the current Penhoek Pass alignment and immediately west of the early pass. Both these cultural heritage resources are situated in proximity to the study site, but not directly affected by the road upgrade. Hence the significance of the impact is insignificant in both cases.

***Indirect impacts:***

None were identified

***Cumulative impacts:***

None were identified

**Mitigation measures that may reduce or eliminate the potential impacts listed above:**

Adoption and adherence to the Environmental Management Plan provided in Appendix G forms the most effective mitigation of the impacts. In brief, the following mitigation measures apply:

**Mitigation of ecological impacts:**

As the road is surrounded on all sides by a Critical Biodiversity Area, construction activities should be limited to the confines of the road reserve, as much as this is technically feasible. Clearing of vegetation should be kept to a minimum and must be introduced in a phased manner, where rehabilitation is immediately undertaken as soon as a section of road construction is finished. No animals shall be harmed. Fire control should be implemented. Pollution of the surrounding veld by concrete residue, leftover tarmac, oils and other construction related chemical must be prevented through comprehensive a set of comprehensive material safety measures. Due diligence procedures must be adhered to at all times.

**Mitigation of storm water and erosion impact:**

Proper erosion control measures should be taken when the widening of stormwater structures along the entire project is done. Downstream erosion and subsequent undermining of outlet slabs shall be managed through reno mattresses or similar installations.

**Mitigation of socio-economic impact:**

Locally sourced labour and suppliers should be considered during the construction phase.

**Mitigation of noise impact:**

Loud noise-generating construction work must be confined to daylight hours. No noisy construction work should be done on Sundays or public holidays unless necessary for the efficient completion of the works. Permission for such a deviation from standard working hours must be channeled through the Resident Engineer. It should also be ensured that all construction vehicles and machinery used during the construction phase are in good working order, with sufficient muffling and silencing technology as prescribed by law.

All blasting at the hard rock quarry must be undertaken by certified competent personnel only.

**Mitigation of air quality impact:**

On windy and dry days dust must be controlled by manually sprinkling dusty areas with water, or water spray vehicles, and by driving slowly.

**Mitigation of waste management impact:**

A well-organized site must be kept to ensure minimal negative visual impact. Construction rubble and waste must not be allowed to be dumped permanently at the site, but must be removed by the contractor. The contractor must provide adequate waste disposal and sanitation facilities. Portable toilets must be provided and adequate facilities for the cooking needs of the construction workers should be provided.

**Mitigation of traffic impact:**

The movement of trucks to and from the construction site must be well coordinated by the site manager at all times, so as to cause the least disruption to the users of the road. Large trucks and other heavy-duty machinery must not block traffic on any one of the lanes currently in use and may not be left unattended. A demarcated parking and storage area at or close to the site must be provided by the contractor for the storage of machinery and trucks as necessary.

Stop/Go control by means of a traffic signal and/or a signal man on each end will be used to manage traffic. Proper traffic signs must be erected to warn motorists of potential danger.

**Mitigation of the disruption of damage to existing services:**

Existing service infrastructure, e.g. telephone lines, etc, should be clearly demarcated before work commences to avoid disruptions of services to the surrounding agricultural community. If services need to be shut down temporarily, an official with the necessary expertise should supervise this to ensure that infrastructure services are reinstated within an acceptable timeframe.

Mitigation of archaeological and palaeontological heritage impacts

As described in the palaeontological specialist report no further palaeontological heritage studies or mitigation are recommended for this project, pending the discovery of significant fossil material during construction.

As detailed in the archaeological specialist report, the following mitigation measures apply:

- a) and b) to be conserved in situ, including clear visual demarcation (danger tape or netting) along the road reserve fence as well as temporary signage indicating the area as a 'No-Entry: Heritage Archaeological Sensitive Area'
- c) to be destroyed under permit
- d) and e) to be conserved by implication under the NHRA 1999.

Should any other heritage resources be discovered during the road construction and its associated mining activities, site work should immediately cease and the findings should be reported to SAHRA for their action.

**OPERATIONAL PHASE**

**Alternative 1 (preferred alternative)**

**Direct impacts:**

Ecological impact:

Roads impact on an adjacent Critical Biodiversity Area in many ways. On the positive side they confine vehicle traffic to a predetermined route preventing broadscale damage to the ground. A road is almost always safer and more efficient to travel on than having no road at all, which minimises exhaust emissions and pollution from hydrocarbon spills as a result of accidents. The negative impacts of the presence of a National Route through a CBA are at least fourfold: vehicles kill and tyres squash things while crossing the road, especially so when the speed limit is set at a high 80 or 120 km/h and traffic is dense. Birds, reptiles and amphibians are the most common victims of such fatal encounters. Roads are the means by which invasive aliens penetrate into natural veld when their propagules (seeds, eggs etc.) drop off passing vehicles during transit. Roads introduce harmful hydrocarbon pollutants and noxious gases into an adjacent CBA in a much more direct way than airborne dispersion. This may compromise the survival chances of sensitive organisms. Fourthly, roads are conduits of development in terms of expanded settlements, commerce and industry, which are undesirable and strongly discouraged in a CBA according to established national policy.

In balance, the overall impact of the N6 cutting through the CBA is clearly negative and of low-medium significance. However, given the improvements to road safety, storm water management and traffic congestion that will be achieved by upgrading the N6 in this section are unlikely to exacerbate the impacts that exist already. It is the view of the EAP that effective mitigation measures to reduce the existing suite of impacts are either impractical or too costly to implement to be of practical relevance. Therefore the impacts significance remains the same whether the upgrade takes place or not.

Storm water and erosion impact:

The potential for low erosion impacts caused by storm water exists if periodic road maintenance by the responsible authority is neglected. With scheduled maintenance in place, this potential impact can attain a very low significance.

Traffic impact:

The proposed upgrade would improve safety and increase the transportation capacity of the road. This impact is rated as medium positive. No additional mitigation measures are needed.

**Indirect impacts:**

None were identified

**Cumulative impacts:**

None were identified

**Mitigation measures that may reduce or eliminate the potential impacts listed above:**

Road maintenance should be undertaken at regular intervals according to a schedule to limit the potential for erosion impacts caused by storm water runoff to occur..

For the positive impacts expected to occur during the operational phase there are no additional mitigating measures necessary.

**DECOMMISSIONING AND CLOSURE PHASE**

**Alternative 1 (preferred alternative)**

**Direct impacts:** This is not applicable as National Roads are never decommissioned.

**Indirect impacts:** This is not applicable as National Roads are never decommissioned.

**Cumulative impacts:** This is not applicable as National Roads are never decommissioned.

**Mitigation measures that may reduce or eliminate the potential impacts listed above:**

There are no mitigation measures to consider

**NO-GO ALTERNATIVE**

**PLANNING AND DESIGN PHASE**

**No-Go Alternative**

**Direct impacts:** If this road upgrade is not undertaken there will be no planning phase to assess

**Indirect impacts:** None were identified

**Cumulative impacts:** None were identified

**Mitigation measures that may reduce or eliminate the potential impacts listed above:**

There are no mitigation measures to consider

**CONSTRUCTION PHASE**

**No-Go Alternative**

**Direct impacts:**  
If this road upgrade is not undertaken there will be no construction phase to assess

**Indirect impacts:**  
None were identified

**Cumulative impacts:**  
None were identified



**Mitigation measures that may reduce or eliminate the potential impacts listed above:**

There are no mitigation measures to consider

**OPERATIONAL PHASE**

**No-Go Alternative**

**Direct impacts:**

**Ecological impact**

The overall impact of the N6 cutting through the CBA is negative and of low-medium significance for the functioning of the surrounding Critical Biodiversity Area, even when the situation stays as it is, i.e. the road is not upgraded.

**Storm water and erosion impact:**

In case the road is not upgraded, the potential for low erosion impacts caused by storm water continue to exist if road maintenance by the responsible authority is neglected. With scheduled maintenance in place, this potential impact can attain a very low magnitude.

**Traffic impact:**

If this road upgrade is not undertaken it is definite that the desired standards for National Routes are not met. The road will not meet the transport capacity and motorists continue to be delayed by the lack of passing opportunities on the Penhoek Pass section. The safety gains that would be made by an upgraded road will not be achieved.

**Indirect impacts:**

None

**Cumulative impacts:**

None

**Mitigation measures that may reduce or eliminate the potential impacts listed above:**

The road upgrade should go ahead.

**DECOMMISSIONING AND CLOSURE PHASE**

**No-Go Alternative**

**Direct impacts:**

If this road upgrade is not undertaken there will be nothing to assess.

**Indirect impacts:**

None

**Cumulative impacts:**

None

**Mitigation measures that may reduce or eliminate the potential impacts listed above:**

If this road upgrade is not undertaken there will be no decommissioning and closure mitigation measures to consider.

### 3. ENVIRONMENTAL IMPACT STATEMENT

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

#### Method and criteria for the rating of impacts

Impacts were assessed in terms of the criteria presented in the table below.

#### Criteria used to determine the significance ratings

Criteria	Description
Spatial extent	The extent of impact describes the region in which the impact will be experienced: <ul style="list-style-type: none"> <li>• Site specific</li> <li>• Local (&lt; 2km from site)</li> <li>• Regional (within 30km of the site)</li> <li>• National</li> </ul>
Intensity or Magnitude of impact	The intensity describes the magnitude or size of the impact: <ul style="list-style-type: none"> <li>• High: Natural and/or social functions and/or processes are severely altered</li> <li>• Medium: Natural and/or social functions and/or processes are notably altered</li> <li>• Low: Natural and/or social functions and/or processes are negligibly altered</li> </ul>
Duration	The duration is the time frame in which the impact will be experienced: <ul style="list-style-type: none"> <li>• Temporary (&lt;1 year)</li> <li>• Short term (1 to 6 years)</li> <li>• Medium term (6 to 15 years)</li> <li>• Long term (15 - 30 years)</li> <li>• Permanent</li> </ul>
Probability	The probability of the impact occurring: <ul style="list-style-type: none"> <li>• Improbable (little or no chance of occurring)</li> <li>• Probable (&lt; 50% chance of occurring)</li> <li>• Highly probable (50% - 90% chance of occurring)</li> <li>• Definite (&gt;90% chance of occurring)</li> </ul>

The impacts are assessed (rated) in terms of their significance (high, medium, low), status and confidence through a synthesis of the criteria given in the table above. The rating system is outlined in the table below.

#### Method for Rating of Impacts

Class	Description
Significance	<ul style="list-style-type: none"> <li>• High: impacts of high magnitude locally for longer than 6 years and/or regionally and beyond. The impact results in major alterations to the environment even if effective mitigation measures are implemented and will have an influence on decision-making.</li> <li>• Medium: impacts of moderate magnitude locally to regionally in the short term. The impact results in medium alterations to the environment and can be reduced or eliminated by the implementation of effective mitigation measures.</li> <li>• Low to very low: impacts will be localised and temporary. Impacts result in minor</li> </ul>

Class	Description
	alterations to the environment and can easily be alleviated by the implementation of effective mitigation measures. <ul style="list-style-type: none"> <li>No impact: a potential concern or impact, which, upon evaluation, is found to have no significant impact at all.</li> </ul>
Status	The status is the overall effect on the environment: <ul style="list-style-type: none"> <li>Positive - a 'benefit'</li> <li>Negative - a 'cost'</li> <li>Neutral</li> </ul>
Confidence	The degree of confidence in predictions based on available information and specialist knowledge: <ul style="list-style-type: none"> <li>Low</li> <li>Medium</li> <li>High</li> </ul>

## Impact Assessment

### ALTERNATIVE 1

#### Alternative 1 (preferred alternative)

##### Planning and design phase

No undue negative environmental impacts are expected to arise during the planning and design phase of the project. This prediction is made with high confidence. Hence no rating table is provided.

#### Alternative 1 (preferred alternative)

##### Construction phase

During construction neighbours and road users potentially will be affected by noise, dust, traffic congestion, damage to service infrastructure and other construction related nuisances. These negative impacts will be mostly site specific and temporary, and will have a low magnitude. With mitigation in place the environmental significance is low or very low. This prediction is made with high confidence. Specific impacts during construction are rated in the table below, assuming effective mitigation is implemented.

**Summary rating table of potential impacts identified for the construction phase**

Impact	Extent	Duration	Intensity	Probability	Significance	Status	Confidence
Ecology	Local	Temporary	Low	Probable	Medium-low	Negative	High
Erosion, storm water	Site	Temporary	Low	Highly probable	Low	Negative	High
Socio-economic	Regional	Temporary	Low	Probable	Low	Positive	Medium
Noise	Local	Temporary	Low	Highly probable	Low/very low	Negative	High
Air quality	Local	Temporary	Low	Highly probable	Low	Negative	High
Waste	Local	Temporary	Low	Improbable	Insignificant	Negative	High
Traffic	Regional	Temporary	Low	Highly probable	Very low	Negative	High
Existing services	Local	Temporary	Medium	Improbable	Low	Negative	High
Archaeological resources	Local	Temporary	Low	Probable	Low	Negative	High

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Cultural heritage resources	Local	Temporary	Low	Improbable	Insignificant	Negative	High
Palaeontological resources	Local	Temporary	Low	Improbable	Insignificant	Negative	High

### Alternative 1 (preferred alternative)

#### Operational phase

Positive impacts during the operational phase include an increase in the transportation capacity and safety of the roads. The road upgrade will also lead to improved management of stormwater by means of the associated infrastructure improvements that have been proposed. With mitigation in place the medium to low negative environmental impact on the surrounding Critical Biodiversity Area will remain unchanged from the pre-construction situation. This prediction is made with high confidence. Specific impacts during operation are rated in the table below, assuming effective mitigation is implemented..

#### Summary rating table of potential impacts identified for the operational phase

Impact	Extent	Duration	Intensity	Probability	Significance	Status	Confidence
Ecology	Local	Permanent	Low	High	Medium-low	Negative	High
Storm water and erosion	Local	Long term	Low	High	Low	Positive	High
Traffic	Regional	Long term	Medium	High	Medium	Positive	High

### Alternative 1 (preferred alternative)

#### Decommissioning and closure phase

The National Route 6 will not be closed in the foreseeable future. Hence no impacts for this phase need to be rated and no rating table is provided.

### NO-GO ALTERNATIVE (compulsory)

#### No-Go Alternative

##### Planning and design phase

No undue negative environmental impacts are expected to arise during the planning and design phase of the do nothing option. This prediction is made with high confidence. Hence no rating table is provided.

#### No-Go Alternative

##### Construction phase

No undue negative environmental impacts are expected to arise during the planning and design phase of the do nothing option. This prediction is made with high confidence. Hence no rating table is provided.

#### No-Go Alternative

##### Operational phase

The No-Go alternative is not regarded as a viable option as the road upgrade is well motivated for in terms of National Route standards that need to be achieved for this section. Moreover, the road will become much safer to travel on if the upgrade is made. Impacts on the ecology are likely to remain unchanged whether the road is upgraded or not.

Even though the environmental significance will be low in respect of the ecology, the impact on traffic and erosion management structures will be appreciable. This prediction is made with high confidence. Specific

impacts of the do nothing option are rated in the table below..

**Summary rating table of potential impacts if the road upgrade does not go ahead (NO-GO alternative)**

Impact	Extent	Duration	Intensity	Probability	Significance	Status	Confidence
Ecology	Local	Long-term	Low	Probable	Low	Negative	High
Storm water and erosion	Site	Long-term	Low	Probable	Medium	Negative	High
Traffic	Regional	Long-term	Medium	Definite	Medium	Negative	High

**No-Go Alternative**

**Decommissioning and closure phase**

This part is not applicable, hence no rating table is provided.

**SECTION E. RECOMMENDATION OF PRACTITIONER**

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

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

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

Based on the overall low environmental impact it is recommended that this activity receives authorisation. Best management and construction practices must be implemented, by the contractor, from the onset of road construction to ensure that disturbances to the neighbouring community, to the surrounding Critical Biodiversity Area and to travellers using the N6 are kept to a minimum. The environmental management plan and other conditions of environmental authorisation must be adhered to.

Is an EMPr attached?

YES x	NO
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The EMPr must be attached as Appendix F.

**SECTION F: APPENDIXES**

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information