



BASIC ASSESSMENT REPORT

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	(For official use only)
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Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2010.

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 are 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 or **black out** the boxes that are not 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.

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SECTION A: ACTIVITY INFORMATION

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

YES	
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If YES, please complete form XX 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:

The proposed Establishment of a Business 1 Complex on Erf 5041 (Portion of Erf 1) at Kuruman, Northern Cape province. The proposed development will entail the following (See Figure 1 for a copy of the proposed Layout Plan):

- i. Casino :2 500 m²
- ii. Hotel :2 800 m²
- iii. Conference Facilities :2 000 m²
- iv. Entertainment :2 000 m²
- v. Water world etc. :2 800 m²

The area falls within the Ga-Segonyana Local Municipality and the John Taolo Gaetsewe District Municipality. The area falls within the urban edge of Kuruman and has been earmarked by the Municipality for development.

1.1 WATER SUPPLY

Currently there is insufficient water storage capacity available for all existing developments and an approximate deficit of 5.5 MI at present exists in the Kuruman area.

The municipality is in the process of planning and constructing a new bulk storage reservoir at Bankhara-Bodulong with a trunk main to Kuruman. This reservoir shall have sufficient storage for current and future developments up to 2030. The estimated project completion date, is mid-2013, however this date will have to be confirmed with the Local Municipality.

The nearest connection point to the municipal water supply is ±3 000m east of the proposed development. The recommended connection point is the existing DN 500mm pipeline running along Dolomite Street.

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It is proposed that a DN 250 mm pipe ($\pm 3\ 000$ m long) should be installed for the Casino and the future surrounding developments prior to the commencement of the construction of the Casino.

1.2 SEWAGE DISPOSAL

Due to the topography of the area it would be possible for sewerage effluent of the proposed new development to drain under gravity to the existing municipal sewerage network.

The construction of a DN 150 mm outfall sewer from the proposed new development to the existing municipal sewerage network is therefore envisaged.

Analysis indicates that the proposed connection point has sufficient capacity to accommodate sewage emanating from the proposed development. Sewers further downstream will however start to experience capacity limitations.

Allowance was made for the above mentioned outfall sewer, as well as downstream upgrading in the Kuruman Bulk Infrastructure Master Plan.

Sewage emanating from the proposed development will gravitate to the Barnard Street Pump Station from where it will be pumped to the Kuruman Waste Water Treatment Works (WWTW).

The Sanitation Master Plan indicates that during stage1, the Barnard Street Pump Station will be running below capacity and can thus accommodate the necessary development.

However, this capacity is dependent on the following conditions:

- The regional WWTW to be commissioned.
- A trunk sewer through Kuruman North to be constructed
- All three Ds Van Jaarsveld Street Pump Stations, as well as Wrenchville Pump Stations no longer pump towards Barnard Street Pump Station, but sewage flowing into these pump stations gravitates into the above mentioned Trunk Sewer.
- Mothibistad's sewer infrastructure is connected onto the above Trunk Sewer.

Should the above mentioned infrastructure not be provided and/or modified, another

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option available is that, the discharge capacity of the Barnard Street pump station can be increased by means of certain mechanical changes to the pumps.

Although the Kuruman WWTW has a maximum capacity of 4.0MI/day it is operating at 3.7MI/day and therefore can accommodate the proposed development.

The WWTW capacity has the same pre-conditions as mentioned before. Should they however not be met, the treatment requirements at the Kuruman WWTW will increase up to 3.9 MI/day, but will still be able to accommodate the proposed development.

1.3 ELECTRICAL SUPPLY

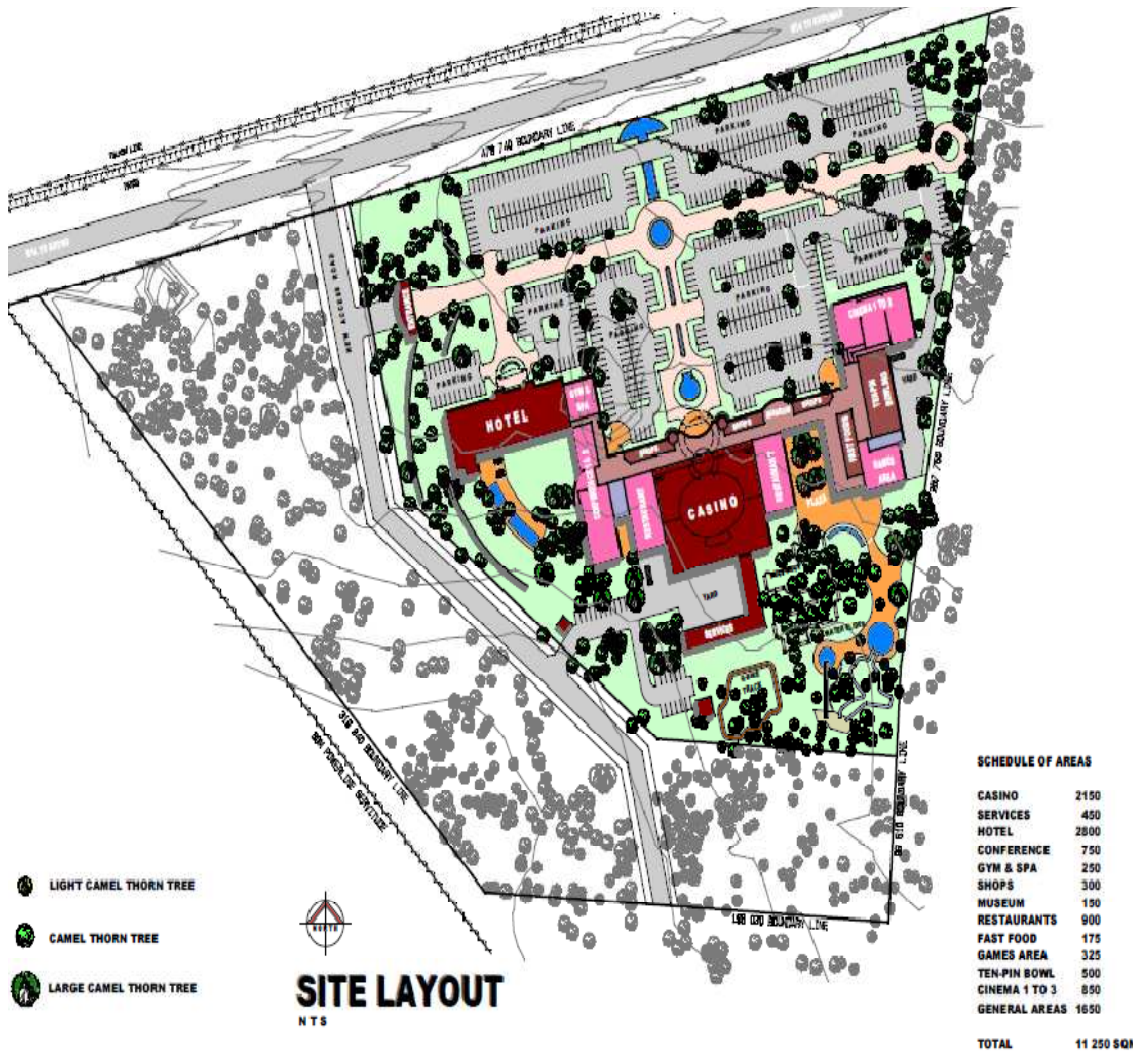
A number of options were investigated for the electrical supply of the proposed development. The following option is the preferred option;

Construct a new overhead supply line from Moffat Substation.

Moffat substation is the main Substation of Kuruman which is responsible for supplying all of Kuruman with electricity. Moffat substation is currently almost fully loaded which implies that no further development in Kuruman is possible. In the near future a project where a second substation is going to be constructed at the North Eastern side of Kuruman making an additional 7MVA available on Moffat Substation.

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Figure 1 Layout Plan



The developers planning a Mall on the Kathu road from Kuruman has claimed 4MVA of the 7MV and it was brought to the attention of relevant parties that the casino development will need the remaining 3MVA.

In order for the casino development to utilize the 3MVA from Moffat substation a new electrical overhead line must be constructed from the substation to the

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boundary of the casino development stand, (4km).

This option will be able to provide the necessary electricity to the new casino development.

1.4 TRAFFIC

- According to the traffic impact study, the proposed development is expected to generate the following additional traffic volumes during the PM peak hour:
 - 234 veh/h entering the development
 - 223 veh/h exiting the development
- The analysis of the combined 5-year growth of existing traffic, plus the generated traffic, loaded onto the adjacent N14 road network, showed that excellent Levels of Service will prevail, with no delays to the N14 through traffic and minimal delays to the development-generated traffic.
- A standard rural non-signalised intersection with an embayed right turn slot will satisfactorily handle the traffic flows in a safe and controlled manner.
- The speed limit along the N14 national route adjacent to the development is too high at 120 km/h and it should be reduced to 80 km/h.

Taxi lay-bys should be provided in both directions of travel on N14 adjacent to the access intersection.

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

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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.

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, operational or other(provide details of "other")	Description
1	<p>Alternative 1: Proposal: This will entail an activity alternative.</p>	<p>The preferred alternative entails the proposed Establishment of a Business 1 Complex on Erf 5041 (Portion of Erf 1) at Kuruman, Northern Cape province. The proposed development will entail the following (See Figure 1 for a copy of the proposed Layout Plan):</p> <ul style="list-style-type: none"> i. Casino :2 500 m² ii. Hotel :2 800 m² iii. Conference Facilities :2 000 m² iv. Entertainment :2 000 m² v. Water world etc. :2 800 m²
2	<p>Alternative 2: This will entail an activity alternative.</p>	<p>Alternative 2 will entail the Establishment of a steel factory on Erf 5041 (Portion of Erf 1) at Kuruman, Northern Cape province.</p> <p>This will not be the preferred alternative due to the fact that the area is too close to residential areas for this type of development. This type of development will also not be able to accommodate some of the larger <i>Acacia erioloba</i> and <i>Acacia heamatoxylon</i> trees found on site. Another problem will be that the available water and electrical supply in the area will not be sufficient for this type of development and will need additional electricity for the factory.</p> <p>Air and noise pollution will also have to be considered.</p> <p>Coal, which will be needed in the smelting process, is also not available in the area.</p> <p>An additional piece of land will have to be found for the waste material generated in the manufacturing process.</p>
3	<p>No-Go Alternative:</p>	<p>This Alternative will entail that the <i>status quo</i> will</p>

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		prevail. This is not the preferred option as the applicant has identified a need for this type of development in the area. The applicant has also secured a gambling license, should the development not take place at this location, the applicant will take his license somewhere else and the huge capital investment and job opportunities will be lost for the Kuruman area.
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Paragraphs 3 – 13 below should be completed for each alternative.

3. ACTIVITY POSITION

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

List alternative sites if applicable.

Latitude (S):

Longitude (E):

Alternative:

Alternative S1 ¹ (preferred or only site alternative)	27 ⁰	27'20,92"	23 ⁰	25'32,67"
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For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

4. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:

Size of the activity:

Alternative A1 ² (preferred activity alternative)	50 000 m ²
Alternative A2 (if any)	100 000m ²

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

¹ "Alternative S.." refer to site alternatives.

² "Alternative A.." refer to activity, process, technology or other alternatives.

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Alternative:

Size of the site/servitude:

Alternative A1 (preferred activity alternative)

100 000m²

Alternative A2 (if any)

100 000m²

5. SITE ACCESS

Does ready access to the site exist?

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

m

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;
- 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);
- 6.9 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
- 6.10 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.

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9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

- What is the expected capital value of the activity on completion?
- What is the expected yearly income that will be generated by or as a result of the activity?
- Will the activity contribute to service infrastructure?
- Is the activity a public amenity?
- How many new employment opportunities will be created in the development phase of the activity?
- What is the expected value of the employment opportunities during the development phase?
- What percentage of this will accrue to previously disadvantaged individuals?
- How many permanent new employment opportunities will be created during the operational phase of the activity?
- What is the expected current value of the employment opportunities during the first 10 years?
- What percentage of this will accrue to previously disadvantaged individuals?

R166mil
R92 mil
NO
NO
R22,5 mil
60 %
150
R500mil
50%

9(b) Need and desirability of the activity

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

The National Gambling Act (NGA) provides for three casinos for the Northern Cape Province. In allocating the licenses The Northern Cape Gambling and Racing Board provided for 100km exclusivity for each of the three casinos. Two licenses have been issued and one remains unallocated. Kuruman has been identified as a possible location for the third and final Northern Cape license. Kuruman has a population estimated at 76100 people. A contribution from tourism is also considered in estimating the casinos gross gambling ratio.

Urban casinos generally attract customers that reside or work in close proximity to the casino. Sun International takes a radius of 100km in establishing the catchment area. A 75 km radius includes residents from Kuruman itself as well as the surrounding towns of Katu, Hay and Postmasburg.

Disposable income is derived from the SA Reserve Bank estimate of disposable income reported in their quarterly bulletins. Access to Econometric's Master Reda analysis tools, provides detail on the actual and forecast disposable income data for South African Economy, at national, provincial and statistical region level. They have estimated the disposable income in the catchment area of the proposed Kuruman Casino at R 4,4289 mil (@ 2006 terms.

By dividing the actual gross gambling ratio (GGR) by the Econometric's disposable income in the catchment area around each casino, Sun International was able to determine the actual; propensity to gamble for each casino during 2005. This has led to a figure of 1,28% for the Flamingo casino in Kimberley and 0,7% for the Desert Palace in Upington. A similar figure as the one for Kimberley was derived by Sun International for Kuruman.

According to these figures the GGR for Kuruman in 2006 could have reached R53,1 million out of its own catchment area, and R5,3 Million from tourism .

Indicate any benefits that the activity will have for society in general:

.The casino complex will provide for recreation both for people legally entitled to use the facilities, but will also provide for youngsters in the entertainment and water world complexes.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

After all the commitments are met there will still be a considerable amount of money available to pay for the services of the workers engaged at the Casino Complex. This would be very beneficial to the people who reside in the area. It is estimated that at least 50% of the employees will come from previously disadvantaged communities, who will then share in the economic injection created by the development.

DESIRABILITY:

1.	Does the proposed land use / development fit the surrounding area?	YES	
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES	
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	

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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	
6.	Will the proposed land use / development set a precedent?		NO
7.	Will any person's rights be affected by the proposed land use / development?		NO
8.	Will the proposed land use / development compromise the "urban edge"?		NO
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		
	(Q 5) The activity will change the sense of place from an extensively grazed land to that of a casino complex. To achieve this change certain trees on the present site will be cut down, while the parking spaces as well as the building complex will change the veld into a built up area.		

BENEFITS:			
1.	Will the land use / development have any benefits for society in general?	YES	
2.	Explain: The activity will provide the inhabitants of Kuruman as well as the surrounding towns with a Casino and recreation complex. The Casino is aimed at persons legally permitted to use the facility, while the recreational complex and waterworld is specifically aimed at the youth.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES	
4.	Explain: The activity will further more provide job opportunities both during the construction phase and specifically during its operational phase. This will benefit the people in the area where there is at present a significant amount of people that are unemployed.		

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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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:
Government notice R544 Listing Notice 1, Activity number 16 (b)	Northern Cape Province, Department of Environment and nature Conservation	18 June, 2010
The Constitution of the Republic of South Africa Bill of Rights Act 108 Section 24	S A Government	1996
Environmental Conservation Act - Act 73	S A Government	1989
National Environmental Act – Act 107	S A Government	1998
National Water Act – Act 36	S A Government	1998
Conservation of Agricultural Resources Act – Act 43	S A Government	1983
Occupational Health and Safety Act – Act 85	S A Government	1993
National Environmental Waste Act - 59	S A Government	2008
Water Services Act - Act 108	S A Government	1997
The National Gambling Act- Act 7	S.A. Government	2004
National Forests Act, Act 84	S.A. Government	1998
National Environmental Management: Biodiversity Act - Act 10	S.A. Government	2004

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

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

YES

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

20m³

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

Solid construction waste will where ever possible be reused on site as fill material, while any excess waste will be transported away from the site.

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

The solid waste disposal site of Kuruman will be used as the dumping site for the waste

Will the activity produce solid waste during its operational phase?

YES

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

50m³

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

The solid waste will be transported away from the site in vehicles designed for the transport of the waste.

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

The waste will be disposed of at the Kuruman solid waste disposal sit

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

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

NO

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

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

NO

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

11(b) Liquid effluent

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

NO

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

50m³

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

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.

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

NO

If yes, provide the particulars of the facility:

Facility name:	
Contact person:	
Postal address:	
Postal code:	

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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?

	NO
	NO

If yes, is it controlled by any legislation of any sphere of government?

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:

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11(d) Generation of noise

Will the activity generate noise?

YES	
	NO

If yes, is it controlled by any legislation of any sphere of government?

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:

The noise will be within acceptable levels and will be created by the traffic to and from the complex as well as noise associated with young people using recreational facilities.
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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)

<input checked="" type="checkbox"/> municipal	<input type="checkbox"/> water board	<input type="checkbox"/> groundwater	<input type="checkbox"/> river, stream, dam or lake	<input type="checkbox"/> other	<input type="checkbox"/> the activity will not use water
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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:

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

	NO
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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 complex will use energy efficient light systems.
--

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

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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	
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If YES, please complete form XX for each specialist thus appointed:
All specialist reports must be contained in Appendix D.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

Alternative S1:

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

- 4.1 Natural veld – good condition^E
- 4.2 Natural veld – scattered aliens^E
- 4.3 Natural veld with heavy alien infestation^E
- 4.4 Veld dominated by alien species^E
- 4.5 Gardens
- 4.6 Sport field
- 4.7 Cultivated land
- 4.8 Paved surface
- 4.9 Building or other structure
- 4.10 Bare soil

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

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

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
- 5.2 Low density residential
- 5.3 Medium density residential
- 5.4 High density residential
- 5.5 Informal residential^A
- 5.6 Retail commercial & warehousing
- 5.7 Light industrial
- 5.8 Medium industrial^{AN}
- 5.9 Heavy industrial^{AN}
- 5.10 Power station
- 5.11 Office/consulting room

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- 5.12 Military or police base/station/compound
- 5.13 Spoil heap or slimes dam^A
- 5.14 Quarry, sand or borrow pit
- 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^A
- 5.22 Train station or shunting yard^N
- 5.23 Railway line^N
- 5.24 Major road (4 lanes or more)^N
- 5.25 Airport^N
- 5.26 Harbour
- 5.27 Sport facilities
- 5.28 Golf course
- 5.29 Polo fields
- 5.30 Filling station^H
- 5.31 Landfill or waste treatment site
- 5.32 Plantation
- 5.33 Agriculture
- 5.34 River, stream or wetland
- 5.35 Nature conservation area
- 5.36 Mountain, koppie or ridge
- 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 this impact will / be impacted upon by the proposed activity.

If YES, specify and explain:	
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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:	
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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:	
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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 paleontological sites, on or close (within 20m) to the site?		NO
If YES, explain:		
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.		
Briefly explain the findings of the specialist:		
Will any building or structure older than 60 years be affected in any way?		NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?		NO
If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.		

BASIC ASSESSMENT REPORT

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.

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.

BASIC ASSESSMENT REPORT

6. AUTHORITY PARTICIPATION

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. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

List of authorities informed:

The Municipal Manager, Ga-Segonyana Local Municipality The Municipal Manager John Taolo Gaetswe District Municipality The Chief Director, Dept. Water Affairs, Kimberley The Manager Eskom Northern Cape, Kimberley The Manager, South African National Roads Authority, Pretoria The Councilor E. Modise, Ga Segonyana Local Municipality Ms. J. Mans – Department: Agriculture, forestry and fisheries
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List of authorities from whom comments have been received:

Ms. J. Mans – Department: Agriculture, forestry and fisheries

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 sub regulation to the extent and in the manner as may be agreed to by the competent authority.

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders? YES NO

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

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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.

None

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):

None

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.

The potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase: ***

Alternative A1 (preferred alternative)

BASIC ASSESSMENT REPORT

Direct impacts:

- ❑ Low gradients may cause problems especially during high rainfall events.
- ❑ Poorly designed storm water dispersal structures may cause flooding.
- ❑ Un-rehabilitated disturbed surfaces can lead to erosion.
- ❑ Foreign plant species are likely to invade disturbed areas.
- ❑ Poorly planned ablution facilities may cause pollution of surface and underground water.
- ❑ The proposed project can impact on the soil, underground water and/or geology of the area.
- ❑ The vegetation of the area will be removed in order to construct the proposed development.
- ❑ *Acacia erioloba* and *Acacia heamatoxylon* trees are found on site. These trees are protected in terms of the National Forests Act (Act 84 of 1998), and a license is required for its removal.
- ❑ Habitats will be disturbed.

Indirect impacts:

- ❑ Dust generation from the proposed development could impact on the surrounding area.
- ❑ Spills of lubricants / oils can take place on bare soil.
- ❑ Waste materials such as glass, plastic, metal or paper, present a possible pollution hazard.
- ❑ Enhancement of the social well-being of the local communities.
- ❑ The requirements of the Occupational Health and Safety Act might not be abided by.
- ❑ Non-compliance to the relevant legislation may cause social and environmental problems.
- ❑ Construction rubble causes environmental degradation.
- ❑ Potential hazardous construction materials may spill into the environment.
- ❑ The project will boost the local and regional economy.
- ❑ New jobs will be created.
- ❑ Local skills development will take place.

Cumulative impacts:

The following cumulative impacts may result from the planned development.

- Solid waste: The proposed development will add more solid waste into the existing waste stream of the Ga-Segonyana Local Municipality.
- Sewage: The proposed development will add more sewage into the receiving environment.
- Water supply: The proposed development will add more pressure on the water supply of the town.
- Electricity Supply: The proposed development will add more

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- pressure on the supply of electricity of the town.
- Traffic: The proposed development will result in an increase in traffic in the immediate surroundings of the proposed development.
 - Broadened tax base: The proposed development will generate more income for the Ga-Segonyana Local Municipality.
 - Employment: The proposed development will lessen the unemployment rate under the jurisdiction of the Ga-Segonyana Local Municipality.

Alternative A2

Direct impacts:

- ❑ Low gradients may cause problems especially during high rainfall events.
- ❑ Poorly designed storm water dispersal structures may cause flooding.
- ❑ Un-rehabilitated disturbed surfaces can lead to erosion.
- ❑ Foreign plant species are likely to invade disturbed areas.
- ❑ Poorly planned ablution facilities may cause pollution of surface and underground water.
- ❑ The proposed project can impact on the soil, underground water and/or geology of the area.
- ❑ The vegetation of the area will be removed in order to construct the proposed development.
- ❑ Habitats will be disturbed.
- ❑ The Steel Factory will cause air- and noise pollution.

Indirect impacts:

- ❑ Dust generation from the proposed development could impact on the surrounding area.
- ❑ Spills of lubricants/oils can take place on bare soil.
- ❑ Waste materials such as glass, plastic, metal or paper, present a possible pollution hazard.
- ❑ Enhancement of the social well-being of the local communities.
- ❑ The requirements of the Occupational Health and Safety Act might not be abided by.
- ❑ Non-compliance to the relevant legislation might cause social and environmental problems.
- ❑ Construction rubble causes environmental degradation.
- ❑ Potential hazardous construction materials might spill into the environment.
- ❑ The project will boost the local and regional economy.
- ❑ New jobs will be created.
- ❑ Local skills development will take place.
- ❑ The increased noise and air pollution can have a negative effect on commercial and residential developments in the area.
- ❑ An area for a waste dump will have to be found.

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- A plan will have to be devised in order to provide the necessary coal for the plant.

Cumulative impacts:

The following cumulative impacts may result from the planned development.

- Solid waste: The proposed development will add more solid waste into the existing waste stream of the Ga-Segonyana Local Municipality.
- Sewage: The proposed development will add more sewage into the receiving environment.
- Water supply: The proposed development will add more pressure on the water supply of the town.
- Electricity Supply: The proposed development will add more pressure on the supply of electricity of the town.
- Traffic: The proposed development will result in an increase in traffic in the immediate surroundings of the proposed development.
- Broadened tax base: The proposed development will generate more income for the Ga-Segonyana Local Municipality.
- Employment: The proposed development will lessen the unemployment rate under the jurisdiction of the Ga-Segonyana Local Municipality.
- Air Pollution: The proposed development will increase the air pollution in the area, especially if it is considered that this is a large number of The Steel Factory planned.
- Noise Pollution: The proposed development will increase the noise pollution in the area, especially if it is considered that this is a large Steel Factory.

No-go alternative (compulsory)

Direct impacts:

- ◆ If the no-go option is implemented, the proposed development will not be constructed and therefore no impacts on the environment are possible.
- ◆ The projected negative influence on the air quality of the area, if Alternative A2 is implemented will not take place.
- ◆ The projected negative influence on the noise levels of the area, if Alternative A2 is implemented will not take place.

Indirect impacts:

- ◆ If this option is implemented, the projected boost to the local and regional economy will not take place.
- ◆ No new jobs will be created.
- ◆ No improvement to local skills development will take place.

Cumulative impacts:

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- ◆ If this option is implemented, the projected boost to the local and regional economy will not take place.
- ◆ No new jobs will be created.
- ◆ No improvement to local skills development will take place.
- ◆ The projected negative influence on the air quality of the area, if Alternative A2 is implemented, will not take place.
- ◆ The projected negative influence on the noise levels of the area, if Alternative A2 is implemented will not take place.

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

Alternative A1(alternative)

Direct impacts:

- Plan the proposed development in a way that will ensure that the low gradients, which may cause problems especially during high rainfall events, are properly planned for.
- Plan the storm water structures in such a manner that no erosion can take place. No concentrated flow into the receiving environment is allowed. Water dispersal structures must be planned to ensure safe dispersal of floodwater.
- Plan to ensure that disturbed surfaces surrounding the proposed development are rehabilitated.
- Develop a contingency plan to ensure that all invasive plant species are exterminated.
- Prevent any possible surface or underground water pollution by planning abluent facilities.
- Conduct a geotechnical study to prevent negative impacts on the soil, underground water and/or geology.
- It will be imperative to plan for re-vegetation of the area, as soon as construction is completed.
- Plan for re-vegetation using indigenous species.
- Due to the fact that the vegetation of the area is rather pristine, care should be taken during the design phase to ensure that natural vegetation is preserved as far as possible.
- The big *Acacia* Trees must be marked and incorporated in the design of the facility to ensure that they are preserved.
- Obtain licenses for the removal of *Acacia erioloba* and *Acacia heamatoxylon* trees that will be affected by the proposed development.

Indirect impacts:

- Dust generation from the proposed development could impact on the surrounding area. Plan dust suppression measures.
- Plan to ensure that NO spills of lubricants / oils take place on bare soil. It is essential to plan for an area where all vehicles and machinery can be safely serviced.
- Plan for the safe storage of lubricants and other material that may have

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detrimental environmental impacts.

- ❑ Develop a management plan and ensure safe handling and disposing of all waste materials.
- ❑ Plan to enhance the well-being of the local communities by making optimal use of local labour.
- ❑ Develop a management plan to ensure that contractors (construction phase) abide by all the requirements of the Occupational Health and Safety Act.
- ❑ Ensure that all contractors are aware of the consequences of non-compliance to the relevant legislation regarding the above-mentioned act as well as with regard to the environment (acts, regulations, and special guidelines).
- ❑ Develop a management plan to ensure that:
 - ❑ All construction rubble is disposed of in a safe and environmentally acceptable manner.
 - ❑ NO concrete, gravel or other rubbish will be allowed to remain on site after the construction phase.
 - ❑ All cement shall be housed in a shed to prevent spills (due to rain and or handling errors).
 - ❑ NO glass, plastic, metal, or paper shall be allowed to pollute the area.
 - ❑ The project will boost the local and regional economy.
 - ❑ New jobs will be created.
 - ❑ Local skills development will take place.

Cumulative impacts:

The following cumulative impacts may result from the planned development.

- Solid waste: Ensure that the proposed development's addition of solid waste into the existing waste stream of the Ga-Segonyana Local Municipality can be accommodated.
- Sewage: Ensure that the proposed development's addition of sewage into the receiving environment can be accommodated.
- Water supply: Ensure that the proposed development's need for water can be supplied.
- Electricity Supply: Ensure that the proposed development's need for electricity can be supplied.
- Traffic: Ensure that the existing road infrastructure can handle the increase in traffic.
- Broadened tax base: The proposed development will generate more income for the Ga-Segonyana Local Municipality.
- Employment: Ensure that local labour is used to lessen the unemployment rate under the jurisdiction of the Ga-Segonyana Local Municipality.

Alternative A2(alternative)

Direct impacts:

- ❑ Plan the proposed development in a way that will ensure that low gradients, which may cause problems especially during high rainfall events, are properly planned for.

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- ❑ Plan the storm water structures in such a manner that no erosion can take place. No concentrated flow into the receiving environment is allowed. Water dispersal structures must be planned to ensure safe dispersal of floodwater.
- ❑ Plan to ensure that disturbed surfaces surrounding the proposed development are rehabilitated.
- ❑ Develop a contingency plan to ensure that all invasive plant species are exterminated.
- ❑ Prevent any possible surface or underground water pollution by planning ablution facilities.
- ❑ Conduct a geotechnical study to prevent negative impacts on the soil, underground water and/or geology.
- ❑ Plan for re-vegetation using indigenous species.
- ❑ Plan to ensure that the proposed development will not harm the people living and working in the area.
- ❑ Due to the fact that the vegetation of the area is rather pristine, care should be taken during the design phase to ensure that natural vegetation is preserved as far as possible.
- ❑ The big *Acacia* trees will have to be cut because of the layout of the steel factory.
- ❑ Plan to implement measures to reduce noise pollution.
- ❑ Plan to implement measures to reduce air pollution.

Indirect impacts:

- ❑ Dust generation from the proposed development could impact on the surrounding area. Plan dust suppression measures.
- ❑ Plan to ensure that NO spills of lubricants / oils take place on bare soil. It is essential to plan for an area where all vehicles and machinery can be safely serviced.
- ❑ Plan for the safe storage of lubricants and other material that may have detrimental environmental impacts.
- ❑ Develop a management plan and ensure safe handling and disposing of all waste materials.
- ❑ Plan to enhance the well-being of the local communities by making optimal use of local labour.
- ❑ Develop a management plan to ensure that contractors (construction phase) abide by all the requirements of the Occupational Health and Safety Act.
- ❑ Ensure that all contractors are aware of the consequences of non-compliance to the relevant legislation regarding the above-mentioned act as well as with regard to the environment (acts, regulations, and special guidelines).
- ❑ Search for a locality for the waste dump.
- ❑ Develop a management plan to ensure that:
 - ❑ All construction rubble is disposed of in a safe and environmentally acceptable manner.
 - ❑ NO concrete, gravel or other rubbish will be allowed to remain on site after the construction phase.
 - ❑ All cement shall be housed in a shed to prevent spills (due to rain and

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- or handling errors).
- NO glass, plastic, metal, or paper shall be allowed to pollute the area.
- The project will boost the local and regional economy.
- New jobs will be created.
- Local skills development will take place.
- Develop a management plan to monitor the increased noise and air pollution which may have a negative effect on commercial and residential developments in the area.
- Find an area for a waste dump.
- Devise a plan in order to provide the necessary coal for the plant.

Cumulative impacts:

The following cumulative impacts may result from the planned development.

- o Air Pollution: Plan for the increase in air pollution in the area. Set standards for emissions into the atmosphere. Plan to monitor these emissions.
- o Noise Pollution: Plan for the increase in noise pollution in the area. Set standards for noise levels. Plan to monitor these noise levels.
- o Solid waste: Ensure that the proposed development's addition of solid waste into the existing waste stream of the Ga-Segonyana Local Municipality can be accommodated.
- o Sewage: Ensure that the proposed development's addition of sewage into the receiving environment can be accommodated.
- o Water supply: Ensure that the proposed development's need for water can be supplied.
- o Electricity Supply: Ensure that the proposed development's need for electricity can be supplied.
- o Traffic: Plan to upgrade the access roads in order to accommodate the increase in traffic.
- o Broadened tax base: The proposed development will generate more income for the Ga-Segonyana Local Municipality.
- o Employment: Ensure that local labour is used to lessen the unemployment rate under the jurisdiction of the Ga-Segonyana Local Municipality.

3. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

The potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the construction phase: ***

Alternative A1 (preferred alternative)

Direct impacts:

- Low gradients may cause problems especially during high rainfall events.

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- ❑ Poorly constructed storm water dispersal structures may cause erosion.
- ❑ Un-rehabilitated disturbed surfaces can lead to erosion
- ❑ Foreign plant species are likely to invade disturbed areas.
- ❑ Poorly planned abluent facilities may cause pollution of surface and underground water.
- ❑ The proposed project can impact on the soil, underground water and/or geology of the area.
- ❑ The vegetation of the area will be removed in order to construct the proposed development.
- ❑ Habitats will be disturbed.

Indirect impacts:

- ❑ Dust generation from the proposed development could impact on the surrounding area.
- ❑ Spills of lubricants / oils can take place on bare soil.
- ❑ Waste materials such as glass, plastic, metal or paper, present a possible pollution hazard.
- ❑ Enhancement of the social well-being of the local communities.
- ❑ The requirements of the Occupational Health and Safety Act may not be abided by.
- ❑ Non-compliance to the relevant legislation may cause social and environmental problems.
- ❑ Construction rubble causes environmental degradation.
- ❑ Potential hazardous construction materials may spill into the environment.
- ❑ The project will boost the local and regional economy.
- ❑ New jobs will be created.
- ❑ Local skills development will take place.

Cumulative impacts:

The following cumulative impacts may result from the planned development.

- Solid waste: The proposed development will add more solid waste into the existing waste stream of the Ga-Segonyana Local Municipality.
- Water supply: The proposed development will add more pressure on the water supply.
- Traffic: The proposed development will result in an increase in traffic in the immediate surroundings of the proposed development.
- Employment: The proposed development will lessen the unemployment rate under the jurisdiction of the Ga-Segonyana Local Municipality.

BASIC ASSESSMENT REPORT

Direct impacts:

- ❑ Low gradients may cause problems especially during high rainfall events.
- ❑ Poorly designed storm water dispersal structures may cause erosion.
- ❑ Un-rehabilitated disturbed surfaces can lead to erosion.
- ❑ Foreign plant species are likely to invade disturbed areas.
- ❑ Poorly planned ablution facilities may cause pollution of surface and underground water.
- ❑ The proposed project can impact on the soil, underground water and/or geology of the area.
- ❑ The vegetation of the area will be removed in order to construct the proposed development.
- ❑ Habitats will be disturbed.

Indirect impacts:

- ❑ Dust generation from the proposed development could impact on the surrounding area.
- ❑ Spills of lubricants / oils can take place on bare soil.
- ❑ Waste materials such as glass, plastic, metal or paper, present a possible pollution hazard.
- ❑ Enhancement of the social well-being of the local communities.
- ❑ The requirements of the Occupational Health and Safety Act might not be abided by.
- ❑ Non-compliance to the relevant legislation may cause social and environmental problems.
- ❑ Construction rubble causes environmental degradation.
- ❑ Potential hazardous construction materials may spill into the environment.
- ❑ The project will boost the local and regional economy.
- ❑ New jobs will be created.
- ❑ Local skills development will take place.
- ❑ The increased noise and air pollution can have a negative effect on commercial and residential developments in the area.

Cumulative impacts:

The following cumulative impacts may result from the planned development.

- Solid waste: The proposed development will add more solid waste into the existing waste stream of the Ga-Segonyana Local Municipality.
- Water supply: The proposed development will add more pressure on the water supply.
- Traffic: The proposed development will result in an increase in traffic in the immediate surroundings of the proposed development.
- Employment: The proposed development will lessen the unemployment rate under the jurisdiction of the Ga-Segonyana

BASIC ASSESSMENT REPORT

Local Municipality.
<i>No-go alternative (compulsory)</i>
Direct impacts: <ul style="list-style-type: none">◆ If the no-go option is implemented, the proposed development will not be constructed and therefore no impacts on the environment are possible.
Indirect impacts: <ul style="list-style-type: none">◆ If this option is implemented, the projected boost to the local and regional economy will not take place.◆ No new jobs will be created.◆ No improvement of local skills development will take place.◆
Cumulative impacts: <ul style="list-style-type: none">◆ If this option is implemented, the projected boost to the local and regional economy will not take place.◆ No new jobs will be created.◆ No improvement to local skills development will take place.◆ The projected negative influence on the air quality of the area, if Alternative A2 is implemented will not take place.◆ The projected negative influence on the noise levels of the area, if Alternative A2 is implemented will not take place.

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

Alternative A1(alternative)

<i>Direct impacts:</i> <ul style="list-style-type: none">□ Construct the proposed development in a way that will ensure that gradients, which may cause problems especially during high rainfall events, are properly implemented.□ Construct the storm water structures in such a manner that no erosion can take place. No concentrated flow into the receiving environment is allowed. Water dispersal structures must be planned to ensure safe dispersal of floodwater.□ Ensure that disturbed surfaces surrounding the proposed development are rehabilitated.□ Ensure that all invasive plant species are exterminated.□ The big <i>Acacia</i> trees that were incorporated in the design of the facility must be marked and not be disturbed in any way.□ Prevent any possible surface or underground water pollution by constructing the ablution facilities as planned.□ Use the information gained from the geotechnical study to prevent negative impacts on the soil, underground water and/or geology.
<i>Indirect impacts:</i> <ul style="list-style-type: none">□ Dust generation from the proposed development could impact on the

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surrounding area. Use dust suppression measures.

- ❑ Ensure that NO spills of lubricants / oils take place on bare soil. It is essential to demarcate an area where all vehicles and machinery can be safely serviced.
- ❑ Ensure the safe storage of lubricants and other material that may have detrimental environmental impacts.
- ❑ Ensure safe handling and disposing of all waste materials.
- ❑ Make optimal use of local labour.
- ❑ Ensure that contractors (construction phase) abide by all the requirements of the Occupational Health and Safety Act.
- ❑ Ensure that all contractors are aware of the consequences of non-compliance to the relevant legislation regarding the above-mentioned act as well as with regard to the environment (acts, regulations, and special guidelines).
- ❑ Ensure that:
 - ❑ All construction rubble is disposed of in a safe and environmentally acceptable manner.
 - ❑ NO concrete, gravel or other rubbish will be allowed to remain on site after the construction phase.
 - ❑ All cement shall be housed in a shed to prevent spills (due to rain and or handling errors).
 - ❑ NO glass, plastic, metal, or paper shall be allowed to pollute the area.
 - ❑ Local skills development will take place.

Cumulative impacts:

The following cumulative impacts may result from the planned development.

- Solid waste: Ensure that the proposed development's addition of solid waste into the existing waste stream of the Ga-Segonyana Local Municipality can be accommodated.
- Water supply: Ensure that the proposed development's need for water can be supplied.
- Traffic: Ensure that the existing road infrastructure can handle the increase in traffic.
- Employment: Ensure that local labour is used to lessen the unemployment rate under the jurisdiction of the Ga-Segonyana Local Municipality.

Alternative A2(alternative)

Direct impacts:

- ❑ Construct the proposed development in a way that will ensure that low gradients, which may cause problems especially during high rainfall events, are capable of transporting excess water away from the site.
- ❑ Construct the storm water structures in such a manner that no erosion can take place. No concentrated flow into the receiving environment is allowed. Water dispersal structures must be planned to ensure safe dispersal of floodwater.
- ❑ Ensure that disturbed surfaces surrounding the proposed development are rehabilitated.

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- ❑ Ensure that all invasive plant species are exterminated
- ❑ No mitigation is possible for the loss of the big *Acacia* trees that will be cut.
- ❑ Prevent any possible surface or underground water pollution by constructing the ablation facilities as planned.
- ❑ Use the information gained from the geotechnical study to prevent negative impacts on the soil, underground water and/or geology.
- ❑ Ensure that the proposed development will not harm the people living and working in the area.
- ❑ Implement measures to reduce noise pollution.
- ❑ Implement measures to reduce air pollution.

Indirect impacts:

- ❑ Dust generation from the proposed development could impact on the surrounding area. Use dust suppression measures.
- ❑ Ensure that NO spills of lubricants / oils take place on bare soil. It is essential to demarcate an area where all vehicles and machinery can be safely serviced.
- ❑ Ensure the safe storage of lubricants and other material that may have detrimental environmental impacts.
- ❑ Ensure safe handling and disposing of all waste materials.
- ❑ Make optimal use of local labour.
- ❑ Ensure that contractors (construction phase) abide by all the requirements of the Occupational Health and Safety Act.
- ❑ Ensure that all contractors are aware of the consequences of non-compliance to the relevant legislation regarding the above-mentioned act as well as with regard to the environment (acts, regulations, and special guidelines).
- ❑ Ensure that:
 - ❑ All construction rubble is disposed of in a safe and environmentally acceptable manner.
 - ❑ NO concrete, gravel or other rubbish will be allowed to remain on site after the construction phase.
 - ❑ All cement shall be housed in a shed to prevent spills (due to rain and or handling errors).
 - ❑ NO glass, plastic, metal, or paper shall be allowed to pollute the area.
 - ❑ Local skills development will take place.

Cumulative impacts:

The following cumulative impacts may result from the planned development.

- Solid waste: Ensure that the proposed development's addition of solid waste into the existing waste stream of the Ga-Segonyana Local Municipality can be accommodated.
- Water supply: Ensure that the proposed development's need for water can be supplied.
- Traffic: Ensure that the existing road infrastructure can handle the increase in traffic.
- Employment: Ensure that local labour is used to lessen the unemployment

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- rate under the jurisdiction of the Ga-Segonyana Local Municipality.
- Air Pollution: Plan for the increase in air pollution in the area. Set standards for emissions into the atmosphere. Plan to monitor these emissions.
 - Noise Pollution: Plan for the increase in noise pollution in the area. Set standards for noise levels. Plan to monitor these noise levels

4. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

The potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the operational phase: ***

Alternative A1 (preferred alternative)

Direct impacts:

- Obstructions in storm water structures may occur.
- Lack of rehabilitation may cause problems.
- Invasive species may take over disturbed areas.
- Poorly serviced infrastructure may cause environmental problems.

Indirect impacts:

- Labour is needed.

Cumulative impacts:

The following cumulative impacts may result from the planned development.

- Solid waste: The proposed development will add more solid waste into the existing waste stream of the Ga-Segonyana Local Municipality.
- Sewage: The proposed development will add more sewage into the receiving environment.
- Water supply: The proposed development will add more pressure on the water supply.
- Electricity Supply: The proposed development will add more pressure on the supply of electricity.
- Employment: Continue using local labour.

Alternative A2

Direct impacts:

- Obstructions in storm water structures may occur.
- Lack of rehabilitation may cause problems.
- Invasive species may take over disturbed areas.
- Poorly serviced infrastructure may cause environmental problems.
- The Steel Factory will cause air- and noise pollution.

Indirect impacts:

- Labour is needed.
- The increased noise and air pollution can have a negative effect on commercial and residential developments in the area.

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- The Steel Factory has large coal, water and electricity needs. This may prove to be a problem in the long run.
- The waste site for the waste generated by the factory must be found, planned and operated as a separate facility.

Cumulative impacts:

The following cumulative impacts may result from the planned development:

- Solid waste: The proposed development will add more solid waste into the existing waste stream of Ga-Segonyana Local Municipality.
- Sewage: The proposed development will add more sewage into the receiving environment.
- Water supply: The proposed development will add more pressure on the water supply.
- Electricity Supply: The proposed development will add more pressure on the supply of electricity.
- Employment: Continue using local labour.

No-go alternative (compulsory)

Direct impacts:

- ◆ If the no-go option is implemented, the proposed development will not be constructed and therefore no impacts on the environment are possible.
- ◆ The projected negative influence on the air quality of the area, if Alternative A2 is implemented will not take place.
- ◆ The projected negative influence on the noise levels of the area, if Alternative A2 is implemented will not take place.

Indirect impacts:

- ◆ If this option is implemented, the projected boost to the local and regional economy will not take place.
- ◆ No new jobs will be created.
- ◆ No improvement of local skills development will take place.

Cumulative impacts:

- ◆ If this option is implemented, the projected boost to the local and regional economy will not take place.
- ◆ No new jobs will be created.
- ◆ No improvement of local skills development will take place.
- ◆ The projected negative influence on the air quality of the area, if Alternative A2 is implemented will not take place.
- ◆ The projected negative influence on the noise levels of the area, if Alternative A2 is implemented will not take place.

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

Alternative A1(alternative)

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Direct impacts:

- ❑ Maintain the storm water structures.
- ❑ Ensure that the rehabilitation is done as planned.
- ❑ Continue to eradicate invasive species that may take over disturbed areas.
- ❑ Ensure that the infrastructure is constructed as planned and approved.

Indirect impacts:

- ❑ Ensure good labour relationships.

Cumulative impacts:

The following cumulative impacts may result from the planned development:

- Solid waste: Ensure that the solid waste is disposed of as planned and that it enters the existing waste stream of the Ga-Segonyana Local Municipality.
- Sewage: Ensure that the sewage is disposed of as planned.
- Water supply: Supply water as planned.
- Electricity Supply: Supply electricity as planned.
- Employment: Continue using local labour.

Alternative A2(alternative)

Direct impacts:

- ❑ Maintain the storm water structures.
- ❑ Ensure that the rehabilitation is done as planned.
- ❑ Continue to eradicate invasive species that may take over disturbed areas.
- ❑ Ensure that the infrastructure is constructed as planned and approved.
- ❑ Plan to ensure that the proposed development will not harm the people living and working in the area.
- ❑ Implement measures to reduce noise pollution.
- ❑ Implement measures to reduce air pollution.

Indirect impacts:

- ❑ Ensure good labour relationships.

Cumulative impacts:

The following cumulative impacts may result from the planned development.

- Solid waste: Ensure that the solid waste is disposed of as planned and that it enters the existing waste stream of the Ga-Segonyana Local Municipality.
- Sewage: Ensure that the sewage is disposed of as planned.
- Water supply: Supply water as planned.
- Electricity Supply: Supply electricity as planned.
- Employment: Continue using local labour.
- Air Pollution: The proposed development will increase the air pollution in the area, especially if it is considered that this is a large number of The Steel Factory planned. The quality of the emissions will have to be carefully monitored.
- Noise Pollution: The proposed development will increase the noise pollution in the area, especially if it is considered that this is a large Factory. The levels of noise pollution will have to be closely monitored.

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No-go alternative (compulsory)

Direct impacts:

- ◆ If the no-go option was implemented, the proposed development will not be constructed and therefore no impacts on the environment are possible.

Indirect impacts:

- ◆ If this option was implemented, the boost to the local and regional economy would not have taken place.
- ◆ No new jobs would have been created.
- ◆ No improvement to local skills development would have taken place.

Cumulative impacts:

- ◆ If this option was implemented, the projected boost to the local and regional economy could not have taken place.

3. ENVIRONMENTAL IMPACT STATEMENT

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

Alternative A (preferred alternative)

BIO-PHYSICAL ASPECTS

GEOLOGY

GEOLOGY -POSSIBLE IMPACTS (TYPE):

- ◆ Excavations will impact on the broad environment
- ◆ If produced by the activity, excess rock spoils will impact on the environment

GEOLOGY- POSSIBLE DURATION OF IMPACTS

- ◆ As long as it is necessary to do the trenching and laying the necessary infrastructure (max. 5 weeks)
- ◆ As soon as the trenches are filled again, - all excess rubble will be removed. (max. 2,5 weeks)

GEOLOGY- LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of the impacts occurring is high

GEOLOGY- POSSIBLE SIGNIFICANCE

- ◆ If properly managed and the stipulations of the Health and Safety Act and the geo-technical report are implemented, the significance of the impacts occurring is low to medium

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GEOLOGY – POSSIBLE MITIGATION STEPS

- ◆ The mitigation of the possible impacts deriving from the geology is fairly simple and entirely possible if the management steps described in the management plan are implemented

TOPOGRAPHY

TOPOGRAPHY- POSSIBLE IMPACTS (TYPE):

- ◆ Low gradients may impact on storm water dispersal
- ◆ Low gradients are ideal for the layout of this type of development

TOPOGRAPHY- POSSIBLE DURATION OF IMPACTS

- ◆ The duration of the storm water dispersal as well as the final layout is local and long term

TOPOGRAPHY- LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of the impacts occurring is high

TOPOGRAPHY- POSSIBLE SIGNIFICANCE

- ◆ If properly managed and the stipulations of the Health and Safety Act implemented when constructing infra-structure, the significance of the impacts occurring is low to medium.

TOPOGRAPHY – POSSIBLE MITIGATION STEPS

- ◆ Construct the necessary infra-structure to mitigate adverse impacts from steep slopes/storm events and ensure that it is properly maintained over the long term

CLIMATE

CLIMATE- POSSIBLE IMPACTS (TYPE):

- ◆ Floods due to intense rainfall events
- ◆ Dry spells due to droughts – with the resultant dust storms and possibility of veldt fires

CLIMATE- POSSIBLE DURATION OF IMPACTS

- ◆ The duration of climate impacts are difficult to determine as climatic fluctuations are impossible to predict. The impacts may be local and short term after an intense rainfall event, but may be long-term during droughts

CLIMATE- LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of the impacts occurring is high

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CLIMATE- POSSIBLE SIGNIFICANCE

- ◆ The significance of extreme climatic events can be high
- ◆ The significance of the impacts occurring is low to medium.

CLIMATE – POSSIBLE MITIGATION STEPS

- ◆ Construct the necessary infra-structure to mitigate adverse impacts of possible flood events
- ◆ In the event of extremely dry spells during the construction phase plan to spray exposed surfaces with water to curb excessive dust generation

SOIL

SOIL- POSSIBLE IMPACTS (TYPE):

- ◆ Soil erosion due to either floods or dry spells (wind erosion)
- ◆ Soil disturbance due to construction activities

SOIL- POSSIBLE DURATION OF IMPACTS

- ◆ The duration of erosion caused by either floods or dry spells are difficult to determine due to the uncertainty associated with weather cycles
- ◆ Soil problems associated with the construction activities are dependant on the time that will be spent on this activity. It is envisaged that it will take anything between one and two years

SOIL- LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of both the impacts occurring is high

SOIL- POSSIBLE SIGNIFICANCE

- ◆ The significance of climatic events on the soil is medium. Depending on the implementation of mitigation measures. While the impact deriving from construction activities are normally (if sound management practises are implemented) regarded as low to medium
- ◆ If properly managed and the stipulations of the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) implemented when constructing infra-structure, the significance of the impacts occurring is low to medium

SOIL – POSSIBLE MITIGATION STEPS

- ◆ Ensure that the mitigation measures described for the protection of soils denuded of vegetation, as well as of soils disturbed during the

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construction phase are implemented

WATER

WATER -POSSIBLE IMPACTS (TYPE):

- ◆ Flooding due to intense rainfall events
- ◆ Pollution of surface and/or ground water resources

WATER- POSSIBLE DURATION OF IMPACTS

- ◆ The duration of flooding are virtually impossible to determine as climatic fluctuations are extremely difficult to predict
- ◆ If pollution of surface and/or ground water resources are occurring, it is usually likely due to mismanagement of either water dispersal / water pollution (e.g. by sewage) or poor management, it can be considered to be local and long-term for underground water and regional and short term for surface water resources

WATER- LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of the impacts occurring is low

WATER- POSSIBLE SIGNIFICANCE

- ◆ The significance of extreme climatic events can be high
- ◆ The significance of pollution occurring will be low if all the proposed mitigation steps are implemented

WATER – POSSIBLE MITIGATION STEPS

- ◆ Implement the plans to deal with excessive rainfall events (build and maintain flood prevention measures)
- ◆ Implement plans to prevent the possible contamination of surface and/or underground water resources. This can be accomplished by implementing measures described in both the bio-physical as well as the socio-economical sections of this document

FLORA

FLORA -POSSIBLE IMPACTS (TYPE):

- ◆ The denuding of surfaces due to construction activities and the resultant erosion (water and wind)
- ◆ Invasion by non-indigenous species
- ◆ Extermination of all the indigenous *Acacia* trees

FLORA- POSSIBLE DURATION OF IMPACTS

- ◆ The impacts derived from denuded surfaces will depend entirely on

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the effectiveness and dedication to the principal of rehabilitation of disturbed surfaces. In the extreme scenario – the impact can last for years, or in the favourable scenario – impacts can last for a few months only. If the proposed mitigation measures are implemented, the duration of the impacts will be local and short term

- ◆ The duration of impacts from invasive species also depend entirely on the dedication/and/or lack of dedication to the invasive prevention programs. If the proposed mitigation measures are implemented, the duration of the impacts will be local and short term
- ◆ If properly managed most of the *Acacia* trees will be saved and preserved and the impact will therefore have a long duration

FLORA- LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of the impacts occurring during the construction phase is high.
- ◆ The positive impacts derived from the proposed mitigation measures will be local and long term and of high significance
- ◆ If properly planned and implemented the likelihood of the extermination of the *Acacias* is highly unlikely

FLORA- POSSIBLE SIGNIFICANCE

- ◆ The significance of both denuded surfaces and/or invasive intrusions are low if the proposed mitigation measures are implemented

FLORA – POSSIBLE MITIGATION STEPS

- ◆ Implement the rehabilitation plans for vegetation as well as the elimination of invader species at the earliest possible moment

FAUNA

FAUNA -POSSIBLE IMPACTS (TYPE):

- ◆ Disturbance of habitats

FAUNA- POSSIBLE DURATION OF IMPACTS

- ◆ The impact on burrowing mammals and reptiles of all kinds are likely to be local and short term during the construction phase
- ◆ Insects and birds are likely to survive and even re-colonise the area (if proper rehabilitation of flora is implemented)

FAUNA- LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of the negative impacts occurring is high, while

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sound environmental practices usually result in some degree of success as far as insects and birds are concerned

FAUNA- POSSIBLE SIGNIFICANCE

- ◆ The significance of the expected faunal impacts are low – depending on the degree of success achieved through habitat restoration

FAUNA- MITIGATION STEPS

- ◆ Take the necessary steps to preserve the few remaining faunal species and enhance their possibility of survival by implementing rehabilitation measures for flora

AIR QUALITY

AIR QUALITY -POSSIBLE IMPACTS (TYPE):

- ◆ Dust – due to exposed soils

AIR QUALITY -- POSSIBLE DURATION OF IMPACTS

- ◆ The duration of these impacts will be local and short term

AIR QUALITY -- LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of the negative impacts occurring is medium

AIR QUALITY - POSSIBLE SIGNIFICANCE

- ◆ The significance of the expected air quality impacts are low

AIR QUALITY - MITIGATION STEPS

- ◆ Take the necessary steps to prevent dust generation by spraying water over denuded surfaces during dry spells

NOISE

NOISE -POSSIBLE IMPACTS (TYPE):

- ◆ Noise pollution due to construction activities
- ◆ Noise due to the new activities

NOISE-- POSSIBLE DURATION OF IMPACTS

- ◆ The duration of these impacts will be local and short term
- ◆ The noise from the new activities will be long term

NOISE - LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of the negative impacts occurring is low

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- ◆ The likelihood of noise from the new activities is medium

NOISE - POSSIBLE SIGNIFICANCE

- ◆ The significance of this impact is judged low - if the restrictions of construction times are adhered to
- ◆ The significance of the expected noise impacts from the new activities is medium to low

NOISE - MITIGATION STEPS

- ◆ Take the necessary steps to restrict construction times to normal working hours
- ◆ Excessive noise due to loud music can be prevented introducing maximum allowable decibel ratings from noise sources

AESTHETICS

AESTHETICS -POSSIBLE IMPACTS (TYPE):

- ◆ In an area as unspoilt as this one, any development will be negative
- ◆ The visual impact of the development will be negative

AESTHETICS -- POSSIBLE DURATION OF IMPACTS

- ◆ The duration of these negative impacts are likely to be long term.

AESTHETICS QUALITY - LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of the impacts occurring is high

AESTHETICS - POSSIBLE SIGNIFICANCE

- ◆ The likelihood of the negative impacts occurring is highly significant. If proper design and rehabilitation is a priority, the significance of impacts occurring can be lessened

AESTHETICS - MITIGATION STEPS

- ◆ Implement the proper design and rehabilitation measures as described in the management plan to enhance aesthetics of the area

SOCIO-ECONOMIC ASPECTS

SOCIO-ECONOMIC ASPECTS -POSSIBLE IMPACTS (TYPE)

- ◆ Job opportunities will be created for some of the unemployed people in the area under the jurisdiction of the Ga-Segonyana

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Local Municipality

- ◆ Skills improvement will be provided for presently unskilled (or semi-skilled workers) living in the area under the jurisdiction of the Ga-Segonyana Local Municipality
- ◆ If a proper management plan for the project can be implemented, the present state of the area where the proposed development is planned, can be maintained at an acceptable standard (that is if proper mitigation steps described in this report are implemented)
- ◆ The quality of life for people living in the proposed development can be enhanced if ALL the proper steps are followed when services are provided
- ◆ All possible negative impacts** that may be derived from poor environmental performances during all the project phases, must be identified, monitored, and mitigation steps implemented

** Negative impacts include all the aspects described under the bio-physical as well as the socio-economic characteristics of the area.

SOCIO-ECONOMIC ASPECTS - POSSIBLE DURATION OF IMPACTS

- ◆ The duration of these impacts will be entirely dependant on the duration of the construction phase, the implementation of possible mitigation measures and the dedication of the applicant, contractors and eventual occupants of the new infrastructure to sound environmental principals (including management plans / mitigation measures, etc). The overall duration of impacts can be considered to be long term

SOCIO-ECONOMIC ASPECTS - LIKELIHOOD OF IMPACTS OCCURRING

- ◆ The likelihood of the impacts occurring is high

SOCIO-ECONOMIC ASPECTS - POSSIBLE SIGNIFICANCE

- ◆ The significance of this impact is judged to be medium to high

SOCIO-ECONOMICS - MITIGATION STEPS

- ◆ Implement all the management steps described in this document to enhance the socio-economic aspects of the area

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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	
YES	

Is an EMPr attached?

The EMPr must be attached as Appendix F.

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):

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:

1. The mitigation measures as described in this report must be implemented
2. The mitigation measures contained in this report are legally binding
3. Mitigation measures must be made known to personnel, contractors and sub-contractors associated with this project
4. Erosion control measures as specified in the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) must be controlled as specified in the act
5. Weeds and invader plants that are declared in terms of the Conservation of Agricultural Resource Act (Act 43 of 1983) must be controlled as prescribed in the act
6. The preservation of *Acacia* trees must be executed as prescribed by the relevant regulations
7. An environmental control officer must ensure that conditions stipulated in the ROD are complied by. The name and contact details must be supplied to The Department of Environmental Affairs - prior to the commencement of the activities
8. The contractor/s responsible for the construction must leave the site free from erosion, pollution and/or unwanted material. The affected areas must be rehabilitated to the satisfaction of the department
9. The site seems to be clear of any archaeological / historical / cultural features as specified by SAHRA. However, if during the construction phase any such artefacts are discovered, the work in the direct vicinity of the find must be stopped. Under no circumstances shall any artefacts be destroyed. Such a site must be marked and fenced off and SAHRA notified as soon as possible
10. As far as possible, employment opportunities should be given to the local labour force in order to stimulate growth in the local and regional economy
11. In the event of non-compliance to any of the conditions contained in the ROD, the contractor / applicant will be held responsible
12. The applicant is responsible for all costs necessary to comply with the above conditions unless otherwise specified in the contracts of the contractor/s

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SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

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ENVIRONMENTAL MANAGEMENT PROGRAM (EMPr)

THE PURPOSE OF THE EMPr IS TO:

- Encourage good management practices through planning and commitment to environmental issues;
- Define how the management of the environment is reported and performance evaluated;
- Provide rational and practical environmental guidelines to:
 - Minimize disturbance of the natural environment;
 - Prevent or minimize all forms of pollution;
 - Protect indigenous flora and fauna;
 - Prevent soil erosion and facilitate re-vegetation of affected areas;
 - Comply with all applicable laws, regulations, standards and guidelines for the protection of the environment; and,
 - Adopt the best practicable means available to prevent or minimize adverse environmental impacts.
 - Develop waste management practices based on prevention, minimisation, recycling, treatment or disposal of wastes;
 - Describe all monitoring procedures required to identify impacts on the environment; and,
 - Train employees and contractors with regard to environmental obligations.

A PROFESSIONAL TEAM CONSISTING OF THE FOLLOWING EXPERTS HAVE BEEN ASSEMBLED IN ORDER TO ENSURE THE SUCCESS OF THE PROPOSED DEVELOPMENT:

- Civil Engineer (See Appendix D.2 for a copy of his report)
- Town and Regional Planners (See Appendix A.2 for a copy of the proposed layout plan)
- Geo-Technical Engineer (See Appendix D.1 for a copy of this report)
- Ecological Specialist (See Appendix D.5 for a copy of his report).
- Registered Environmental Assessment Practitioner (EAP) (see Para 2.6 of this section for details of the EAP-firm)
- Surveyor
- SAHRA Consultant (Appendix D.3)
- Traffic Engineer(Appendix D.4)

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- ◆ The Civil Engineer designed the services in such a manner as to comply with the stipulations of the Red Book. He also devised ways and means to ensure that the drainage system of the project will take the surface of the area into account.
- ◆ The Town and Regional Planner designed the proposed development in such a way that optimal living conditions are available to all residents of the proposed development as well as the occupants of the surrounding areas. He also designed the layout of the proposed development, taking into account the stormwater management measures described by the Civil Engineer.
- ◆ The surveyor ensured that the cadastral information is accurate, up to date and properly mapped. The contours of the area are accurately plotted.
- ◆ The Geo-Technical Engineer assessed the ground and soil conditions of the area in order to ensure that the intended development can be constructed. His recommendations on construction methods, where applicable must be complied with.
- ◆ The Ecological specialist assessed the area and devised mitigation measures to ensure that environmental degradation of the area will be minimised.
- ◆ The traffic Engineer assessed the *status quo* of the traffic and designed measures to ensure that the infrastructure can accommodate the increased traffic volumes.
- ◆ The SAHRA accredited specialist assessed the impact of the proposed development on the cultural and heritage assets of the area.
- ◆ It will be essential to plan for the appointment of an Environmental Control Officer (ECO) who will be responsible to ensure that all aspects regarding the environmental issues are implemented and monitored.
- ◆ The ECO will be responsible for maintaining a database of all records pertaining to the environment for the study area.

It will be essential that the Environmental Management Plan (EMP) should not become an additional requirement separate from day-to-day activities of the site. If the EMP becomes another layer of control, staff will see it as an obstruction to normal duties and operations. For the EMP to be effective it must be part of the company's routine operations (EPA, 1995a).

Commitment from all levels of management and the workforce is the most important element in the success of this EMP.

The employees must be able to identify and act to minimise or avoid environmental impacts. This will only be possible by training and educating them to make the project their own. Once they realise that their actions can make a difference on a local and even on a global scale, it will result in a commitment to ensure better living conditions for themselves and generations to come.

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- ◆ The developer will have to ensure that the contractors are aware of their responsibilities regarding the environmental issues.
- ◆ The developer will be responsible to ensure that an ECO is appointed and that the ECO knows his responsibilities.
- ◆ The developer will be responsible to ensure that the contractors are aware of all the design specifications as planned for by the professional team.
- ◆ The developer will be responsible to ensure that the proposed development is constructed as planned.
- ◆ The ECO must monitor and report on the contractor's work.
- ◆ All incidents such as spills of toxic or any other substance that may negatively affect the environment must be reported to the relevant authorities.

The developer will remain responsible for the rehabilitation of the area. He will have to ensure that the contractors rehabilitate as planned.

The development will eventually be transferred to the developer who will be legally bound to all environmental obligations as defined in this management plan.

DETAILS OF ASPECTS OF THE ACTIVITY

1. BIO-PHYSICAL ASPECTS

1.1 GEOLOGY

Pre-construction phase

- Plan for excavations that may be necessary to establish the infrastructure. This will be the responsibility of the developer in conjunction with the civil engineer and the contractor.
- Plan for the dumping of excess rock spoils at a suitable site. No excess rock spoils will be allowed to remain on site. Ensure that contractors are aware of this prerequisite. It will be the responsibility of the developer and the contractor to ensure that this task is adequately planned for, and that a proper site is determined. The ECO will be responsible to monitor this aspect.
- Plan the construction of foundations according to the specifications as determined by the geotechnical Engineer. This will be the responsibility of the Civil Engineer to be monitored by the ECO.

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Construction phase

- Use the most practical methods (limiting force) for the excavations necessary to establish the infrastructure. If explosives are to be used, the ECO must first ensure that it is necessary and secondly ensure, together with the Safety Officer, that all procedures as required by law are implemented.
- Ensure that no rock spoils remain in the area. This should be monitored by the ECO and will remain the responsibility of the developer.
- Ensure that excess spoils are removed to a suitable site. This should be monitored by the ECO and will remain the responsibility of the developer.

Operational phase

- No further management steps are necessary for this variable during the operational phase of the project.

1.2 TOPOGRAPHY

Certain management steps, which are related to the topography, will be described in other sections of the management plan (climate, drainage, aesthetics etc.).

Pre-construction phase

- Plan the layout of the proposed development taking into account the gradients. This will be the responsibility of the Town Planner and the Civil Engineer, using the topographical map provided by the Surveyor.
- Provide for structures to prevent concentrated runoff. The Civil Engineer will do this.
- The overall design criteria and approach, including geometric design and road layer design, can therefore be summarised as follows:
- Roads are to be constructed to standards as specified in SABS 1200. Road materials conforming to the requirements of TRH 14 will be specified.

Construction phase

- Construct the structures to prevent concentrated runoff. This will be done by the developer and monitored by the ECO.
- Roads are to be constructed to standards as specified in SABS 1200. Road materials conforming to the requirements of TRH 14 will be specified.
- All storm water management will be in accordance with DWA, DEAT and the Ga-Segonyana Local Municipality's specifications.
- The layouts of the proposed erven have been planned taking the prerequisite with regard to slopes and the optimisation of slopes into full consideration.

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- The ECO will have to monitor construction and ensure that everything is done according to the design specifications.

Operational phase

- Maintain anti-erosion and runoff measures. This will be the responsibility of the Developer that takes over from the developer after construction has been completed.

1.3 CLIMATE

1.3.1 Rainfall

Pre-construction phase

- Plan for extreme events to ensure that no concentrated runoff in excess of the capacity of the drainage network occurs. This will be the responsibility of the Civil Engineer.
- In the event of an extreme event occurring, plan to move all contractors from the construction site. They can only move back to the construction sites once all damage caused by the extreme event has been mitigated. This will have to be initiated by the developer and executed by the contractor and monitored by the ECO.
- Develop a contingency plan to cope with very hot dry spells and the possibility of fires occurring. This will have to be done by the contractor and monitored by the ECO.
- Plan for dust suppression during dry spells. This will have to be done by the contractor and monitored by the ECO.

Construction phase

- Implement the above-mentioned steps to ensure that the effects of extreme events can be mitigated. It is extremely important to ensure that the effects of high rainfall events are planned for during the pre-construction phase. This will prevent erosion during the construction phase when large tracts of the land could be denuded. This will have to be done by the contractor and monitored by the ECO.
- Implement fire prevention and control measures. This will have to be done by the contractor and monitored by the ECO.
- Implement dust suppression measures. This will have to be done by the contractor and monitored by the ECO.

Operational phase

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- Implement the steps described in the previous phase to ensure that the anti-erosion measures are implemented and that erosion prevention structures are maintained. This will be the responsibility of the Developer that takes over from the developer after construction has been completed.

1.3.2 Temperature

No further management steps will be needed other than those described in the previous section with regard to the possibility of fires breaking out during extremely hot and dry spells.

1.3.3 Wind

If the management steps described in the section with regard to possible fires as well as dust suppression are properly implemented, no extra management steps will be needed to mitigate the possible effects of this variable.

1.4 SOIL

Pre- construction phase

- Plan the general infrastructure in such a manner that minimum disturbance of soil is necessary. This will be the responsibility of the developer.
- Undertake the necessary detailed engineering investigations and plan to implement their findings. This has to be done by the Geo-technical Engineer and his findings will have to be incorporated into the final designs.
- Ensure that the planning of control structures do not cause erosion in the areas to which the water is diverted to. This will have to be planned for by the Civil Engineer.
- Plan to control erosion as specified in the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).

Construction phase

- Construct the general infrastructure in such a manner that minimum disturbance of soil occurs. This will be the responsibility of the developer.
- Implement the plans to ensure that the infrastructure will cause minimum soil disturbance. This will have to be done by the contractor and monitored by the ECO.
- If topsoil is removed for construction purposes, it should be stockpiled in such a manner that the soil does not erode (a maximum side slope of 18° is allowable). If excess topsoil is removed, it must be used for soil rehabilitation of previously disturbed areas. This will have to be done by the contractor and monitored by the ECO.

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- Control erosion as specified in the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).

Operational phase

- Implement a maintenance plan to ensure that no soil erosion can occur as specified in the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).
- It is crucially important to maintain anti-erosion structures. See other sections dealing with surface drainage and flora. This will be the responsibility of the Developer that takes over from the contractor after construction has been completed.

1.5 WATER

1.5.1 Surface Water

Pre-construction phase

- Plan to ensure that all contractors that are employed on site are aware of their responsibilities with regard to pollution of water prevention according to the requirements of the National Water Act, 1998 (Act 36 of 1998). This will be the responsibility of the developer and will have to be monitored by the ECO.
- No raw sewage or other pollutants such as plastic, oil, cement, etc. will be allowed to pollute water. (See also sections on underground water and socio-economic aspects). This will be the responsibility of the developer and the contractor and will have to be monitored by the ECO.
- Develop a management plan to ensure a clean-water environment during all phases of the project. The service of a suitably qualified engineer is essential in the planning phase. The Civil Engineer will be responsible to develop such a plan.
- Design all storm water structures (and other surface water flow modifications) in such a manner that the impact on the natural systems are minimised. The system must comply with the requirements of the Local Authority and DWA. Keep in mind that increased runoff invariably results from increased bare surfaces. All excess runoff structures must end up in infiltration structures (thereby ensuring maximum groundwater recharge). The Civil Engineer will be responsible to develop such a plan.
- Plan to slope ground surfaces in such a way that no ponding occurs. This will have to be done by the contractor and monitored by the ECO.

Construction phase

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- Ensure that contractors are aware of their responsibilities as far as water pollution is concerned in terms of the requirements of the National Water Act, 1998 (Act 36 of 1998). It will be imperative to monitor their activities. It is suggested that a penalty clause be inserted in the contracts to enable the applicant to take the necessary rehabilitation measures in case of non-compliance. This will have to be done by the developer and monitored by the ECO.
- Implement the water management plan with regard to dispersion. This will have to be done by the contractor and monitored by the ECO.

Operational phase

- Ensure that all concerned are aware of all aspects regarding the integrity of the water environment. Enforce if necessary.
- Maintain the surface water management infrastructure. This will be the responsibility of the Developer that takes over from the Contractor after construction has been completed.

1.5.2 Underground Water

Pre construction phase

- Ensure that all activities that may possibly affect ground water are performed in accordance with the requirements of the National Water Act, 1998 (Act 36 of 1998), DWA and the Local Authority. The correct installation and maintenance of sewage system must be regarded as having a high priority.
- The Civil Engineer will do the planning of the installation of the above-mentioned system. The responsibility will however remain that of the developer to ensure that the contractors install the sewage system as planned. It will be essential that the ECO monitor this aspect very closely.
- Plan for adequate chemical toilets to be used by contractors during the construction phase. The provision and maintenance of which must form part of the contractor liabilities and must be described as such in their contracts. It will be essential that the ECO monitor this aspect very closely.
- Plan for the regular inspection of sewage facilities throughout the life cycle of the project. This will be the responsibility of the Local Municipality.
- The storage and handling of lubricants, oils, paint and material such as cement must be provided for as part of the different contractor's contracts. Specially demarcated and secure storage facilities must be provided for. It will be essential that the ECO monitor this aspect very closely.
- Plan the disposal from hard surfaces in such a manner that the water can infiltrate

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into the underground water without causing surface erosion. The Civil Engineer will do this.

Construction phase

- Implement the mitigation measures as is described in the pre construction phase. This will be the responsibility of the developer to be monitored by the ECO.
- Construct the sewage system in such a manner that no spillage is possible.
- Ensure that all construction activities that may possibly affect ground water are performed in accordance with the requirements of the National Water Act, 1998 (Act 36 of 1998), DWA and the Local Authority. This will have to be done by the contractor and monitored by the ECO.
- Ensure that adequate chemical toilets are available and are used by contractors during the construction phase - the provision and maintenance of which must form part of the contractor's liabilities. It will be essential that the ECO monitor this aspect very closely.
- The storage and handling of lubricants, oils, paint, and material such as cement must be provided for as part of contractor's contracts. Specially demarcated and secure storage facilities must be used. It will be essential that the ECO monitor this aspect very closely.
- Construct the disposal from hard surfaces in such a manner that the water can infiltrate into the underground water without causing surface erosion. This will have to be done by the contractor and monitored by the ECO to ensure that the construction is according to the plan.

Operational phase

- Continue to treat all operational activities that may possibly affect ground water in accordance with the requirements of DWA and the Local Authority. This will be the responsibility of the Developer that takes over from the Contractor after construction has been completed.
- Maintain the disposal systems that originate on hard surfaces in order to allow the water to infiltrate into the underground water without causing surface erosion. This will be the responsibility of the Developer that takes over from the Contractor after construction has been completed.

1.6 FLORA

Pre-construction phase

- Plan for the rehabilitation of all cleared open spaces with indigenous vegetation. This will

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- be the responsibility of the developer.
- Plan for the rehabilitation of all areas disturbed during construction. This will be the responsibility of the developer.
- Prepare a contingency plan to deal with the invasive species in terms of the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983). This will be the responsibility of the developer to be executed by the contractor and monitored by the ECO.
- Plan to prevent veldt fires in the adjoining land. Firebreaks should be established in terms of the requirements and conditions of the National Veldt and Forest Fires Act (Act No. 101 of 1998). Plan a fire-fighting program that adheres to the by-laws of the Local Municipality. This will be the responsibility of the contractor to be monitored by the ECO.
- Due to the fact that the vegetation of the area is rather pristine, care should be taken during the design phase to ensure that natural vegetation is preserved as far as possible. This will be the responsibility of the contractor to be monitored by the ECO.
- The big *Acacia erioloba* and *Acacia heamatoxylon* trees must be marked and incorporated in the design of the facility to ensure that they are protected. This will be the responsibility of the contractor to be monitored by the ECO.
- Plan to obtain licenses for the removal of affected *Acacia erioloba* and *Acacia heamatoxylon* trees. This will be the responsibility of the developer.

Construction phase

- Implement the eradication programme for invasive species in terms of the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983). This will have to be done by the contractor and monitored by the ECO.
- Institute the rehabilitation of areas as soon as the construction activity allows it. The sooner rehabilitation starts, the more beneficial it will be for the total environment. This will have to be done by the contractor and monitored by the ECO.
- Implement the plan to prevent veldt fires in the adjoining land. Establish firebreaks in terms of the requirements and conditions of the National Veldt and Forest Fires Act (Act No. 101 of 1998). Fire-fighting programs must adhere to the by-laws of the Local Municipality. This will have to be done by the contractor and monitored by the ECO.
- Implement the plan for the preservation of the *Acacia erioloba* and *Acacia heamatoxylon* trees. This will be the responsibility of the contractor to be monitored by the ECO.

Operational phase

- Implement the rehabilitation plan for disturbed areas. Ensure that rehabilitation is in accordance with the above-mentioned criteria. This will be the responsibility of the Developer after construction has been completed.
- Continue with invader eradication. This will be the responsibility of the Developer after

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- construction has been completed.
- Maintain the habitats of indigenous vegetation by implementing measures to ensure that the inhabitants of the area do not disturb the vegetation in open areas. This will be the responsibility of the Developer after construction has been completed.
- The big *Acacia erioloba* and *Acacia heamatoxylon* trees that were incorporated in the design of the development, should not be disturbed in any way. This will be the responsibility of the Developer after construction has been completed.

FAUNA

Pre-construction phase

- Develop a management plan with CLEAR instructions to ensure that the least disturbance of fauna will take place during the last two phases of the project. The principle of NO disturbance of animal life must be the rule. This will be the responsibility of the developer to be executed by the contractor and monitored by the ECO.

Construction phase

- Implement the management plan to ensure that the least disturbance of fauna will occur. This will have to be done by the contractor and monitored by the ECO.

Operational phase

- Maintain management plan for the preservation of fauna. This will be the responsibility of the developer after construction has been completed.

1.7 AIR QUALITY

Pre-construction phase

- Plan for the re-vegetation of areas where vegetation has been disturbed. This will be the responsibility of the developer to be executed by the contractor and monitored by the ECO.
- Plan to impose a speed limit of 20 km/h on vehicles using all non-surfaced roads in order to curb dust. This will have to be done by the contractor and monitored by the ECO.
- Plan for the implementation of rehabilitation as described in previous sections of this management plan. This will be the responsibility of the developer to be executed by the contractor and monitored by the ECO.
- Ensure that contractors' contracts contain clauses with their responsibilities with regard to possible losses incurred from fires originating from their contract areas. They will be held responsible for damages in the case of a fire spreading from their site.

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- Plan to ensure that NO refuse is burnt. This will be the responsibility of the developer to be executed by the contractor and monitored by the ECO.

Construction and operational phases

- Implement the measures devised in the pre-construction phase by rehabilitating as soon as possible. This will be the responsibility of the developer to be executed by the contractor and monitored by the ECO.
- Enforce the 20 km/h speed regulations. This will have to be done by the contractor and monitored by the ECO.
- No refuse may be burnt on site. This will have to be done by the contractor and monitored by the ECO.

1.8 NOISE

Pre-construction phase

- Plan to ensure that construction vehicles are fitted with proper noise reduction fittings such as silencers. This will have to be done by the contractor and monitored by the ECO.

Construction and Operational phase

- Implement the measures devised in the pre-construction phase. This will have to be done by the contractor and monitored by the ECO.
- Normal working hours are between 08h00 and 17h00 (Mondays to Saturdays). No work will be allowed on Sundays. This will have to be done by the contractor and monitored by the ECO.

1.9 ARCHAEOLOGY

If any artefacts of archaeological significance are found during any of the project phases, it must immediately be reported to the SAHRA within 48 hours and all work on the site must be stopped and the area marked and fenced off until proper investigation by that body has been completed. This will have to be done by the contractor and monitored by the ECO.

2. SOCIO ECONOMIC FACTORS

It will be imperative that the project must be managed throughout its entire life cycle. This will ensure that the impacts remain positive. Neglect will lead to environmental deterioration. This will be the responsibility of the developer.

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2.1 CULTURAL SITES

As there are no sites of cultural significance, no management measures are necessary.

2.2 AESTHETICS

Pre-construction phase

- ❖ Plan to / for:
 - Implement proper maintenance of all areas on the property that will help to enhance the aesthetics of the site. This will be the responsibility of the developer after construction has been completed.

Construction and Operational phase

- Implement the steps described in the pre-construction phase. This will be the responsibility of the developer after construction has been completed.

2.3 OTHER SOCIO-ECONOMIC FACTORS

Pre-construction phase

- Plan the project in such a way that optimal use is made of local labour. All labour practices must conform to the rules and regulations of the Occupational Health and Safety Act, 85 of 1993. This will be the responsibility of the developer to be executed by the contractor and monitored by the ECO.
- Devise a management plan for the project as a whole to ensure that the environmental issues can be addressed as described in this report. This will be the responsibility of the developer.
- Ensure that the management steps concerning the construction phase of the project are part of the construction contracts. This will be the responsibility of the developer to be monitored by the ECO.
- Ensure that all the people involved in the project are aware of the implications of non-compliance. This will be the responsibility of the developer to be monitored by the ECO.
- It is imperative to devise a set of rules that must form part of the overall management strategy of the development. These rules must provide for all the issues raised in this document with regard to sound environmental practices as well as with regard to good house keeping. This will be the responsibility of the developer to be monitored by the ECO.
- Plan for solid waste storage and disposal. All solid waste generated during all the

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phases of the project will be stored on site and disposed of only at a suitably licensed site in accordance with the stipulations of the National Environmental Act, 1998 (Act No. 107 of 1998, as amended). This will be the responsibility of the developer and contractors, to be monitored by the ECO.

- Plan to ensure that the transportation, storage and handling of hazardous materials on site conforms to the rules and regulations stipulated in terms of the Hazardous Substances Act, No. 15 of 1973. This will be the responsibility of the developer to be monitored by the ECO.
- Plan to implement all the instructions and mitigation measures contained in the specialists reports. This will be the responsibility of the developer to be monitored by the ECO.

Construction phase

- Utilise local labour optimally. Ensure that all labour practices conform to the rules and regulations of the Occupational Health and Safety Act, 85 of 1993. This will be the responsibility of the developer and contractors, to be monitored by the ECO.
- Solid waste storage and disposal. All solid waste generated during all the phases of the project will only be stored on site temporarily and disposed of at a suitably licensed site in accordance with the stipulations of the National Environmental Act, 1998 (Act No. 107 of 1998, as amended). This will be the responsibility of the developer and contractors, to be monitored by the ECO.
- Ensure that the transportation, storage and handling of hazardous materials on site conforms to the rules and regulations stipulated in terms of the Hazardous Substances Act, No. 15 of 1973. This will be the responsibility of the developer to be monitored by the ECO.
- Enforce management steps with regard to provisions in contractor contracts. This will be the responsibility of the developer to be monitored by the ECO.
- Install all services as planned and described in the various reports mentioned in this document. This will be the responsibility of the developer and the contractors, to be monitored by the ECO.

Operational phase

- Maintain all infrastructures in an environmentally responsible manner. This will be the responsibility of the developer after construction has been completed.
- All solid waste generated during this phase of the project will only be stored on site temporarily and disposed of at a suitably licensed site in accordance with the stipulations of the National Environmental Act, 1998 (Act No. 107 of 1998, as amended). This will be the responsibility of the Ga-Segonjana Local Municipality.

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2.4 SITE SPECIFIC MITIGATION MEASURES FOR THE CONSTRUCTION PHASE

2.4.1 Stockpiles

- All stockpiled material must be easily accessible and stored without any environmental damage to adjacent grasslands/farmlands.
- All temporarily stockpiled material must be stockpiled in such a way that the spread of materials are minimised.
- The stockpiles may only be placed within the demarcated areas - the location of which must be approved by the EO or ECO.
- The contractor must avoid vegetated areas that will not be cleared.
- Storm water run-off from the stockpile sites and other related areas must be directed into the storm water system with the necessary pollution prevention measures such as silt traps and may not run freely into the immediate and surrounding environments.
- Stockpiles are to be stabilised if signs of erosion are visible.

2.4.2 Oil and chemicals

- The contractor must provide **method statements** for the "handling & storage of oils and chemicals", "fire", and "emergency spills procedures".
- These substances must be confined to specific and secured areas within the contractor's camp, and in a way that does not pose a danger of pollution even during times of high rainfall. These areas must be imperviously bunded with adequate containment (at least 1.5 times the volume of the fuel) for potential spills or leaks
- High Drip trays (minimum of 10cm deep) must be placed under all vehicles that stand for more than 24 hours. Vehicles suspected of leaking must not be left unattended, drip trays must be utilised.
- The surface area of the drip trays will be dependent on the vehicle and must be large enough to catch any hydrocarbons that may leak from the vehicle while standing.
- The depth of the drip tray must be determined considering the total amount / volume of oil in the vehicle. The drip tray must be able to contain the volume of oil in the vehicle.
- Spill kits must be available on site and in all vehicles that transport hydrocarbons for dispensing to other vehicles on the construction site. Spill kits must be made up of material/product that is in line with environmental best practice (SUNSORB is a

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recommended product that is environmentally friendly).

- All spilled hazardous substances must be contained in impermeable containers for removal to a licensed hazardous waste site, (this includes contaminated soils, and drenched spill kit material).

2.4.3 Cement

- The contractors must provide and maintain a **method statement** for "cement and concrete batching". The method statement must provide information on proposed storage, washing & disposal of cement, packaging, tools and plant.
- The mixing of concrete must only be done at specifically selected sites on mortar boards or similar structures to contain run-off into soils rocky outcrops, streams and natural vegetation.
- Cleaning of cement mixing and handling equipment must be done using proper cleaning trays.
- All empty containers must be stored in a dedicated area and later removed from the site for appropriate disposal at a licensed facility.
- Any spillage that may occur must be investigated and remedial action must be taken immediately.
- The visible remains either of concrete, solid, or from washings, must be physically removed immediately or disposed of as waste to a registered landfill site.
- Cement batching areas must be located in an area where residues are contained and that the location does not fall within storm water channels.

2.4.4 Dangerous and Toxic Materials

(Provision of storage facilities)

- Materials such as fuel and oil must be sealed and stored in bermed areas or under lock and key, as appropriate, in well-ventilated areas.
- Sufficient care must be taken when handling these materials to prevent pollution. Training on the handling of dangerous and toxic materials must be conducted for all staff prior to the commencement of construction.
- In the case of pollution of any surface or groundwater, the Regional Representative of the **Department of Water Affairs (DWA)** must be informed immediately.
- Storage areas must display the required safety signs depicting "no smoking", "No Naked lights" and "Danger" containers must be clearly marked to indicate contents as well as safety requirements.
- The contractor must supply a **method statement** for the storage of hazardous materials.

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- Material Safety Data Sheets (MSDS) must be prepared for all hazardous substances on site and supplied by the supplier where relevant. MSDS's must be updated as required.

2.4.5 Storage of fuels and oils

- The contractors must provide and maintain a **method statement** for "Fuel tanks and refuelling procedures".
- Fuel storage tanks on the site must be on an impervious surface that is bunded and able to contain at least 110% of the volume of the tanks. The filler tap must be inside the bunded area where possible and the bund wall must not have a tap or valve.
- A Flammable Liquid License must be obtained for diesel volumes greater than 200 litres.
- Environmental Authorisation is required for volumes greater than 80 000 litres
- Fuel storage tanks must be located in a portion of the construction camp where they do not pose a high risk in terms of water pollution (i.e. they must be located away from water courses).
- Fuel storage tanks must be placed so that they are out of the way of traffic, so that the risk of the tanks being ruptured or damaged by vehicles is minimised.

2.4.6 Use of dangerous and toxic materials

- The contractor must keep the necessary materials and equipment on site to deal with spills/ fire of the materials present should they occur.
- The contractor must set up a procedure for dealing with spills/ fire, which will include notifying the ECO and the relevant authorities prior to commencing with construction. These procedures must be developed with consultation and approval by the appointed ECO.
- A record must be kept of all spills and the corrective action taken.

2.4.7 Toilets and ablution facilities

- The contractor is responsible for providing all sanitary arrangements for his and the sub-contractors team. A minimum of one chemical toilet must be provided per 15 persons.
- Sanitary arrangements must be to the satisfaction of the ECO and the local authority. Toilets must be of the chemical type.
- The contractor must keep the toilets in a clean, neat and hygienic condition. The contractor must supply toilet paper at all toilets at all times. Toilet paper dispensers must be provided in all toilets. The contractor must ensure that all toilets are cleaned and emptied before the builders' or other public holidays.
- Toilets provided by the contractor must be easily accessible and a maximum of 50m from the

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works area to ensure they are utilised. All toilets will be located within the contractor's camp. Should toilets be needed elsewhere, their location must first be approved by the ER, EO or ECO.

- The contractor must ensure that toilets move with the labour force.
- Toilets out on site must be secured to the ground and have a sufficient locking mechanism operational at all times.

2.4.8 Waste management

- The contractors must provide and maintain a **method statement** for "solid waste management". The method statement must provide information on proposed licensed facility to be utilised and details of proposed record keeping for auditing purposes.
- Waste must be separated into recyclable and non-recyclable waste, and must be separated as follows:
 - **Hazardous waste:** including (but not limited to) old oil, paint, etc,
 - **General waste:** including (but not limited to) construction rubble.
- Any illegal dumping of waste must not be tolerated, this action will result in a fine and if required further legal action will be taken. This aspect must be closely monitored and reported on; proof of legal dumping must be able to be produced on request.
- Bins must be clearly marked for ease of management.
- All refuse bins must have a lid secured so that animals cannot gain access.
- Sufficient closed containers must be strategically located around the construction site to handle the amount of litter, waste, rubbish, debris, and builder's waste generated on the site.
- Subcontractor(s) contracts must contain a clause to the effect that the disposal of all construction-generated refuse / waste to an officially approved dumping site is the responsibility of the subcontractor in question and that the subcontractors are bound to the management activities stipulated in this EMP. Proof of this undertaking must be issued to the ECO.
- All solid and chemical waste that is generated must be removed and disposed of at a licensed waste disposal site. The contractor is to provide proof of such to the EO and ECO.
- Chemical containers and packaging brought onto the site must be removed for disposal at a suitable site.
- A skip, with a cover, must be used to contain refuse from campsite bins, rubble and other

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construction material.

2.4.9 Dust

- The contractors must provide and maintain a method statement for "dust control". The **method statement** must provide information on the proposed source of water to be utilised and the details of the licenses acquired for such usage.
- **Potable water must, wherever possible, not be used as a means of dust suppression**, and alternative measures must be sourced. The use of 'grey' water must be investigated as an alternative. The contractor will be responsible to source this water and obtain the required approvals to utilise this water for the purpose of dust suppression.
- The construction camp must be watered during dry and windy conditions to control dust fallout.
- Dust production must be controlled by regular watering of roads and work areas, should the need arise.
- At the end of construction, the site camp must be fully rehabilitated by removing the temporary surface, ripping the area to loosen the soil and the area must be re-vegetated with local indigenous vegetation only, according to the landscape development plan for the project.
- All vehicles transporting material upgrading material (e.g. soil, rubble etc.) must be covered with a tarpaulin, and speed limits of 20 km/h must be adhered to.
- Excessive dust conditions must be reported to the ECO.
- Regular monitoring of dust fallout must be carried out and the records kept on site. Baseline dust measures must be sampled and approved by the ER and ECO prior to the commencement of construction activities.
- All forms of dust pollution must be managed in terms of the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965)

2.4.10 Workshop equipment, maintenance and storage

- The contractors must provide and maintain a **method statement** for "workshop maintenance and cleaning of plant".
- Leaking equipment must be repaired immediately or be removed from site to facilitate repair. All potentially hazardous and non-degradable waste must be collected and removed to a registered waste site.
- Cleaning and remediation must be done with products that are in line with best environmental practice.
- A **method statement** is required from the Contractor, tendering for the project to show procedures for dealing with possible emergencies that can occur, such as fire and

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accidental leaks and spillage.

- The Contractor must be in possession of an emergency spill kit that is complete and available at all times on site. The Contractor must ensure that senior and other relevant members of the workforce are trained in dealing with spills by using emergency spill kits.
- The following must be applied:
 - All contaminated soil shall be removed and disposed of as hazardous waste at a registered facility or placed in containers to be taken to one central point where bio-remediation can be done. (Bio-remediation should only be an option if an Environmental Authorisation has been issued)
 - A specialist Contractor shall be used for the bio-remediation of contaminated soil where the required remediation material and expertise is not available on site.
 - All spills of hazardous substances must be reported to the ESO, EO, ER or ECO.
- The contractor must comply with the regulations of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

2.4.11 Noise

- In terms of noise impact for various increases over the ambient, the National Noise Regulations define an increase of 7dB as "disturbing". Noise levels during construction must therefore be kept within 7dB of the baseline data.
- All construction vehicles must be in a good working order to reduce possible noise pollution.
- Noisy activities must be reserved for daytime hours.

2.4.12 Fires

- The contractors must provide and **maintain a method statement** for "fires", clearly indicating where and for what fires will be utilised plus details on the fuel to be utilised
- Absolutely no burning of waste is permitted.
- Fires will only be allowed in facilities especially constructed for this purpose within fenced Contractor's camps. Wood, charcoal or anthracite are the only fuels permitted to be used for fires. The contractor must provide sufficient wood (fuel) for this purpose.
- Fires within the designated areas must be small in scale so as to prevent excessive smoke being released into the air.

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- The contractor must designate a smoking area for labour force so as to prevent unanticipated incidents of veldt fires.
- No wood is to be collected, chopped or felled for fires from private or public property as well as from no-go or sensitive areas within the site and any surrounding natural vegetation.

2.4.13 Erosion and sedimentation

- Surface water or storm water must not be allowed to concentrate, or to flow down cut or fill slopes routes without erosion protection measures being in place.
- It must be ensured that storm water channels do not discharge straight down the contours. These must be aligned at such an angle to the contours that they have the least possible gradient.
- To reduce the loss of material by erosion, the contractor must ensure that disturbance on site is kept to a minimum. The contractor is responsible for rehabilitating all eroded areas in such a way that the erosion potential is minimised after construction has been completed.
- All disturbed areas will require rehabilitation must be mulched to encourage vegetation re-growth. Mulch used must be free from alien seed.
- These areas must be cordoned off so that vehicles or construction personnel cannot gain access to these areas.

2.4.14 Fauna

- All activities on site must comply with the regulations of the Animal Protection Act, 1962 (Act No. 71 of 1962)
- All construction workers must be informed that the intentional killing of any animal is not permitted as faunal species are a benefit to the environment. Poaching is illegal and it must be a condition of employment that any employee caught poaching will be dismissed. Employees must be trained on how to deal with fauna species as intentional killing will not be tolerated. In the case of a problem animal e.g. a large snake, a specialist must be called in to safely relocate the animal if the EO or ECO is not able to.
- Environmental induction training and awareness must include aspects dealing in safety with wild animals into and on site. Focus on animals such as snakes and other reptiles that often generate fear by telling workers how to move safely away and to whom to report the sighting. Workers should also be informed where snakes most often hide so that they can

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be vigilant when lifting stones, etc.

2.4.15 Flora

- The contractor must rehabilitate the construction camp and any other disturbed areas once construction activities have terminated. Compacted areas will be ripped and mulched in order to ensure recovery of the natural vegetation cover. A method statement must be provided and maintained by the contractor.
- The large specimens of *Acacia erioloba* and *Acacia heamatoxylon* trees must be marked and the trees to be protected must be clearly marked. This will be the responsibility of the developer. He must appoint a suitably qualified ecologist and the latter must liaise with the relevant competent authority.
- Once activities on site are complete, rehabilitation of un-built areas must be undertaken in order to restore the aesthetic & ecological value of the area.
- **No open fires shall be allowed on site under any circumstances**, fires will only be permitted in adequate facility within the crew camp, National Forest Act, 1998 (Act No. 84 of 1998).

2.4.16 Heritage

- In terms of the National Heritage Act, 1999 (Act No. 25 of 1999), construction personnel must be alert and must inform the local heritage agency should they come across any findings of heritage resources within 48 hours.
- Should any archaeological artefacts be exposed during site activities, work on the area where the artefacts were found must cease immediately and the ECO must be notified within 48 hours.
- Under no circumstances must archaeological artefacts be removed, destroyed or interfered with.

2.4.17 Crime, safety and security

- No site staff, other than security personnel and skeleton staff will be housed on site. Security personnel and skeleton staff must be supplied with adequate protective clothing, ablution facilities, water and refuse collection facilities, facilities for cooking and heating so that open fires are not necessary.
- The site and crew are to be managed in strict accordance with the Occupational Health

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and Safety Act, 1993 (Act No. 85 of 1993) and the National Building Regulations.

- The contractor must ensure that all emergency procedures are in place prior to commencing work. Emergency procedures must include (but not be limited to) fire, spills, contamination of the ground, accidents to employees, use of hazardous substances and materials, etc.
- The contractor must ensure that lists of all emergency telephone numbers/contact persons are kept up to date and that all numbers and names are posted at relevant locations throughout the construction site.
- The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. The contact details of this emergency centre, as well as the police and ambulance services must be available at prominent locations around the construction site and the construction crew camps.

2.4.18 Visual Impact

- Rubble and litter must be removed every two weeks (or more often as the need arises) and be disposed of at a registered landfill.
- The ECO should comment on the visual impact as part of the ECO's monitoring requirements.

2.4.19 Geotechnical

- All trenches and excavation works must be properly backfilled and compacted according to specifications given in sub-clause 5.2.4. Of SABS 1200DA.
- Mechanical methods of rock breaking will have noise and dust impacts that must be managed. **Method Statements** for chemical breaking must be provided by the ER.

2.4.20 Hydrology

- Increased run-off during construction must be managed using berms and other suitable structures as required to ensure flow velocities are reduced; this must be done in consultation with the Resident engineer as well as the ECO.
- In the event of pollution caused as a result of construction activities, the contractor, according to section 20 of the National Water Act, 1998 (Act No. 36 of 1998) is to be responsible for all costs incurred by organisations called to assist in pollution control and/or to clean up polluted areas.

BASIC ASSESSMENT REPORT

- The contractor must ensure that excessive quantities of sand, silt and silt-laden water do not enter the storm water system. Design of the storm water channel must ensure that the local and surrounding natural systems are not negatively impacted. Appropriate measures, e.g. erection of silt traps, or drainage retention areas to prevent silt and sand entering drainage or watercourses must be taken. These measures must be reviewed and audited by the ECO.
- No wastewater may run freely into any naturally vegetated areas. Run-off containing high sediment loads must not be released into drainage channels.
- Approval must be obtained from DWAF for any activities that require authorisation in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998).

2.5 MONITORING, AUDITING AND REPORTING

It is the responsibility of the development's project team or their delegate to ensure that regular monitoring of environmental issues addressed in this management plan is undertaken. The applicant is responsible for the monitoring of the infrastructure that is providing services to individual stands.

Site inspections to determine maintenance needs during the operational phase are imperative for good house keeping.

Internal environmental audits must be undertaken at regular monthly intervals throughout the construction phase to ensure compliance.

The applicant will be responsible for maintaining a database of all records pertaining to the environment for the study area.

All incidents such as spills of toxic or any other substance that may negatively affect the environment must be reported to the relevant authorities.