DRAFT BASIC ASSESSMENT

The proposed expansion of an existing cemetery as well as The construction of a new cemetery Kakamas, Northern Cape Province

Applicant: Kai !Garib Municipality
MDA Ref No: 40809
Date: July 2019

Town & Regional Planners,
Environmental & Development
Consultants

Physical Address: 9 Barnes Street,
Westdene, Bloemfontein, 9301
Postal Address: P.O. Box 100982,
Brandhof, 9324
Tel: 051 447 1583, Fax: 051 448 9839
E-mail: admin@mdagroup.co.za

the denc

Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

Private Bag X6102, Kimberley, 8300, Metlife Towers, T-Floor, Tel: 053 807 7300, Fax: 053 807 7328

Project applicant:			
Business reg. no. /ID. no.:			
Contact person:			
Postal address:			
Telephone:		Cell:	
E-mail:		Fax:	

Prepared by:

Environmental Assessment Practitioner/Firm:			
Business reg. no. /ID. no.:			
Contact person:			
Postal address:			
Telephone:		Cell:	
E-mail:		Fax:	

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File Reference Number:	
Application Number:	
Date Received:	

Basic Assessment Report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 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. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. 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.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. 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.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

SECTION A: ACTIVITY INFORMATION

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

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. ACTIVITY DESCRIPTION

a) Describe the project associated with the listed activities applied for

It was determined that the existing graveyard in the nearby area is almost full and that additional burial sites are required.

The proposed project entails the:

a) expansion of the existing cemetery at Kakamas
b) construction of a new cemetery at Kakamas

Please refer to Annexure A for more information on the localities of the position of the existing, as well as proposed new cemetery.

An access road will also be constructed (if necessary) towards the proposed new cemetery.

Associated activities to be undertaken on site includes but is not limited to the following:

- Construction of access road.
- The site will be cleared of vegetation and laid out so as to provide burial sites for the local community.
- Graves will be pre-excavated mechanically by use of excavators (TLB's) and backfilled for future excavation by hand
- Alien vegetation (except large trees that exists on site) should be removed from the site.
- Water supply to the site.
- Sanitation will be provided by means of a conservancy tank.
- An ablution facility that makes provision for disabled people and a store room is to be constructed.
- A fence on the perimeter of the site is to be constructed.
- Graves will be dug according to bookings received from undertakers. In other words provision will be made only for graves that are going to be used in a weeks' time and graves are not dug in advance for future use.
- Sufficient site drainage should be established.

It is estimated that an average of 5 burials will take place per week.

Construction of roads within the cemetery area comprise of 5m wide gravel

roads and 2m gravel walk ways.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN 734, 735 and 736	Description of project activity
Example: ***GN 734 Item xx xx): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.***	***A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river***
Regulation 327 of 2017, Listing Notice 1 (BAR)	
Activity 44: The expansion of cemeteries by 2 500 square metres or more	The expansion of the existing Kakamas cemetery
Activity 12: The development of (ii) infrastructure or structures with a physical footprint of 100 square metres or more where such development occurs (a) within a watercourse (c) if no development setback exits, within 32 m of a watercourse, measured from the edge of a watercourse Excluding (dd) where such development occurs within an urban area	Construction activities within 32 m of the water courses may possibly be undertaken.
Activity 19: The infilling or depositing of any material of more than 10 m^3 into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 m^3 from a watercourse	Construction activities within 32 m of the water courses may possibly be undertaken.
Activity 23: The development of cemeteries of 2500 square meters or more in size	It is suggested that a new cemetery is constructed
Activity 27: The clearance of an area of 1 ha or more, but less than 20 ha of indigenous vegetation, except	Vegetation will be removed as part of the construction of a cemetery.

where such clearance of indigenous vegetation is required for (i) undertaking of a linear activity or (ii) maintenance purposes undertaken in accordance with a maintenance management plan	
Activity 28: Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development will (ii) occur outside an urban area, where the total land to be developed is bigger than 1 ha.	The construction of a cemetery, outside an urban area will be undertaken as part of the project (if approved).

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 as required by Appendix 1 (3)(h), Regulation 2014.Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

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, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

NOTE:

Alternative 1Preferred - Expansion of the existing cemetery & Construction of a new cemetery

- It is proposed that the existing cemetery is expanded, by utilizing Erf 1279 and Plot 431. The construction of a new cemetery on Erf 1654 is also proposed.

Alternative 2Locality

- Another option is to expand the existing cemetery on Erf 1376.

Alternative 3Design & Layout

- The existing infrastructure associated with the existing cemetery was taken into consideration and therefore no design or layout alternatives were investigated.
- With the above in mind, no design / layout alternatives are seen as a feasible and / or reasonable alternative and will therefore not be discussed throughout the current document.

Alternative 4Technology

- As an alternative, the pre-excavation of graves and re-filling of graves (hard material removed at each of the new graves and filled with the removed material until the specific grave is required) were investigated. As part of this option, the construction of graves is to be done by hand during the operational phase.
- However, this option is not recommended due to the:
  - Type of soil (hard) encountered on site - the community members will not be able to dig the graves to the acceptable depths.
  - High number of burials per week.
- This option will thus not be discussed throughout the current document.

No-go Option

- Utilising the existing cemetery. The existing cemetery in the region is already more than 98% full. The existing facility is therefore inadequate for the need of the community and this option is thus not seen as a feasible / reasonable alternative.

a) Site alternatives

Alternative 1Preferred		
Description	Lat (DDMMSS)	Long (DDMMSS)
Proposed expansion of existing cemetery by utilizing Erf 1279 and Plot 431	28°46'52.70"S	20°37'33.56"E
Proposed construction of a new cemetery on Erf 1654	28°47'37.79"S	20°36'44.55"E

Alternative 2$_{Locality}$		
Description	Lat (DDMMSS)	Long (DDMMSS)
Proposed expansion of existing cemetery by utilizing Erf 1376	28°46'59.25"S	20°37'37.67"E

b) Lay-out alternatives

Alternative 1$_{Preferred}$		
Description	Lat (DDMMSS)	Long (DDMMSS)
The existing infrastructure associated with the existing cemetery was taken into consideration.	28°46'52.70"S and 28°47'37.79"S	20°37'33.56"E and 20°36'44.55"E
Alternative 3$_{Design\ \&\ Layout}$		
The existing infrastructure associated with the existing cemetery was taken into consideration and therefore no design or layout alternatives were investigated.		

c) Technology alternatives

Alternative 1$_{Preferred}$
• Graves will be pre-excavated mechanically by use of excavators (TLB's) and backfilled for future excavation by hand • Graves will be dug according to bookings received from undertakers. In other words provision will be made only for graves that are going to be used in a weeks' time and graves are not dug in advance for future use. • It is estimated that an average of 5 burials will take place per week.
Alternative 4$_{Technology}$
• As an alternative, the pre-excavation of graves and re-filling of graves (hard material removed at each of the new graves and filled with the removed material until the specific grave is required) were investigated. As part of this option, the construction of graves is to be done by hand during the operational phase. • However, this option is not recommended due to the: - Type of soil (hard) encountered on site - the community members will not be able to dig the graves to the acceptable depths. - High number of burials per week. • This option will thus not be discussed throughout the current document.

e) No-go alternative

Utilising the existing cemetery. The existing cemetery in the region is already more than 98% full. The existing facility is therefore inadequate for the need of the community and this option is thus not seen as a feasible / reasonable alternative.

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	**Size of the activity:**
Alternative 1$_{\text{Preferred – Expansion Section}}$	23 000 m^2
Alternative 1$_{\text{Preferred – New Cemetery Section}}$	40 000 m^2
Alternative 2$_{\text{Locality}}$	25 000 m^2

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

Alternative:	**Size of the site/servitude:**
Alternative 1$_{\text{Preferred – Expansion Section}}$	49 000 m^2
Alternative 1$_{\text{Preferred – New Cemetery Section}}$	4 951 699 m^2
Alternative 2$_{\text{Locality}}$	26 000 m^2

4. SITE ACCESS

Alternative 1$_{\text{Preferred – Expansion Section}}$: Does ready access to the site exist?	YES	
Alternative 1$_{\text{Preferred – New Cemetery Section}}$: Does ready access to the site exist?		NO
If NO, what is the distance over which a new access road will be built		200 m

Describe the type of access road planned:

Dirt roads will be constructed.
Ample parking will be allowed for, with parking bays

Access to the existing cemetery already exists.

A new access road (length 200m, width 6m) will form part of the proposed new cemetery project.

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.

5. LOCALITY MAP

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

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;

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

6. LAYOUT/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:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. 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 report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 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.

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?		NO	
An application for subdivision and rezoning in terms of the Township Establishment in terms of SPLUMA as well as the municipal land use management scheme will be submitted by the applicant.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES		
The proposed project is a project by the **Local Municipality** and is required in order to improve service delivery to the area. The proposed project is in line with the Provincial Spatial Development Plans.			
(b) Urban edge / Edge of Built environment for the area	YES		
The project entails the expansion of an approved cemetery. The proposed new cemetery will be located adjacent to the existing, operational landfill site.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES		
The proposed project is in line with the vision of the Municipality (IDP and SDF), as it is a project by the Municipality itself.			
(d) Approved Structure Plan of the Municipality	YES		
The proposed project is in line with the vision of the Municipality (IDP and SDF), as it is a project by the Municipality itself.			

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES		
The proposed project will not compromise the integrity of the existing environmental management priorities for the area, should the contractors adhere to the conditions stipulated in this report, additional specifications to be provided, the EMPr as well as best practices. Specific measures to be implemented will include, but not limited to: - Stormwater measures - Erosion control - Limiting the removal of vegetation - Limiting the formation of dust - Monitoring groundwater and surface water for possible contamination thereof due to operational activities at the cemetery - Etc. Refer to the EMPr for more information on measures to be implemented. Note that the project is a Municipal initiative and therefore the proposed project will be in line with the integrity of the existing environmental management priorities for the area.			
(f) Any other Plans (e.g. Guide Plan)			Please explain
N/A			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?		NO	
An application for subdivision and rezoning in terms of the Township Establishment in terms of SPLUMA as well as the municipal land use management scheme will be submitted by the applicant. Note that the area is already included in the SDF.			

4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES		
The existing cemetery is already more than 98% full, therefore reaching its capacity. The existing facility is therefore inadequate for the need of the community, especially when the population growth in the area is taken into account. Therefore, the expansion of the cemetery & construction of a new cemetery is required to meet the needs of the community. The expansion of the existing cemetery as well as the construction of the new cemetery will provide new burial sites in close proximity to the people it will be serving.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES		
• **Electricity:** Yes: will connect to existing network • **Stormwater:** Yes: the existing infrastructure is adequate • **Drinking water:** Yes: will connect to existing network • **Sewer:** Yes: the conservancy tank will be serviced by the relevant municipality (i.e. the applicant) • **Roads:** Yes: will connect to the existing surfaced road Note: The Local Municipality is the Applicant, therefore a letter by the Municipality is not deemed necessary.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
The applicant for the proposed of the cemetery is the Municipality itself. The proposed project is provided for in the infrastructure planning of the said municipality.			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES		
The provision of basic services is part of a national programme. The proposed project entails the expansion of a cemetery & the construction of a new cemetery in order to deliver on the Municipality's mandate to deliver basic services to the residents.			

8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES		
The proposed project entails the expansion of an existing cemetery, as well as the construction of a new cemetery in close proximity to the existing cemetery as well as landfill site. Therefore, location factors favour the proposed land use.			
9. Is the development the best practicable environmental option for this land/site?	YES	NO	Please explain
The proposed project entails the expansion of an existing cemetery as well as the construction of a new cemetery. Both activities will be undertaken on property belonging to the Municipality, and is currently used for informal housing and 'kraals' for livestock keeping. Thus the area is disturbed by the activities currently undertaken on site. As an alternative, a new, larger cemetery can be constructed at another site. However, this option may be costly (financially, agriculturally as well as environmentally) as: • A new portion of land will have to be bought by the Municipality (note that the properties under assessment are owned by the Applicant). • It is possible that the new site will be used for formal agricultural purposes and therefore a loss of active agricultural land will be expected • As the proposed sites are in a degraded state (see ecological report), the site is suitable for the proposed developments.			

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES		

Negative impacts:

- Previous disturbed areas, as well as area currently utilised for informal housing and 'kraals' (for livestock keeping purposes) will be disturbed during the construction phase
- Erosion may occur during the construction phase
- Formation of dust may take place during the construction phase
- Visual impact will occur during the construction and operational phase

Positive impacts:

- The proposed project is considered essential to enable the Municipality to provide basic services to residents in the area
- This in turn will have a positive impact on the social, economic as well as environmental impacts of the area

The negative impacts expected during the construction phase of the proposed project can be minimised through the recommended mitigation measures as stipulated in this report, the EMPr as well as best practices.

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES		

It is suggested that future cemetery projects would also consider the expansion of existing cemeteries where possible, rather than the construction of new cemeteries as this will limit the impact on the environment and will be less costly than the construction of a new cemeteries and associated infrastructure.

The proposed project may result in the development of further cemeteries / expansion of the proposed project in this area over the long term. This precedent is not necessarily negative or undesirable.

12. Will any person's rights be negatively affected by the proposed activity/ies?		NO	
Community members will be positively affected during the operational phase as the proposed project will enable the Municipality with the opportunity to provide basic cemetery services to the area. Although an area to be incorporated into the cemeteries are currently used as informal housing and 'kraals' (for livestock keeping purposes) by local community members (as feeding grounds for their livestock), the properties to be developed belong to the Municipality (applicant). The cemeteries will be fenced off and therefore the proposed activities will not have a noteworthy negative effect on the community members that utilise the open veld for livestock farming activities.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		NO	
It is not anticipated that the proposed activity itself will have an effect on the 'urban edge'.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES		
The proposed project contributes to SIPS 6: Integrated Municipal Infrastructure Project.			
15. What will the benefits be to society in general and to the local communities?			Please explain
The proposed development of a cemetery will provide new burial sites for the society in general. • Employment opportunities during the construction phase. • Employment opportunities during the operational phase. • The availability of adequate burial sites for members from the local community.			

16. Any other need and desirability considerations related to the proposed activity?	
The site contains a large depression or pan in the centre / western portion of the site. The pan functions in the form of groundwater recharge. It therefore still performs an important ecosystem function although highly degraded. It will also be unfeasible to include the pan within the cemetery layout as graves will be subjected to annual flooding. The condition of the pan can be improved and it can be incorporated into the layout to improve the aesthetic feel of the cemetery. A need therefore exists to exclude the pan as well as a 15 m buffer around the pan from the cemetery layout and rather incorporate the pan as part of the aesthetic feel of the cemetery	
17. How does the project fit into the National Development Plan for 2030?	
The proposed project will provide the much needed burial sites during the operational phase thereof. This will have a positive impact on the socio-economics of the area.	

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

Section 23 of NEMA (Act 107, 27 November 1998) reads as follows:

1. The purpose of this Chapter is to promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities.

2. The general objective of integrated environmental management is to -
   a. promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment.

   b. identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits and promoting compliance with the principles of environmental management set out in section 2;

   c. ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;

   d. ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;

   e. ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and

   f. identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.

3. The Director-General must coordinate the activities of organs of state referred to in section 24(1) and assist them in giving effect to the objectives of this section and such assistance may include training, the publication of manuals and guidelines and the co-ordination of procedures.'

With the above in mind, the following objectives were taken into consideration:

1. An application for environmental authorisation was submitted to the relevant environmental department.

2. Integration of various principles of environmental management were implemented in order to make decisions regarding the significant effect of the proposed project on the environment

3. Identified, predicted and evaluated the actual potential impact of the proposed project on the environment, the socio-economic conditions and heritage, as well as the consequences and alternatives and options for mitigation of activities. This was done to minimize the possible negative impacts on the environment and maximizing benefits to mankind.

4. Taken the effects of activities on the environment into consideration before actions are to be taken in connection with them.

5. A public participation process was followed.

6. Considered the environmental attributes in management and decision-making with reference to the environment.

7. Mitigation and management activities best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management were investigated.

8. The report follows the laws to identify, predict and evaluate the actual and potential impacts associated with the development.

9. Specialists investigated the site to determine baseline and to predict the impacts associated with the proposed project. The preferred alternative has been identified as the one that will have the least negative impact on the environment, as sensitive areas will be avoided as far as possible. In addition, already disturbed areas will be utilized as far as possible.

10. A public participation process was followed. Consideration of the 2014 EIA Regulations has been applied in this regards.

11. An EMPr is included, with mitigation measures that should be implemented during the planning, construction, operation and possible

decommissioning of the proposed project. These mitigation measures are in line with the environmental requirements and Best Practise Principles.

12. Relevant guidelines and procedures were used to produce this document. Therefore, relevant information is reflected, for sufficient co-governance to be implemented.

13. The proposed project provides for the needs of the applicant while ensure compliance with environmental management principles.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

Section 2 of NEMA (Act 107, 27 November 1998) reads as follows:

1. The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and—
   a. shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination;
   b. serve as the general framework within which environmental management and implementation plans must be formulated:
   c. serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment;
   d. serve as principles by reference to which a conciliator appointed under this Act must make recommendations; and
   e. guide the interpretation, administration and implementation of this Act, and any other law concerned with the protection or management of the environment.

2. Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.

3. Development must be socially, environmentally and economically sustainable.

4. a. Sustainable development requires the consideration of all relevant factors including the following:

   (i) That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;

   (ii) into account the limits of current knowledge about the consequences of decisions and actions; and

   (iii) that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

   (iv) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;

   (v) that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;

   (vi) that waste is avoided. or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;

   (vii) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;

   (viii) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;

   (ix) that a risk-averse and cautious approach is applied.

   b. Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

c. Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.

d. Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.

e. Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.

f. The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.

g. Decisions must take into account the interest, needs and values of all the interested and affected parties, and this includes recognizing all forms of knowledge, including traditional and ordinary knowledge.

h. Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.

i. The social, economic and environmental impacts of activities, including disadvantages and benefits must be considered, assessed and evaluated and decisions must be appropriate in the light of such consideration and assessment.

j. The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.

k. Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.

l. There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.

m. Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.

n. Global and international responsibilities relating to the environment must be discharged in the national interest.

o. The environment is held in public trust for the people. The beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.

p. The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.

q. The vital role of women and youth in environment management and development must be recognised and their full participation therein must be promoted.

r. Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.

The applicant of the proposed project took the following into consideration:

1. That the disturbance of ecosystems and loss of biological diversity are minimised and remedied by implementing the mitigation measures in this document, the EMPr as well as best practices.
2. Environmental management must be integrated
3. Adverse environmental impacts (if any) shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.
4. The participation of all interested and affected parties in environmental governance must be promoted by means of the public participation process that forms part of the basic assessment process.

5. Community wellbeing and empowerment must be promoted by providing employment opportunities during the construction as well as operational phase.
6. The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers will be respected and protected.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act, 1998 (Act 107 of 1998)	Proposed expansion and / or construction of a cemetery	NC DENC	1998
National Heritage Resources Act (Act No 25 of 1999)	Proposed expansion and / or construction of a cemetery	SAHRA	1999
National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004)	Proposed expansion and / or construction of a cemetery	NC DENC	2004
Environmental Conservation Act (Act 73 of 1989)	Conservation of the environment, by implementing best practices	DEA / NC DENC	1989
National Environmental Management Biodiversity Act, 2004 (Act 10 0f 2004)	Endangered / Vulnerable vegetation types and Protected Species (TOPS)	DEA / NC DENC	2004
Northern Cape Nature Conservation Act (Act 9 of 2009)(NCNCA)	Conservation of the environment, by implementing best practices	DEA / NC DENC	2009
National Forests Act (Act No. 84 of 1998) (NFA)	Conservation of protected trees (if any)	DAFF	1998
National Veld and Forest Fires Act, Act	Mitigation measures to be implemented in	DAFF	1998

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
101 of 1998 (NVFFA)	case of a fire		
NEM Laws Amendment Act Department (Act 25 of 2014)	Amended regulations for the Public Participation Process.	DEA / NC DENC	2014
Conservation of Agricultural Resources Act (Act 43 of 1983)	The re-zoning of agricultural land for the use of cemeteries	DAFF	1983
National Water Act, 1998 (Act 36 of 1998)	Activities in proximity to 32m from watercourses.	DWS	1998

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	NO
If YES, what estimated quantity will be produced per month?	m^3

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

The contractor will be responsible for the disposal of waste generated during the construction phase. The contractor will remove the construction waste and dispose thereof at a suitable authorized landfill site.

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

Solid waste disposal sites in Kakamas. Hazardous waste (if any) should be disposed of at a suitable authorized hazardous landfill site such as Holfontein.

Will the activity produce solid waste during its operational phase?	NO
If YES, what estimated quantity will be produced per month?	m^3

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

N/A

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

N/A

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

N/A

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 NEM:WA?		NO

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

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. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

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?		m^3
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:			
Telephone:		**Cell:**	
E-mail:		**Fax:**	

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

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?		NO
If YES, is it controlled by any legislation of any sphere of government?		NO

If YES, the applicant must 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:

- The emissions associated with the proposed activity can be described as general vehicle emissions and dust formation.
- Construction activities will be limited to day time hours, where possible.
- In addition, dust can also be seen as a potential issue during construction due to blasting activities.
- This will be temporary and the formation of dust will be controlled, when necessary.
- A blasting permit will be obtained before blasting activities is undertaken.
- Adjacent landowners will be notified of proposed blasting 24 hours prior to blasting activities.
- Generation of dust may also occur during general maintenance work, during the operational phase.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?		NO

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

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

Describe the noise in terms of type and level:

- Noise associated with the development activities will be from general vehicular activities as well as construction activities including blasting, when required.
- Heavy vehicles will be equipped with silencers.
- A blasting permit will be obtained before blasting activities is undertaken.
- The adjacent landowners will be notified of proposed blasting 24 hours prior to blasting activities.
- In addition, construction activities will be limited to day time hours, where possible.
- Additional noise may be generated during the operational phase when maintenance work is required.
- Noise levels will have to comply with the requirements as set out in the OSH Act.

13. WATER USE

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

Municipal	Water board	Groundwater	River, stream,	Other	The activity will

			dam or lake		not use water

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:		litres
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES	

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

An application to DWS (if necessary), for the impeding and / or alteration of beds / banks of water course(s) will be submitted in due course.

14. ENERGY EFFICIENCY

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

N/A

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

N/A

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 B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B 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

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province			Northern Cape Province
District Municipality			ZF Mgcawu District Municipality
Local Municipality			Kai !Garib Local Municipality
Ward Number(s)			3
Alternative 1Preferred – Expansion of existing cemetery	**Plot 431**	**Farm name and number**	Plot 431
		Portion number	Remainder
		SG Code	C036 000 700 000 431 000 00
	Erf 1279	**Farm name and number**	Erf 1279
		Portion number	Remainder
		SG Code	C036 000 600 001 279 000 00
Alternative 1Preferred – New Cemetery Section	**Erf 1654**	**Farm name and number**	Erf 1654
		Portion number	Remainder
		SG Code	C036 000 700 001 654 000 00
Alternative 2Expansion of existing cemetery	**Erf 1376**	**Farm name and number**	Erf 1376
		Portion number	Remainder
		SG Code	C036 000 600 001 376 000 00

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Plot 431 - Open Space Zone II
Erf 1279 - Open Space Zone II
Erf 1654 – Agricultural Zone I & Authority Zone I
Erf 1376 - Undetermined Zone

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

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

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Preferred Alternative 1Preferred - Expansion of existing cemetery:

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

Preferred Alternative 1 Preferred - Construction of new cemetery:

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

Alternative 2Expansion of existing cemetery:

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

2. LOCATION IN LANDSCAPE

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

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

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative 1Preferred -Expansion of existing cemetery:	**Alternative 1Preferred - Construction of new cemetery:**	**Alternative 2Expansion of existing cemetery:**
Shallow water table (less than 1.5m deep)	YES Close to water bodies	YES Close to water bodies	YES Close to water bodies
Dolomite, sinkhole or doline areas	NO	NO	NO
Seasonally wet soils (often close to water bodies)	YES Close to water bodies	YES Close to water bodies	YES Close to water bodies
Unstable rocky slopes or steep slopes with loose soil	NO	NO	NO

Dispersive soils (soils that dissolve in water)	NO	NO	NO
Soils with high clay content (clay fraction more than 40%)	NO	NO	NO
Any other unstable soil or geological feature	NO	NO	NO
An area sensitive to erosion	NO	NO	NO

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

4. GROUNDCOVER

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

Natural veld - good condition[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. SURFACE WATER

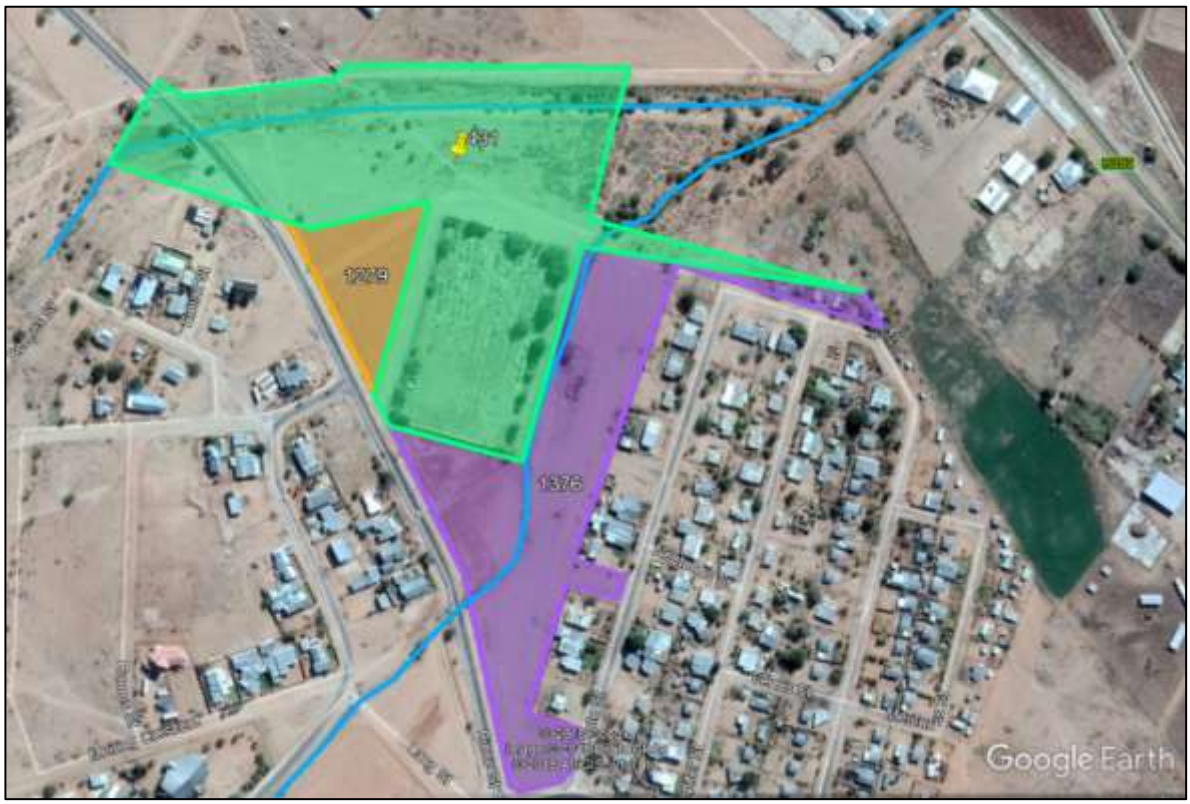
Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		NO
Non-Perennial River	YES	
Permanent Wetland		NO
Seasonal Wetland		NO
Artificial Wetland		NO
Estuarine / Lagoonal wetland		NO

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Proposed Graveyard Expansion:

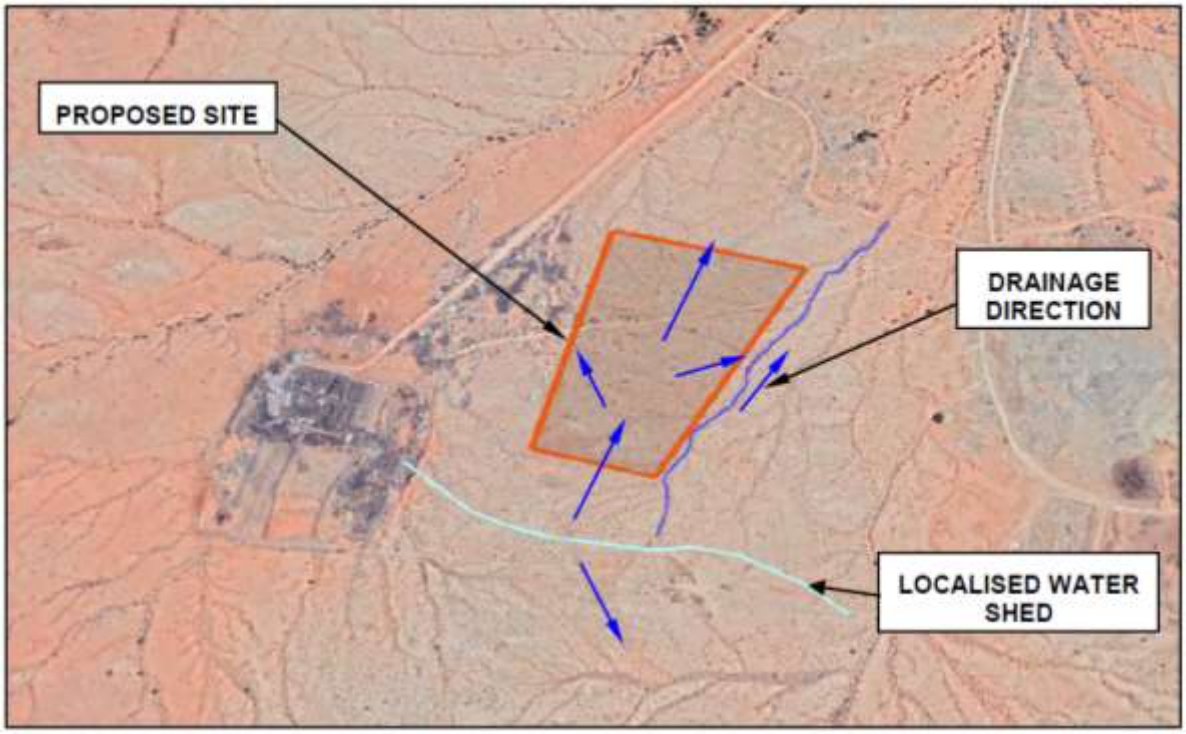
Two water channels are situated along the northern and eastern borders of the site and are clearly artificial but most likely modified natural drainage lines. Although artificial they still provide an important function in terms of water transportation. It would also be unfeasible to place grave sites in them as these would be periodically removed by flooding. This could also have detrimental impacts in terms of groundwater and surface water pollution. They should therefore be excluded from the graveyard layout. As long as they are excluded from the layout of the graveyard the impact should remain low. Furthermore, these water channels should be regarded as no-go areas and no construction activities including placing materials or waste within these systems.



Proposed New Graveyard Site:
Numerous drainage lines are situated on and around the site. These are all natural without any significant modification. Although these drainage lines are all relatively small, they will still function as storm water conduits. It would therefore be unfeasible to place grave sites in them as these would be periodically removed by flooding. These drainage lines should therefore be excluded from the site and should not form part of the graveyard layout. Furthermore, due to the ridge and slope of the site it would also likely be subjected to erosion. This should therefore be taken into consideration in the layout and placement of the graveyard. Adequate storm water management measures will therefore also be necessary in order to prevent erosion and also to manage the flow of surface runoff. Furthermore, these drainage lines should be regarded as no-go areas and no construction activities including placing materials or waste within these systems should be allowed.

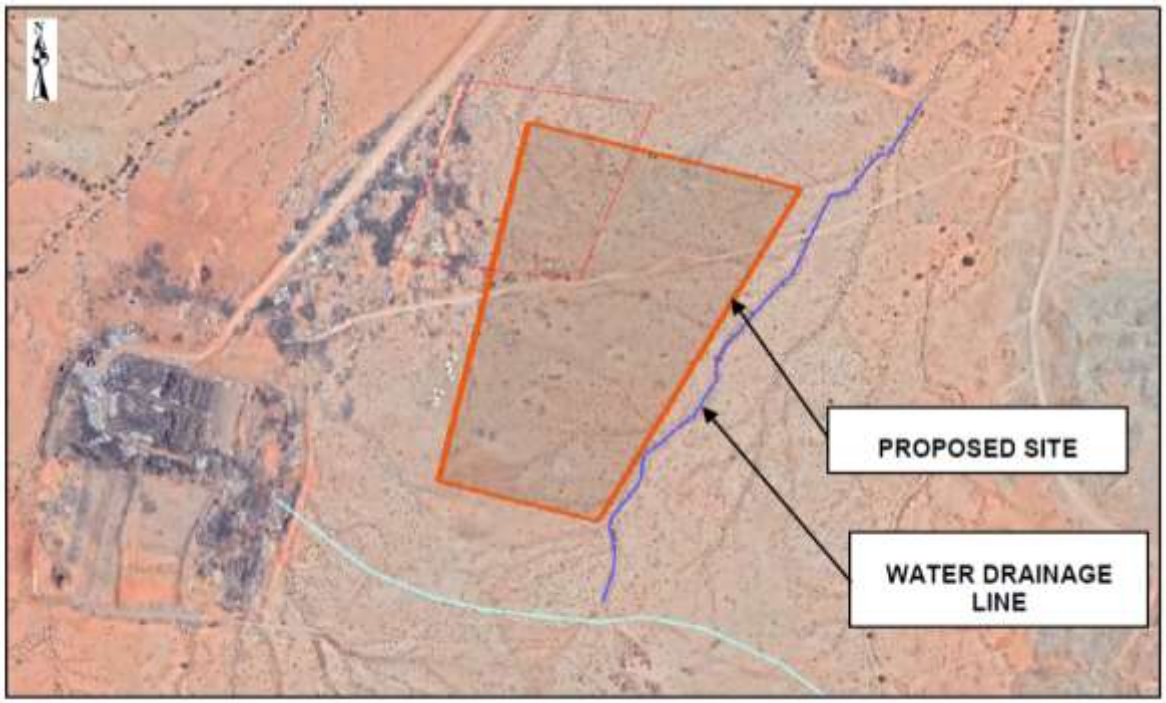
Geohydrological Report Summary - Proposed new cemetery:

The topographical height at the highest point in the area is 695 mamsl, from where water will drain in a north, north eastern and north western direction towards non perennial drainage lines that drains in a general northern direction towards the stormwater network, ultimately ending in the Orange River, approximately 4.5 km from the proposed site. The proposed site is situated close to the upper boundary of a localized water shed. The difference in height above mean sea level, from the highest to the lowest areas of the proposed site is approximately 5 m.



It is recommended that a buffer zone of 20m be maintained next to the drainage lines that are indicated in blue. It is recommended that the proposed site be moved 50m to the west in order to create a larger buffer zone between the water drainage line and the proposed site.

PLEASE NOTE THAT THE ABOVE WAS TAKEN INTO CONSIDERATION AND THEREFORE THE PROPOSED SITE HAS MOVED 50M TO THE WEST. PLEASE REFER TO APPENDIX A FOR MORE INFORMATION ON THE NEWLY PROPOSED LOCATION OF THE PROPOSED NEW CEMETERY SITE.



The risk of groundwater pollution is directly related to the nature of the activity. During the desk study, borehole census and the different phases of the geophysical survey, it was evident that gneiss outcrops are visible which increases the runoff. The runoff is inversely proportional to the infiltration. If the runoff accumulates in the lower lying areas, infiltration will occurs, it is assumed that water only percolates to about 3 m below ground level in the Kakamas area. Due to the presence of a relatively shallow impermeable gneiss intrusion that is underlying the cemetery, it is assumed that a well-managed cemetery will pose a minimal risk for groundwater pollution at the proposed project site. Other waste related activities like the solid waste site (SWS) and the waste water treatment works (WWTW) were observed in the area and therefore the combined effect should be monitored.

With the concentration of waste related activities (SWS, WWTW and cemetery) in the area it is recommended that a groundwater monitoring network be established with a minimum of three monitoring boreholes.

PLEASE NOTE THAT THE PROPOSED SITE HAS MOVED 50M TO THE WEST. PLEASE REFER TO APPENDIX A FOR MORE INFORMATION ON THE NEWLY PROPOSED LOCATION OF THE PROPOSED NEW CEMETERY SITE.

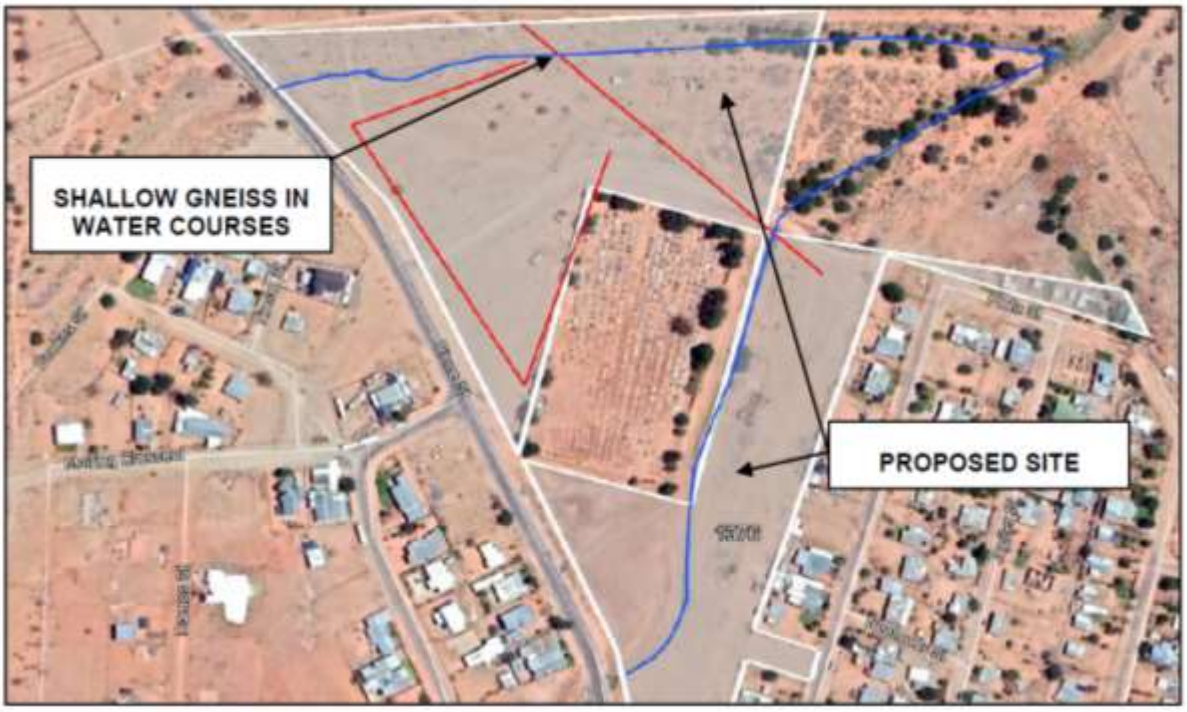
Geohydrological Report Summary:

Proposed expansion of existing cemetery:

The topographical height at the highest point in the area is 667 mamsl, from where water will drain in a north eastern direction towards non perennial drainage lines that leads to a stormwater network, ultimately ending in the Orange River, approximately 3 km from the project site.

Due to the fact that the project area is situated on a *poor aquifer* and the aquifer *vulnerability* is *least*, it can therefore be assumed that the aquifer has a *low susceptibility* for contamination.

It is recommended that a buffer zone of 20m be maintained next to the drainage lines that are indicated in blue on the map.



On average the groundwater level is relatively deep (assumedly 15 mbgl) which imply a relatively thick buffer between surface and groundwater.

From the magnetometer survey and the site visit it is evident that a shallow Gneiss intrusion is present in parts of the proposed site especially exposed in the water drainage courses of which two prominent coursed passes through the site.

From the abovementioned information a *low* risk for groundwater pollution is posed by the proposed expansion of the Cemetery in Kakamas.

It is recommended that a groundwater monitoring network be installed. At least one new monitoring borehole should be drilled and the existing borehole (BH1) should be rehabilitated and incorporated in the monitoring network.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that 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:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation

Informal residential[A]	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	Mountain, koppie or ridge
Heavy industrial [AN]	Railway line [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building
Office/consulting room	Airport [N]	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	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? Specify and explain:

N/A

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

Negative impact: No long term negative impacts anticipated, should the mitigation measures listed in the EMPr and this document, as well as best practices be implemented. Noise and dust formation may have a negative impact during the construction phase. However, all possible mitigation measures will be implemented to limit the above mentioned impacts may have on the residents. **Positive impact:** Cemetery will be located in close proximity to community members.

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

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		NO
Core area of a protected area?		NO
Buffer area of a protected area?		NO
Planned expansion area of an existing protected area?		NO
Existing offset area associated with a previous Environmental Authorisation?		NO
Buffer area of the SKA?		NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

NOTE: Please note that various non-perennial streams as indicated on the following maps are located on the proposed development properties:

Proposed expansion of the existing cemetery

Proposed new cemetery

7. CULTURAL/HISTORICAL FEATURES – MDA AWAITS REPORT FROM SPECIALIST

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? If YES, explain:		NO

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

NOTE:

Dr Lloyd Rossouw visited the site on the 4th of December 2018. No 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 were observed by him on site.

Dr Rossouw's contact details are as follows:
Palaeo Field Services
P.O. Box 38806
Langenhovenpark
Bloemfontein
9330
lloyd.rossouw@gmail.com

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 provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

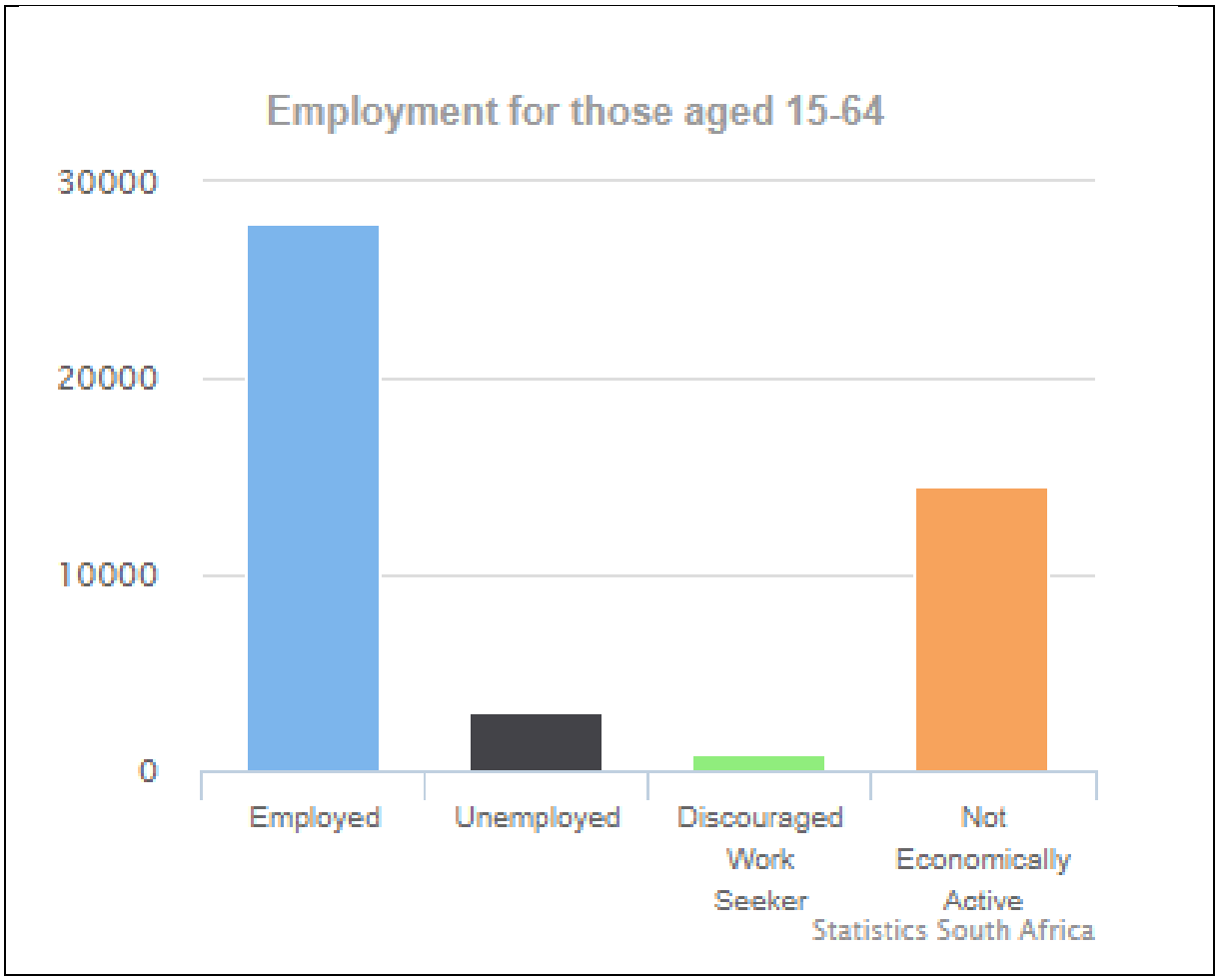
8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

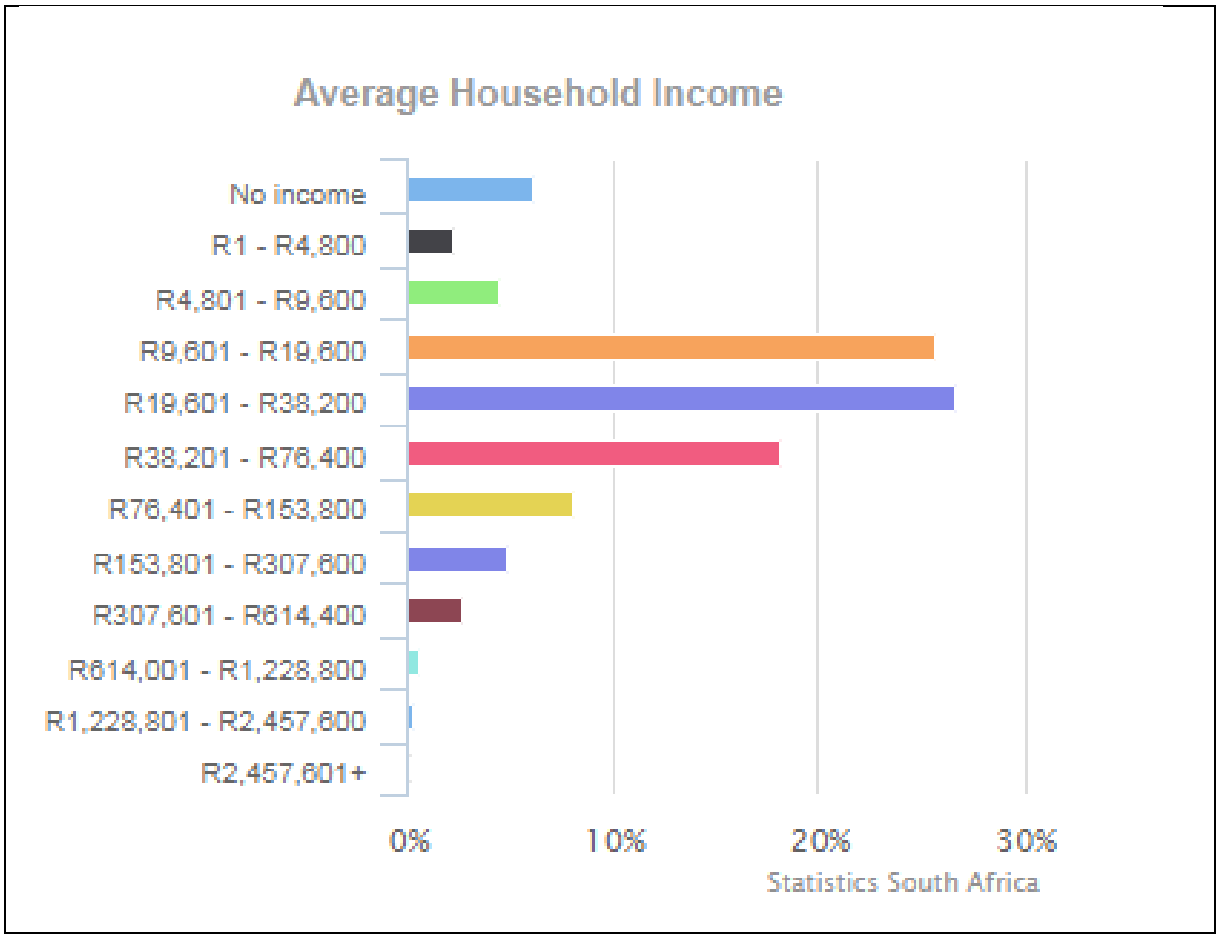
Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

NOTE: The following information was obtained from:
http://www.statssa.gov.za/?page_id=993&id=kai-garib-municipality

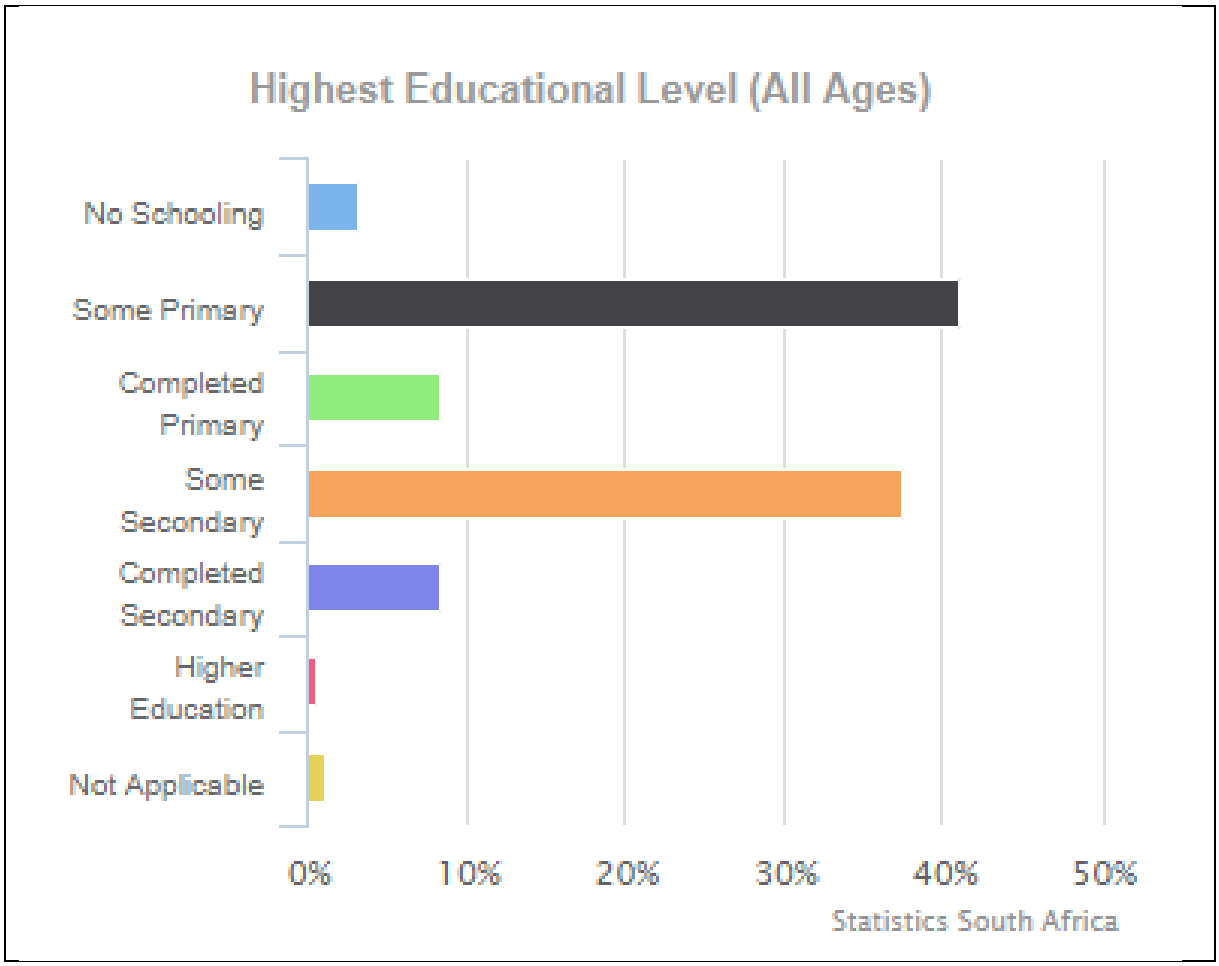
Level of unemployment:



Economic profile of local municipality:



Level of education:



b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	Unknown. The proposed project is a service delivery project.	
What is the expected yearly income that will be generated by or as a result of the activity?	N/A	
Will the activity contribute to service infrastructure?	YES	
Is the activity a public amenity?	YES	
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown, depends on contractor	
What is the expected value of the employment opportunities during the development and construction phase?	Unknown, depends on contractor	

What percentage of this will accrue to previously disadvantaged individuals?	Approximately 80%
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unknown
What is the expected current value of the employment opportunities during the first 10 years?	Unknown
What percentage of this will accrue to previously disadvantaged individuals?	Approximately 80%

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				**If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan**
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	

b) Indicate and describe the habitat condition on site

Habitat Condition	**Percentage of habitat condition class (adding up to 100%)**	**Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).**
Natural	10%	The sites are considered as largely transformed from the natural condition and notably degraded. This is mostly due to the clearing of the natural vegetation and the proximity to the surrounding urban area
Near Natural (includes areas with low to moderate level of alien invasive	10%	The vegetation type on the site is of Least Concern (LC) and the species diversity is low and dominated by pioneer, annual species. However, scattered specimens of

plants)		the protected *Nymania capensis* (Lantern Bush) and *Vachellia erioloba* (Camel Thorn) occur on the site and are considered to have a significant conservation value.
Degraded (includes areas heavily invaded by alien plants)	40%	The sites are bordered by both dense residential areas as well as peri-urban agri-industrial developments. Largely due to its urban setting the natural vegetation has already been largely transformed.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	40%	The majority of indigenous vegetation on the site has been transformed and the remaining vegetation is represented by scattered annual herbs and grasses with a few trees and shrubs remaining

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		**Aquatic Ecosystems**						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
	Endangered							
	Vulnerable							
	Least Threatened	YES				NO		NO

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

Graveyard Expansion:

According to Mucina & Rutherford (2006) the area consists of Bushmanland Arid Grassland (NKb 3). This vegetation type is currently listed as being of Least Concern (LC) under the National List of Threatened Ecosystems (Notice 1477 of 2009) (National Environmental Management Biodiversity Act, 2004). It is widespread and not currently subjected to any pronounced development pressures. Furthermore, the majority of the vegetation on the site has already been transformed. Consequently the conservation value of the site cannot be considered as significant.

The majority of indigenous vegetation on the site has been transformed and the remaining vegetation is represented by scattered annual herbs and grasses with a few trees and shrubs remaining. Some refuse- and rubble dumping is present. However, the rubble / litter are not extensive and the site contains numerous dilapidated fences which may have been utilised for farming activities.

Two water channels are situated along the northern and eastern borders of the site and are clearly artificial but most likely modified natural drainage lines. Although artificial they still provide an important function in terms of water transportation. It would also be unfeasible to place grave sites in them as these would be periodically removed by flooding. This could also have detrimental impacts in terms of groundwater and surface water pollution. They should therefore be excluded from the graveyard layout. As long as they are excluded from the layout of the graveyard the impact should remain low. Furthermore, these water channels should be regarded as no-go areas and no construction activities including placing materials or waste within these systems.

Two protected species remain as remnants on the site. These are the protected ***Nymania capensis*** (Lantern Bush) and ***Vachellia erioloba*** (Camel Thorn). Although not rare or endangered they are still considered to have a significant conservation value. Both would be beneficial to the landscaping of the graveyard and should be incorporated into the layout. Should this not be possible the necessary permits will have to be obtained to remove them.

New Graveyard:

The site still consists of natural vegetation but has been notably degraded by rubbish dumping in this area and wind-blown litter. The vegetation is dominated by a dwarf karroid shrub layer with a prominent succulent component and low, sparse grass component. Rubbish dumping is considered to have a significant impact on the vegetation.

Numerous drainage lines are situated on and around the site. These are all natural without any significant modification. These drainage lines should be excluded from the site and should not form part of the graveyard layout.

Furthermore, due to the ridge and slope of the site, the drainage lines would also likely be subjected to erosion. This should therefore be taken into consideration in the layout and placement of the graveyard. Adequate storm water management measures will be necessary in order to prevent erosion and also to manage the flow of surface runoff. Furthermore, these drainage lines should be regarded as no-go areas and no construction activities including placing materials or waste within these systems should be allowed.

Despite the degraded condition of the site the vegetation contains a high amount of protected species as well as a Red Listed species. These are *Sarcostemma viminale, Euphorbia gariepina, E. spinea, Aloe claviflora, Anacampseros albissima* and *A. namaquensis*. *Acanthopsis hoffmannsegiana* is listed as being Data Deficient – Insufficient information under the National Red List and this indicates that it may be classified as Threatened and is therefore considered of high conservation value.

It is recommended that the necessary permits be acquired and protected species on the site transplanted to adjacent areas where they will remain unaffected.

It is highly likely that several other species of conservation importance may also occur on the site. The portion of the site containing the highest abundance of protected species as well as a Red Listed species, the crest of the hill, is considered to have the highest conservation value. Furthermore, the crest of the hill consists of solid rocky outcrop and the excavation of gravesites here would be difficult. As a result, it is recommended that the crest of the ridge be excluded and that it be treated as a no-go area.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Kalahari Bulletin	
Date published	28 March 2019	
Site notice position	**Latitude**	**Longitude**
	Graveyard Expansion: 28°46'54.95"S **Proposed new cemetery:** 28°47'36.81"S	**Graveyard Expansion:** 20°37'31.49"E **Proposed new cemetery:** 20°36'41.81"E
Date placed	22 March 2019	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

NOTE:

Identification of possible IAPs includes:

- District Municipality: Manager
- Local Municipality: Manager
- Ward Councillor: Ward 3
- Dept. of Agriculture, Forestry and Fisheries
- Dept. of Water and Sanitation
- SAHRA
- Northern Cape Heritage
- Adjacent landowners

Site notices were placed on site.

Adjacent landowners were notified via mail drop / registered post.
Authorities were notified via registered post.

A legal notice was placed in Die Kalahari Bulletin on 28 March 2019.

A copy of the dBAR and fBAR will be provided to all the registered parties.

All registered parties will be given the opportunity to comment on the BAR documents.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Title, Name and Surname	Affiliation / Key stakeholder status	Contact details (tel number or e-mail address)
Department of Agriculture, Land Reform and Rural Development		Mr G.N. Esterhuysen Telephone: 054 337 8000 Facsimile: 054 337 8001 P.O. Box 52 Upington 8800
Department of Agriculture, Forestry & Fisheries		Ms Jacoline Mans P.O. Box 2782 Upington 8800 jacolinema@daff.gov.za 054 334 0030
ESKOM		Ms Andrea van Gensen Environmental Manager Land Development & Environment Northern Cape Operating Unit Eskom Holdings SOS Limited DSC Office Block 69 Memorial Road PO Box 606 Kimberley 8301
TELKOM		Ms H. Van den Heever Telkom Wayleave Operations Manager Facsimile: 051 401 6238 Tel: 051 401 6829 Private Bag X20700 Bloemfontein 9300 wayleacr@telkom.co.za
Department of Roads and Public Works: Northern Cape Province		PO Box 3132 Kimberley 8300 9-11 Stokroos Street Square Hill Park Kimberley 8301 053 839 2100

Title, Name and Surname	Affiliation / Key stakeholder status	Contact details (tel number or e-mail address)
		Mr I. Bulane Department of Roads and Public Works 072 086 6241 P.O. Box 3132 Kimberley 8300 leecha1@vodamail.co.za

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
The following party registered as an IAP: Triple D Farms Pieter Dykman P.O. Box 537 Kakamas 8870	A copy of the dBAR will be forwarded to all registered IAPs.

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR 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 the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person	Tel No	Fax No	e-mail	Postal address
Head of Department (Acting): Department of Roads And Public Works	Ms Ruth Palm				P.O. Box 3132 Kimberley 8301
HoD: Department of Agriculture & Land Reform: NC	Mr Wvd Mothibi				Private Bag X5018 Kimberley 8300
Department of Public Works: NC Property Manager					Private Bag X5002 Kimberley 8300
Ward Councilor: Ward 3		054 461 6700	054 467 6401		11th Avenue 9 Kakamas 8870 Private Bag X6 Kakamas 8870
Local Municipal Manager	Mr M Louw	054 461 6700	054 467 6401		11th Avenue 9 Kakamas 8870 Private Bag X6 Kakamas 8870
District Municipal Manager	Mr Abraham Vosloo	054 337 2800	054 337 2888	admin@zfm-dm.gov.za	Private Bag X6039 Upington 8800 Cnr Nelson Mandela Avenue &

Authority/Organ of State	Contact person	Tel No	Fax No	e-mail	Postal address
					Upington 26 Road Upington 8800
Chief Director: Northern Cape DWS	Mr Abe Abrahams	053 830 8800/6 7600 082 883 6741	Fax: (053) 831 4534	AbrahamsA@dws.gov.za	28 Central Road Beaconsfield KIMBERLY 8301 Private Bag X6101 KIMBERLEY 8300
Department of Agriculture, Forestry & Fisheries	Jacoline Mans		054 334 0030	jacolinema@daff.gov.za	P.O. Box 2782 Upington 8800
SAHRA		021 462 4509	021 462 4502		P.O. Box 4637 CAPE TOWN 8000
Northern Cape Heritage	Mr Ratha Timothy (Manager)	053 8312537 0790369 295	053 83314 35	ratha.timothy@gmail.com	1 Monridge Parl Cnr. Kekewich Drive & Memorial Road Kimberley 8300
ESKOM	Andrea van Gensen				Environmental Manager Land Development & Environment Northern Cape Operating Unit Eskom Holdings SOS Limited DSC Office

Authority/Organ of State	Contact person	Tel No	Fax No	e-mail	Postal address
					Block 69 Memorial Road PO Box 606 Kimberley 8301
TELKOM	Ms H. Van den Heever	051 401 6829	051 401 6238	wayleacr@telkom.co.za	Telkom Wayleave Operations Manager Private Bag X20700 Bloemfontein 9300
Landowners of Adjacent Properties					
Erf 386	Kai !Garib Local Municipality Mr M Louw	054 461 6700	054 467 6401		11th Avenue 9 Kakamas 8870 Private Bag X6 Kakamas 8870
Erf 1429	IC Kordom				Unknown, delivery by hand
Erf 1428	KORDOM ANDRE DAVID				JUPITERSTRAAT 1448 WITRAND KAKAMAS 8870
Erf 1395	FC Nel				Unknown, delivery by hand
Erf 1394	MM Heys				Unknown, delivery by hand
Erf 1377	Kai !Garib Local Municipality Mr M Louw	054 461 6700	054 467 6401		11th Avenue 9 Kakamas 8870 Private Bag X6 Kakamas 8870

Authority/Organ of State	Contact person	Tel No	Fax No	e-mail	Postal address
Erf 1378	Katrina Louw				Unknown, delivery by hand
Erf 1379	Shaun Daniëls				Unknown, delivery by hand
Erf 1380	Jacobus Irion				Unknown, delivery by hand
Erf 1381	Mietjie Beukes				Unknown, delivery by hand
Erf 1908	Jan Oekson				Unknown, delivery by hand
Erf 1384	Timothy Malgas				PO BOX 2327 UPINGTON 8800
Erf 1385	Kai !Garib Local Municipality Mr M Louw	054 461 6700	054 467 6401		11th Avenue 9 Kakamas 8870 Private Bag X6 Kakamas 8870
Erf 1386	Jacobus van Rooi				Unknown, delivery by hand
Erf 1387	ROOYEN LUCAS VAN				1387 PLUTO CRESCENT KAKAMAS KAKAMAS NORTHERN CAPE 8870
Erf 1388	Susanna van Vuuren				Unknown, delivery by hand
Erf 1389	Miena Booysen				Unknown, delivery by hand
Erf 1390	Brenda Bock				Unknown, delivery by hand

Authority/Organ of State	Contact person	Tel No	Fax No	e-mail	Postal address
Erf 1391	Kai !Garib Local Municipality				
Erf 1392	CLOETE DEON BENJAMIN				1392 PLUTO STR KAKAMAS UTIRAND 7349
Erf 1393	CLOETE DEON BENJAMIN				1392 PLUTO STR KAKAMAS UTIRAND 7349
Erf 1376	Kai !Garib Local Municipality Mr M Louw	054 461 6700	054 467 6401		11th Avenue 9 Kakamas 8870 Private Bag X6 Kakamas 8870
Erf 1369	Kai !Garib Local Municipality Mr M Louw	054 461 6700	054 467 6401		11th Avenue 9 Kakamas 8870 Private Bag X6 Kakamas 8870
Erf 1368	SCHALKWYK RONALD DOMINIQUE VAN				PO BOX 655 KAKAMAS 8870
Erf 1367	SMC Crown				Notified by means of On-Site Notification & Notice in the Local Newspaper
Erf 1366	H Cloete				Unknown, delivery by

Authority/Organ of State	Contact person	Tel No	Fax No	e-mail	Postal address
					hand
Erf 1365	Margaret Anneline van Zyl				PO BOX 108 KAKAMAS 8870
Erf 1364	SHORTY JACOBUS				KALAHARI STR 25 UPINGTON 8801
Erf 1363	CLOETE ROBERT				1101 JASMYN STR KAKAMAS 8870
Erf 1362	Frans White				308 GEMSBOK STR UPINGTON KAKAMAS 8870
Erf 1280	Patrick Booysen				BINNE STR 1280 KAKAMAS 8870
Erf 1281	Kai !Garib Local Municipality Mr M Louw	054 461 6700	054 467 6401		11th Avenue 9 Kakamas 8870 Private Bag X6 Kakamas 8870
Erf 1283	Kai !Garib Local Municipality Mr M Louw	054 461 6700	054 467 6401		11th Avenue 9 Kakamas 8870 Private Bag X6 Kakamas 8870
Erf 1284	C Kotze				Unknown, delivery by hand
Erf 1285	KOOPMAN CINDY LEE KAREN				41 GRANT STR KRAAIFONTEIN 7570

Authority/Organ of State	Contact person	Tel No	Fax No	e-mail	Postal address
	CECILIA				
Erf 1286	Sanna Smit Strauss				PLAKKERSKAMPHUIS 2092KAKA HUIS 2092 KAKAMAS SOUTH AFRICA 8870
Erf 1287	Trevor Beukes				Unknown, delivery by hand
Erf 1288	Kai !Garib Local Municipality Mr M Louw	054 461 6700	054 467 6401		11th Avenue 9 Kakamas 8870 Private Bag X6 Kakamas 8870
Erf 431	NED GER KERK-NOORD KAAPLAND	053-832 9581/2	053-832 8212/ 086 516 2961	Admin@Noordkaapland.Co.Za	P.O. Box 110677 Hadison Park 8306
Erf 207	Unknown				Notified by means of On-Site Notification & Notice in the Local Newspaper
Erf 1084	Educational Trustees				Notified by means of On-Site Notification & Notice in the Local Newspaper
Erf 1768	Christie Jordaan Boerdery Trust				Notified by means of On-Site Notification & Notice in the

Authority/Organ of State	Contact person	Tel No	Fax No	e-mail	Postal address
					Local Newspaper

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) 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.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 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. 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

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts 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. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Compliance and Monitoring			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
Record keeping of compliance and monitoring reports	**Direct impacts:** • Non-conformance	High Negative	• The applicant will ensure that the contractors adhere to the recommendations of the EMPr and conditions of the Environmental Authorisation during construction. • An Environmental Control Officer (ECO) will be appointed to monitor the construction phase. Note that the ECO may be appointed separately or can be part of the contractor's team. • Regular monitoring and / or spot inspections at least every fortnight during the construction phase is recommended. • Inspections should be documented and any shortcomings addressed immediately. • A report will be provided by the independent ECO to the contractor upon completion thereof. The findings thereof should be made available to the competent authority (for example NC DENC, DWS), should it be requested. • Any emergency or unforeseen impact will be reported to the relevant environmental department within 24 hours after identification for telephonic approval and will be confirmed in writing. • Material Safety Data Sheets (MSDS) should be available on site. Where possible and available,
	Indirect impacts: • Non-conformance	High Negative	
	Cumulative impacts: • Non-conformance	High Negative	

Compliance and Monitoring			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			MSDS should include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes. • Procedures in the MSDS should be implemented in case of an emergency. • The following documents should be available on site, and made available to the competent authority on request (if applicable): - Complaints Register - Environmental Incident Register - Disposal Certificates of Waste and Waste Water Generated during the construction / operational phase - Environmental Monitoring (Audit) Reports - Written Corrective Action Instructions - Environmental Authorisation - DWS Permit / License - Blasting Permit - Removal / Transplantation of protected species permits - EMPr

Planning and Design phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
Planning and design	**Direct impacts:** • None	Medium – High Negative	• No environmental mitigation measures are required during the planning phase on the proposed site, as no mitigation measures are to be implemented on site during the planning phase. • However, the applicant, engineers, environmental consultants and specialists should take the following steps during the planning phase: - Permits will be obtained for the removal / transplantation of protected species that are located within the construction area where no alternatives are possible (if any). - A monitoring system should be implemented to determine the occurrence (if any) of any fuel / oil spillages during the construction phase. - The necessary Environmental Authorisation will be obtained before any activities listed in the Regulations are undertaken. - In addition, the necessary DWS registrations will be obtained, before any construction activities near watercourses are undertaken. - The necessary precautions with regard to road safety will be implemented for construction work to be undertaken within road crossings (if any). - Proper sanitation, potable water and waste facilities will be in place before construction
	Indirect impacts: • None	Medium – High Negative	
	Cumulative impacts: • None	Medium – High Negative	

Planning and Design phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			activities are undertaken. - A blasting permit will be obtained before blasting activities is undertaken (if any). - The design and layout of the proposed project will take the possibility of flooding, erosion and pollution into consideration. - The Contractor must acquire a permit, issued by the relevant heritage resources authority, in the instance that any destruction, damage, excavation, alteration, defacing or any other disruption are to take place to any archaeological material (including infrastructures older than 60 years).
	Note: • Should the above not be taken into consideration during the Planning and Design Phase, the environmental impacts associated with the construction and operation phase will be of high significance as the environment will possibly be negatively affected.		

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
General measures to consider	**Direct impacts:** • Loss of vegetation • Loss of animal life • Erosion • Pollution • Noise • Nuisance dust	Negative	• Any construction is disruptive and the environment must be given consideration with every activity undertaken. • All relevant standards relating to legislation should be adhered to (including waste emissions, waste disposal, noise regulations, etc.) • According to Section 28 of the NEMA Act 107, every person who cause, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring and if it can't be avoided or stopped, to minimize and rectify such pollution or degradation of the environment. • The pollution control provision in Section 19(1) of the National Water Act (Act 36 of 1998) should be adhered to at all times. • ECO should be provided with a layout of the site, indicating the position of the following prior to the site establishment, for acceptance: - Ablution Facilities - Storage Areas - Ready-mix Areas - Stockpile Areas
	Indirect impacts: • Possible outbreaks of fire • Pollution (groundwater, surface water, soil and air) • Erosion • Loss of biodiversity (vegetation & animal life) • Nuisance dust	High Negative	
	Cumulative impacts: • Possible outbreaks of fire • Pollution(groundwater, surface water, soil and air) • Erosion	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Loss of biodiversity (vegetation & animal life)		- Waste Disposal Facilities - Hazardous Substances Storage Area - Etc. • Designate the boundaries of the active construction start-up site, by erecting fencing / danger tape (where applicable). • Fence off operational footprint area (if possible) to ensure all operational activities are contained within the designate area. • All construction and operational activities must be contained within the demarcated construction area as determined in consultation with the ECO. • Care will be taken to prevent unnecessary damage to vegetation near to construction activities. • The necessary precautions with regard to road safety will be implemented for construction work within road crossings (if any). • Proper sanitation, water and waste facilities will be in place for construction workers throughout the construction phase. • Chemical toilets will be cleaned and serviced regularly and proof thereof will be available on site.

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			• Potable water will be made available daily to workers on site. • Fire-fighting equipment will be available on site, where applicable. • If artefacts or graves are uncovered during construction activities, work in the immediate vicinity will be stopped until the project Archaeologist and SAHRA has been consulted. • Adjacent landowners will be notified of proposed blasting, 24 hours prior to blasting activities. • All relevant IAPs will be notified 24 hours prior to any known potential risks associated with the site and the activities to be undertaken on site.
Site access	**Direct impacts:** • Loss of vegetation • Loss of animal life • Erosion • Pollution • Storm water contamination	Medium Negative	• The current access road to the existing cemetery should be improved, when required. • Proper storm water measures are to be implemented to avoid run-off of water and washing of sand / soil onto the road. • Erosion measures will be implemented. • Removal of vegetation will be kept to the required area. • No animals will be hunted / captured on site (only to be undertaken by a relevant specialist).
	Indirect impacts: • Loss of vegetation • Loss of animal life • Erosion	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Surface water contamination		
	Cumulative impacts: • Loss of vegetation • Loss of animal life • Erosion • Surface and groundwater contamination	High Negative	
Employee conduct on site	**Direct impacts:** • Loss of vegetation • Loss of animal life • Erosion • Pollution • Storm water contamination • Occurrence of waste on site • Various health and safety aspects	Medium Negative	• No animals may be harmed / captured / trapped and / or hunted. This must be strictly enforced. • Animals found at the construction site will be removed and relocated to an appropriate area, by a suitable, qualified person. • No open fires allowed. Provision will be made that no accidental fires are started. • No firewood will be collected on site or in surrounding areas, without written approval from the landowner. • No smoking or open fires will be allowed near storage facilities. • No waste may be dumped on site. • Employees should make use of the ablution
	Indirect impacts: • Loss of vegetation • Loss of animal life • Erosion	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Pollution • Storm water contamination • Occurrence of waste on site • Various health and safety aspects • Fire outbreaks		facilities provided.
	Cumulative impacts: • Loss of vegetation • Loss of animal life • Erosion • Pollution • Storm water contamination • Occurrence of waste on site • Various health and safety aspects • Fire outbreaks	High Negative	
Soil, erosion and vegetation management	**Direct impacts:** • Destruction of vegetation • Loss of topsoil	Medium Negative	• Construction activities will be limited to designated construction areas to prevent peripheral impacts on surrounding natural habitats. Construction

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Loss of vegetative species of conservational concern • Noise elevation due to construction activities • Nuisance dust generation • Visual impact of rock and spoil material dumps		vehicles will also keep to constructed roads where possible, so that natural vegetation is not destroyed unnecessarily. • Access roads must be non-erosive, structurally stable and not induce flooding / safety hazard. • If any access road is impaired, it will be repaired immediately to prevent any future / further damage. • All human movement and activities will be contained within designated construction areas in order to prevent peripheral impacts on surrounding natural habitat. • Erosion management is important. Rehabilitation measures must be monitored to ensure that no erosion occurs and the disturbed should be adequately re-vegetated. • Concurrent rehabilitation of disturbed areas will be undertaken to help the recovery of the vegetation. • Stockpiled soil will be stockpiled in an area where it will not be disturbed by vehicles. • Stockpiled soil will be protected from washing away during rainstorms. For example: - Bricks may be placed around the stockpiles, to
	Indirect impacts: • Erosion • Establishment of alien / invader vegetation species • Possible impact on heritage artefacts • Loss of fauna on site.	Medium Negative	
	Cumulative impacts: • Erosion • Establishment of alien vegetation species	Medium Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			limit the loss thereof due to rainy events. - Stockpiles should not be higher than 1.5 m. - The gradient of stockpiles should not be greater than 1:1.5. • Stockpiles should be located away from drainage lines, watercourses and areas of temporary flood • All soil excavated is to be separated into top- and subsoil. Subsoil must be used for backfilling and topsoil for landscaping and rehabilitation of disturbed areas. • Stockpiled material will be placed on the cleared areas once construction is completed. Re-spreading of topsoil should be of a sufficient depth. • Fertilizers should be used where topsoil and subsoil was mixed or not up to original standard. • Indigenous tree species in the vicinity of the operational site should be marked with danger tape. Disturbance to such species should be avoided, where possible • A permit for the removal of protected plant species will be obtained before the removal of these species (if any) are undertaken. • An alien control and monitoring programme will be

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			developed starting during the construction phase and will be carried over into the operational phase. • Any proclaimed weed or alien species that germinates during the contract period will be cleared by hand / approved chemicals before flowering thereof. • Imported fill material will be monitored during and after construction for the presence of any alien species. Any such species will be removed immediately. • Fire fighting equipment will be available on site. • Species, especially grasses, trees and shrubs occurring in the region will be used to rehabilitate disturbed areas. • Compacted soils (such as dirt tracks not to be utilised during the operational phase) must be ripped to ensure the establishment of natural occurring vegetation. • Concurrent rehabilitation should be undertaken, where possible. • Vegetation clearance will be limited to the required area. • Speed limit will be enforced on the construction

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			vehicles and these vehicles will only make use of designated roads / pathways. • Dust control measures will be implemented if nuisance dust generation occurs during the construction period. • All archaeological findings (if any) should be recorded and reported to SAHRA. No construction activities in the area may proceed without the authorisation from SAHRA. • Storm water measures will be implemented in order to manage storm water and this will also prevent erosion. • Visual inspections for the occurrence of erosion should be undertaken on a weekly basis. • No animals may be captured (only by specialist) / harmed / killed on site. • Any occurrences of harmed animals should be reported to the ECO and recorded as such.
Minimise contamination and sterilisation of soil	**Direct impacts:** • Slow regrowth of natural occurring vegetation during the rehabilitation phase • Loss of vegetation	Medium Negative	• Use of potentially polluting and hazardous substances should be strictly controlled. • If soil is significantly contaminated by hazardous substances, then this soil is considered as hazardous and should be disposed of according

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Contaminated soil		to best practices. • Repair / maintenance will be conducted on site, and impacts like oil spills should be appropriately mitigated. Spill response procedures must be clearly defined and well known by all staff. • All threatened or protected plant species as specified by the NEM: Biodiversity Act (2004) will be identified on site. Permits are required for the removal / transplantation of these plants.
	Indirect impacts: • Loss of vegetation • Loss of animal life • Establishment of alien vegetation • Erosion	High Negative	
	Cumulative impacts: • Loss of vegetation • Loss of animal life • Establishment of alien vegetation • Erosion	High Negative	
Construction of graves	**Direct impacts:** • Visual impact of rock and spoil material dumps from graves excavation • Noise elevation due to construction activities • Nuisance dust generation	Medium – High Negative	• Site will be kept neat and tidy. • Appropriate area will be identified as a stockpiling area. • Speed limit will be enforced on the construction vehicles and these vehicles will only make use of designated roads / pathways. • Dust control measures will be implemented if nuisance dust generation occurs during the construction period. • Stockpiled material will be stored in such a way to limit the loss thereof. For example:
	Indirect impacts: • Erosion • Establishment of alien	Medium – High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	/ invader vegetation species • Possible impact on heritage artefacts • Loss of fauna on site		- Bricks may be placed around the stockpiles, to limit the loss thereof due to rainy events. - Stockpiles should not be higher than 1.5 m. - The gradient of stockpiles should not be greater than 1:1.5. • Noise control measures will be implemented. • All employees will be provided with the correct PPE. • Establishment of alien / invader vegetation will be monitored and these species will be removed by hand or by an approved chemical before gestation thereof. • All archaeological findings (if any) should be recorded and reported to SAHRA. No construction activities in the area may proceed without the necessary authorisation from SAHRA. • Storm water measures will be implemented in order to manage storm water and this will also prevent erosion. • Visual inspections for the occurrence of erosion should be undertaken on a weekly basis. • No animals may be captured (to be undertaken by a specialist) / harmed / killed on site. • Any occurrences of harmed animals should be
	Cumulative impacts: • Erosion • Establishment of alien vegetation species	Medium – High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			reported to the ECO and recorded as such.
Ablution Facilities	**Direct impacts:** • Pollution of surface water runoff • Pollution of soil	Negative	• No open areas or the surrounding vegetation may be used as 'toilet facilities'. • Toilets should be available for all employees. Where waterborne sewerage is not available, the ECO must designate an area within the boundaries of the site for the erection of portable chemical toilets. • Toilet facilities shall occur at a minimum ration of 1 toilet per 15 employees. • Toilets shall be maintained in a hygienic state and serviced when required. • Temporary toilets should be serviced regularly and the contents be removed to a licensed disposal facility.
	Indirect impacts: • Pollution of surface water runoff • Pollution of soil • Pollution of groundwater • Odour • Unnatural enrichment of soil • Promotion of unnatural vegetation growth	Medium Negative	
	Cumulative impacts:	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Pollution of surface water runoff • Pollution of soil • Pollution of groundwater • Odour • Unnatural enrichment of soil • Promotion of unnatural vegetation growth		
Safeguard water resources	**Direct impacts:** • Contamination of surface water resources	High Negative	• No activities will be undertaken within 32 m of a watercourse / within the 1:100 year floodline / 500m of a wetland, without the necessary authorisations (for example from NC DENC and DWS). • Caution will be taken to ensure that construction materials are not dumped or stored within storm water management systems. • Construction activities in the storm water infrastructure will be limited through proper demarcation and appropriate environmental awareness training. • The Contractor is responsible to inform all staff of
	Indirect impacts: • Erosion • Change in flow of water course • Pollution (surface water, groundwater and soil)	High Negative	
	Cumulative impacts: • Erosion	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Change in flow of water course • Pollution (surface water, groundwater and soil)		the need to be vigilant against any practice that will have a harmful effect on waterways. • Infilling, excavation, drainage and hardening of surfaces will not occur unnecessarily in storm water infrastructure. • Emergency plans will be in place in case of fuel spillages (to limit the occurrence of soil as well as groundwater pollution). • A monitoring system should be implemented to determine the occurrence (if any) of any fuel / oil spillages during the construction or operational phase. • The necessary mitigation measures should be implemented immediately, should any leakages / spills of any hazardous material be detected. • Weather forecasts from the South African Weather Bureau of up to three days in advance will be monitored on a daily basis to avoid exposing soil or construction works or materials during a storm event and appropriate action will be taken in advance to protect construction works should a storm event be forecasted. • All no-go areas will be demarcated under guidance of the Environmental Control Officer

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			(ECO). • The design of drainage systems will ensure there is no contamination or eutrophication. • Drainage systems will be maintained regularly in order to minimize the runoff of harmful chemical substances into the waterway(s). • It will be ensured that the construction activities have minimal effects on the flow of water through the storm water infrastructure. • No erosion or siltation may occur due to any construction or operational activities. • Occurrence of erosion will be monitored. Reparations will be undertaken as soon as possible.
Workings within / near to watercourses	**Direct impacts:** • Temporary blockage of water • Loss of vegetation • Loss of aquatic animal life • Erosion • Scouring	Medium – High Negative	• Storm water measures will be implemented in order to manage storm water and this will also prevent erosion. • Construction activities in waterways should be undertaken in such a manner that no containment of water is required, where possible. 2/3 of the waterways may be diverted at a time, if needed. • The necessary authorisations should be obtained from DWS. • Visual inspections for the occurrence of erosion
	Indirect impacts: • Ponding of water during construction at	Medium – High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	waterways (due to blockage of waterways). • Surface and groundwater pollution due to spillage of potential hazardous substances such as hydraulic material and untreated sewage explained above. • Impact on waterways (including the natural habitat of the area), soil disturbances and including pollution. • Possible change of flow of water in waterways. • Erosion • Scouring • Loss of biodiversity		should be undertaken on a weekly basis.
	Cumulative impacts: • Erosion	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Loss of vegetation • Scouring • Possible change of flow of water in waterways • Loss of biodiversity		
Handling of waste / Waste Management (Note that waste refers to all construction debris and domestic waste generated due to construction activities.)	**Direct impacts:** • Spillage of material to be utilised during the construction phase as well as untreated sewage to the surrounding environment • Dumping of construction rubble and general waste on site	Medium – High Negative	• The contractor is responsible for the removal of construction waste. • Suitable containers (weather and vermin proof) will be placed on site to collect all solid waste. These will be emptied regularly. • No littering is permitted. During the construction and operational phase the site will be maintained in a neat and tidy condition. • All solid waste produced will be disposed of at an authorized landfill site. Recyclable waste may also be sold to recycling contractors. • No dumping, burning or burying of waste will be undertaken on site. • All hazardous waste will be disposed of at an authorized hazardous landfill site. • Recyclable hazardous waste will be re-used or sold to recycling contractors, where possible. • A waste management plan will be compiled and
	Indirect impacts: • Surface and groundwater pollution due to spillage of potential hazardous substances such as	Medium – High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	hydraulic material and untreated sewage. • Impact on waterways (including the natural habitat of the area), including pollution. • Pollution of soil		designed to ensure adequate waste management activities. • Areas used for waste storage and loading of materials should be lined and bund walls have to be erected to contain any spills that might occur. • Waybills providing evidence of correct disposal procedure must be provided for the ECO's inspection. • Waste classification should be undertaken. • Visual inspections for the occurrence of pollution should be undertaken daily. • Spills should be cleaned up immediately according to best practices. • DWS should be notified of any spillage / pollution of water sources (groundwater and / or surface water) within 24 hours of occurrence. • Record should be kept on site to indicate date of visual inspection, any spillages observed, and manner in which spill was treated.
	Cumulative impacts: • Pollution of downstream watercourses • Pollution of soil • Pollution of groundwater • Air pollution	Medium – High Negative	
Health, safety and security	**Direct impacts:** • Road safety at road crossings • Injuries on site • Health issues on site	Medium Negative	• Site should be fenced / marked with danger tape, where possible. • The contractors will comply with the Occupational Health and Safety Act, National Building

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	(for example, due to pollution) • Unauthorised entry		Regulations and any other national, regional or local regulations with regard to safety on site. • Construction contracts will include safety and security measures for staff. • Precautions to ensure that construction staff and sites are visible and proper PPE will be provided to all employees. • Suitable warning and information signage should be available at the storage facilities. In addition, telephone numbers of emergency services (including local firefighting services) must be posted conspicuously on site. • Employees should be made aware of the health risks associated with any hazardous substances / dangerous goods used or stored on site. This includes soil that was contaminated with oil or diesel, etc. • Employees should receive relevant safety training in handling of hazardous substances / dangerous goods associated with the proposed project. • Construction work within road reserves will accommodate road users as far as possible. This includes the following: - Roads will be crossed in half widths at a time to
	Indirect impacts: • Loss of vegetation and animal life due to possible fire outbreaks • Road safety issues at road crossings • Injuries on site • Health issues on site (for example, due to pollution) • Unauthorised entry	Medium Negative	
	Cumulative impacts: • Loss of vegetation and animal life due to possible fire outbreaks • Road safety issues at road crossings • Injuries on site • Health issues on site (for example, due to pollution)	Low Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Unauthorised entry		minimise the impact on vehicular traffic, where possible. - Construction along and across existing roads will be executed in such a manner that both pedestrian and vehicular traffic is accommodated at all times. - The contractor will be required to maintain adequate access to all public and private property at all times. - Contractor will supply, erect and maintain road signs for all work areas conforming to the prescribed layout and requirement of the South African Road Traffic Signs Manual and other relevant notices. • Fire extinguishers will be available on site and in the construction camp (if any). • The contractor will be required to maintain adequate access to all public and private property at all times. • Speed limits of 20km/h will be enforced. • All relevant IAPs will be notified prior to any blasting activities. • All relevant IAPs will be notified 24 hours prior to any known potential risks associated with the site

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			and the activities to be undertaken on site. • The necessary precautions with regard to road safety will be implemented for construction work within road crossings. • All injuries should be recorded.
Heritage	**Direct impacts:** • Harm to unknown heritage resources	Negative	• In the case of the discovery of any heritage, archaeological or palaeontological significance, the work in the area will be stopped and reported to the archaeologist and SAHRA. Any construction activities in the nearby vicinity may only commence after approval is obtained from SAHRA as well as the ECO. • Known heritage resources (if any) must be avoided as far as possible. • Employees should be encouraged and informed of the need to be on the look-out for potential fossils / buried archaeological material. • In the case of the discovery of any stone tools or other archaeological or palaentological material, the work in the immediate vicinity should temporarily cease and reported to the archaeologist and SAHRA. Should any human remains be exposed, the archaeologist as well as the local SAPS should be notified.
	Indirect impacts: • Loss of heritage resources	High Negative	
	Cumulative impacts: • Loss of heritage resources	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			• If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Tel: 021 462 5402) must be alerted. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Tel: 012 320 8490), must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA. • Appropriate measures should be undertaken by the ECO until the archaeologist / SAPS visits the site. This should include the following: – Site should be fenced with 'danger tape' – Position of finding should be recorded – Depth of finding should be recorded

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			– Digital image of the finding should be taken – No information on the findings may be made public without the consent of the archaeologist / SAPS. – Construction activities in the area may only continue after approval from the archaeologist and SAHRA.
Noise and dust control	**Direct impacts:** • Elevation of noise levels • Generation of nuisance dust	Negative	• Construction activities will be limited to normal daytime hours, where possible. • Noise levels will be kept as low as possible during the construction phase in order not to disturb adjacent landowners. • Proper mitigation measures will be implemented to limit noise (e.g. the installation of silencers, where required). • Proper mitigation measures will be implemented to limit the formation of dust (e.g. wetting of construction area, when required). • The speed of the construction vehicles will be limited to avoid dangerous conditions, the formation of dust and the excessive deterioration of roads being used.
	Indirect impacts: • Air pollution • Increase in noise levels outside of the proposed construction site may have a negative impact on surrounding landowners / occupants	Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	Cumulative impacts: • Air pollution • Increase in noise levels outside of the proposed construction site may have a negative impact on surrounding landowners / occupants	Negative	
Handling and Storage of materials	**Direct impacts:** • Soil pollution • Air pollution • Fire outbreaks • Surface water pollution • Injuries • Health issues	High Negative	• All chemicals used during the development, including fuel, will be stored in a proper storeroom or protected area to prevent pollution. • Vehicles will be serviced at designated areas. No oil, diesel or other chemicals may be spilled or discharged anywhere. • Where applicable, the contractors will ensure that all relevant national, regional and local legislation regarding storage, transport, use and disposal of petroleum, chemical, harmful or hazardous substances and materials are adhered to, where necessary. • Cement and concrete mixing, if applicable, will only take place within the construction site. No
	Indirect impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	groundwater pollution • Injuries • Health issues		concrete will be mixed directly on the ground. • All environmental problems occurring on the site such as chemical spillage, wasteful water disposal, etc. will be reported to the ECO. The ECO should implement best practices to rectify the impacts thereof on the environment. • Spill response equipment must be available during the handling and loading of hazardous waste (if any) • Hazardous substances are to be stored in bunded areas. • Bund walls will have a capacity of at least 110% of the total capacity of the stored volume. • No oil, diesel or other chemicals may be spilled or discharged anywhere and contact with bare soil should be avoided at all cost. • Drip trays will be used during the servicing of vehicles as well as the transfer of chemicals / substances from transportation vehicles. • A monitoring system should be implemented to determine the occurrence (if any) of any fuel / oil spillages during the construction phase. • The necessary mitigation measures should be implemented immediately, should any leakages /
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
			spills be detected. • Material stockpiles must be stable and well secured to avoid collapse and possible injury. • Material and Safety Data Sheets (MSDSs) should be readily available on site for all hazardous materials. MSDSs should additionally include information on ecological impacts and measures to minimise negative environmental impacts during accidental releases or escapes. • Storage areas should be kept clean and free from any accumulation of combustible matter (such as paper) and any possible source of ignition should be removed.
Hazardous waste management	**Direct impacts:** • Soil pollution • Air pollution • Fire outbreaks • Surface water pollution • Injuries • Health issues	High Negative	• Hazardous wastes must be separated from general wastes, stored within secondary containment in appropriate containers. • Proper storage facilities for the storage of hazardous / dangerous goods must be provided to prevent the migration of spillage into the soil and or groundwater. • Certificates / waybills of hazardous waste disposals are to be available on request as well as auditing purposes. This includes the removal of soil
	Indirect impacts: • Loss of vegetation and animal life due to fire	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues		contaminated with hydrocarbons. • Storage of hazardous substances and refuelling areas are to be bunded with an impermeable liner to protect groundwater quality and must comply with the relevant SANS codes. • Areas used for the storage of hazardous materials are to be clearly indicated as such.
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	High Negative	
Hazardous and Flammable materials: Delivery	**Direct impacts:** • Soil pollution • Air pollution • Fire outbreaks • Surface water pollution • Injuries	High Negative	• All deliveries (especially of hazardous nature) must be supervised. • Subcontractors and delivery companies should be informed of the delivery procedures and made aware of restrictions as to where materials may be stored.

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Health issues		• Loads must be secured to prevent spillage during transportation thereof. • Hazardous substances are to be transported in sealed drums or bags.
	Indirect impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	High Negative	
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	High Negative	
Hazardous and Flammable materials: Cement	**Direct impacts:** • Soil pollution • Air pollution	High Negative	• Limit cement and concrete mixing to single sites, where possible.

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
and / or concrete mixing	• Fire outbreaks • Surface water pollution • Injuries • Health issues		• No mixing allowed directly onto the ground. • All visible remains of excess material will be treated as hazardous waste. • Solid concrete waste may be treated as inert construction rubble. However, wet cement, liquid slurry and cement powder must be treated as hazardous waste.
	Indirect impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries • Health issues	High Negative	
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Air pollution • Surface and groundwater pollution • Injuries	High Negative	

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Health issues		
Hazardous and Flammable materials: Gas Storage	**Direct impacts:** • Air pollution • Fire outbreaks • Injuries • Health issues	High Negative	• All combustible materials are to be store at least 3 m from any gas storage areas. In case of any flammable or any other gas storage areas, open flames, welding and cutting operations, smoking, etc. shall be prohibited in or near the storage area. • No gas will be delivered until the site is registered with local Fire Safety. • Cylinders should always be stored in a well-ventilated area away from spark, flames or any source of heat or ignition. • Cylinders should always be handled, stored, used and transported in an upright position. It should not be dropped, dragged or rolled on their sides or allowed to skid. Cylinders that are too large to be carried shall be tilted and rolled on the rims of their foot rings or bases. • Valves should be kept properly closed
	Indirect impacts: • Air pollution • Fire outbreaks • Injuries • Health issues	High Negative	
	Cumulative impacts: • Air pollution • Fire outbreaks • Injuries • Health issues	High Negative	
Hazardous and Flammable materials: Chemicals, Grease and Oil Storage	**Direct impacts:** • Soil pollution • Fire outbreaks • Surface water pollution • Injuries	High Negative	• Storage areas must be bunded and hard surfaced in order to protect groundwater quality • Compliance with SANS codes and hazardous substances bylaws should be adhered to • All lids must be properly sealed / closed to prevent

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Health issues		Volatile Organic Compounds (VOCs) and other potentially harmful gaseous compounds from escaping.
	Indirect impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Surface and groundwater pollution • Injuries • Health issues	High Negative	
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Surface and groundwater pollution • Injuries • Health issues	High Negative	
Hazardous and Flammable materials: Hydrocarbon spillages	**Direct impacts:** • Fire outbreaks • Surface water pollution • Injuries	High Negative	• Spill kits are to be made permanently available at areas which have the potential to be subjected to spillage of hazardous substances and dangerous goods.

Construction phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	• Health issues		• Remediation of spillages must be conducted immediately and closed out within 24 hours. • No waste water or waste will be disposed of into the surrounding environment at any time. Water collected in bunded areas must be collected in containers and disposed of as hazardous waste. • Machinery will be kept maintained in line with manufactures specifications to minimise the risk of hydrocarbon spillages. • An incident reporting system will be implemented in order to ensure incidents, where spillages has occurred, are closed out and appropriate measures are taken to prevent further incidents. • Incidents must be reported to DWS within 24 hours. • Contaminated soil must be disposed of in a hazardous materials skip and removed to a licensed hazardous landfill facility by a licensed contractor. • Contaminated water must be decanted into drums and stored until disposal by a registered waste transported is undertaken.
	Indirect impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Surface and groundwater pollution • Injuries • Health issues	High Negative	
	Cumulative impacts: • Loss of vegetation and animal life due to fire outbreaks • Soil pollution • Surface and groundwater pollution • Injuries • Health issues	High Negative	

Operational phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
This phase consists of the use of the cemetery	**Direct impacts:** • Deterioration of the infrastructure in the long term. • Reach its capacity	Medium – Low Negative	• Maintenance and repair will be undertaken on the infrastructure when necessary. • Soil erosion occurrences will be attended to immediately. • Establishment of alien vegetation will be monitored and alien species will be removed by hand or by an approved chemical before gestation thereof. • Proper monitoring of various aspects (such as monitoring of the potable water quality should the potable water not be obtained from the municipal supplies) should be undertaken on a regular basis. • An emergency plan should be developed in case the potable water does not conform to the DWS standards.
	Indirect impacts: • Establishment of alien / invader species due to previous disturbance will also be associated with this phase. • Erosion • Illegal digging of new graves outside cemetery boundaries • Plundering of graves & cemetery in general	Medium – Low Negative	
	Cumulative impacts: • Establishment of	Medium – Low Negative	

Operational phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	alien / invader species due to previous disturbance will also be associated with this phase. • Erosion • Illegal digging of new graves outside cemetery boundaries • Plundering of graves & cemetery in general		

Decommissioning phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
It is not anticipated that the proposed project will cease in the nearby future. However, if decommissioning is decided upon, a rehabilitation plan will be developed and submitted for approval. The end-use of the area will be kept in mind during the compilation of the rehabilitation plan. Activities associated with the decommissioning phase discussed in this document will be limited to the rehabilitation of areas disturbed during the construction phase.	**Direct impacts:** • Rehabilitation of disturbed area • Re-vegetation • Limit occurrence of erosion • Proper stormwater control • No ponding on site • Limit visual impact	Medium Positive	• Temporary structures and office sites (if any) will be dismantled and removed after completion of the construction phase of the project. • All waste, equipment, materials, etc. used during construction will be cleared from the site. The contractors will ensure that the site is cleared and rehabilitated to the satisfaction of the ECO. • An alien plant control and monitoring programme will be implemented. • Re-vegetation of disturbed areas will be undertaken with site indigenous species. Hydro-seeding will be implemented if the establishment of natural occurring vegetation does not occur within reasonable time. • Temporary concrete surfaces (if any) will be removed and compacted areas ripped. • The establishment of natural occurring vegetation will be encouraged at disturbed areas. Hydro-seeding will be undertaken if natural regrowth is insufficient. • Establishment of extensive alien species will be monitored.
	Indirect impacts: • Rehabilitation of disturbed area	Medium Positive	
	Cumulative impacts: • Rehabilitation of disturbed area	Medium Positive	

Decommissioning phase			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
All disturbed areas will be rehabilitated according to best practices.			

No-go Option			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
Keeping the status quo – limited burial spaces will be available to the community	**Direct impacts:** • No direct environmental impacts.	N/A	• Patrolling should be implemented by the municipality to ensure that no illegal graves are constructed onto adjacent properties.
	Indirect impacts: • Community members will have to bury their loved ones at a cemetery in neighbouring towns (if space are available) • The above is a costly alternative to the community members. • It should also be kept in mind that cemeteries of adjacent towns are also fairly full and therefore this option cannot be seen as a	High Negative	

No-go Option			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	reasonable alternative. • Community members will make use of adjacent property as an illegal cemetery.		
	Cumulative impacts: • Community members will have to bury their loved ones at a cemetery in neighbouring towns (if space are available) • The above is a costly alternative to the community members. • It should also be kept in mind that cemeteries of adjacent towns	High Negative	

No-go Option			
Activity	**Impact summary**	**Significance without mitigation**	**Proposed mitigation**
	are also fairly full and therefore this option cannot be seen as a reasonable alternative. • Community members will make use of adjacent property as an illegal cemetery.		

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.

2. 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 1Preferred - Expansion of the existing cemetery & Construction of a new cemetery

- It is proposed that the existing cemetery is expanded, by utilizing Erf 1279 and Plot 431. The construction of a new cemetery on Erf 1654 is also proposed.
- Preparation and development of the cemetery (including construction of new road) will result in the destruction of the vegetation.
- Erosion control measures should be implemented.
- The project will provide for new burial sites for future usage.
- The possible impacts associated with the proposed project can be minimised if the recommended mitigation measures as mentioned in this document and the EMPr is adhered to.
- Removal and transplantation of protected plant species

Alternative 2Locality

- Another option is to expand the existing cemetery on Erf 1376.
- However, option is not seen as a reasonable / feasible alternative, as a major storm water drainage canal is located on the site.

Alternative 3Design & Layout

- The existing infrastructure associated with the existing cemetery was taken into consideration and therefore no design or layout alternatives were investigated.
- With the above in mind, no design / layout alternatives are seen as a feasible and / or reasonable alternative and will therefore not be discussed throughout the current document.

Alternative 4Technology

- As an alternative, the pre-excavation of graves and re-filling of graves (hard material removed at each of the new graves and filled with the removed material until the specific grave is required) were investigated. As part of this option, the construction of graves is to be done by hand during the operational phase.
- However, this option is not recommended due to the:
  - Type of soil (hard) encountered on site - the community members

will not be able to dig the graves to the acceptable depths.
- High number of burials per week.

- This option will thus not be discussed throughout the current document.

No-go alternative (compulsory)

- Utilising the existing cemetery.
- The existing cemetery in the region is already more than 98% full. The existing facility is therefore inadequate for the need of the community and this option is thus not seen as a feasible / reasonable alternative.

- No direct environmental impacts are foreseen if the no-go alternative is decided upon.
- However, no approved burial sites will be available.
- Possible health and safety issues, as bodies will be buried in shallow, hand dig graves in unsuitable areas.

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	

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.

Refer to the EMPr in Appendix G for recommended mitigation measures.		
Is an EMPr attached?	YES	

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)
- Appendix D_1: Heritage
- Appendix D_2: Ecological
- Appendix D_3: Preliminary Design Report / Services Report
- Appendix D_4: Traffic Impact Study
- Appendix D_5: Geohydrological Report
- Appendix D_6: Geotechnical Report

Appendix E: Public Participation
- Appendix E_1: List of identified possible IAPs
- Appendix E_2: Proof of notification
- Appendix E_3: List of registered parties
- Appendix E_4: List of comments received
- Appendix E_5: Response to comments received
- Appendix E_6: Proof of submission of dBAR to registered parties

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

NOTE: Declaration by EAP is attached to Appendix H.
- Heritage
- Ecological
- Geotechnical
- Engineers
- Geohydrological
- Traffic Impact Assessor

Appendix J: Additional Information
- Appendix J_1: Title Deed Document
- Appendix J_2: Consultation with DWS (if applicable)
- Appendix J_3: Confirmation from Municipality