DRAFT BASIC ASSESSMENT REPORT

Proposed construction of an abstraction works and pipeline from the Orange River to the Plangeni Settlement near Keimoes, Northern Cape Province

Applicant: Kai !Garib Municipality
MDA Ref No: 41056
Dept. Ref No: (Not yet allocated)
Date: June 2023

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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 of07 April 2017. 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

Environmental Authorisation (EA) was obtained by the Department of Agriculture, Environmental Affairs, Rural Development & Land Reform for a new township, consisting of low-income housing, at Portion 30 of Farm Blaauwskop No. 36, Blaauwskop Settlement, Kenhardt Road, Kai !Garib Municipality, ZF Mgcawu District Municipality, Northern Cape (Permit No, 26/2021, Ref: NC/EIA/07/ZFM/KAI!/KAK2/2020 – see Appendix 6). However, no substantial bulk infrastructure exists for the development.

The proposed project entails the construction of an abstraction works and pipeline to transport raw water from the Orange River to the Blaauwskop Settlement ("Plangeni") Development. The abstraction works will be located on the southern bank of the Orange River and will include an abstraction pipeline along the banks, a concrete platform and pump with below ground raw water pipeline. From the abstraction works a bulk water pipeline will be constructed. This bulk water pipeline will be 160mm in diameter and approximately 2km in length. A purification plant with the capacity of 350 m^3/day will be constructed at the Plangeni Development.

The current water management policy of Kai !Garib Municipality will be implemented for the development. Each site will be supplied with a water management device. Free basic water will be supplied to the site until a consumption of 6m^3 per month is reached. Slow supply of water will be available after 6m^3 consumption until the end of the month or if additional water supply is purchased.

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

Listed activity as described in GN 327, 325 and 324	Description of project activity
Example: ***GN 327 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***	***A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river***

watercourse, excluding where such construction will occur behind the development setback line.	
Regulation 327 of 2017, Listing Notice 1 (BAR)	
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 and adjacent to the Orange River will be undertaken, as part of the construction of the abstraction facilities and pipeline.
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 the Orange River will be undertaken, as part of the construction of the abstraction facilities.
Regulation 324 of 2017, Listing Notice 3 (BAR)	
Activity 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. (g) In the Northern Cape (ii) within critical biodiversity areas identified in bioregional plans.	The area is listed as being a Critical Biodiversity Area 1 & 2 due to the Orange River. Clearance of indigenous vegetation may be required during the construction activities of the proposed pipeline.

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 1 **Preferred –Pipeline and Abstraction Facility**

The construction of a pipeline and abstraction facility to provide water to the Plangeni Settlement. The only sustainable abstraction will be from the Orange River. Servitudes over private owned land will be required.

Alternative 2 **Locality**

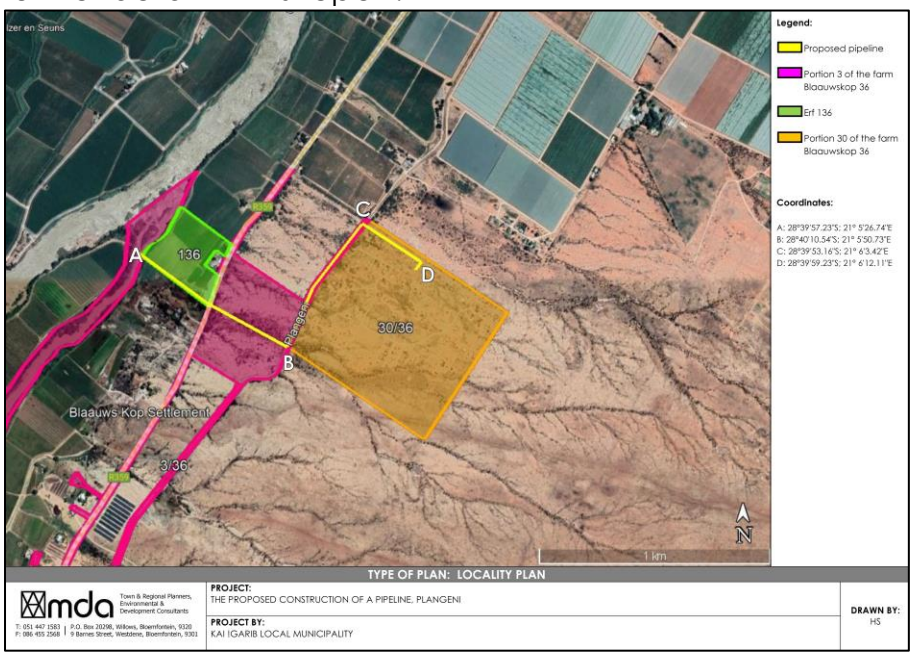
The construction of the abstraction facilities, approximately 750m upstream of the proposed site. The pipeline will be re-aligned to follow a more straight route to the Plangeni Settlement. However, this option is not feasible, as the conditions of the Bed / Banks at this section of the Orange River are not suitable for the construction of the required abstraction works. Thus, this option will not be described in further detail in this report.

Alternative 3 **Design & Layout**

The preferred option took the property boundaries into consideration. The preferred layout will have a minimal impact on the agricultural activities that are undertaken on the relevant properties.

Should the pipeline be constructed linearly from Point A to Point D (see the map below), the impact on the farming activities will be larger. Thus, this option

is not seen as a feasible and / or viable option and will not be described in further detail in this report.



Alternative 4 Technology

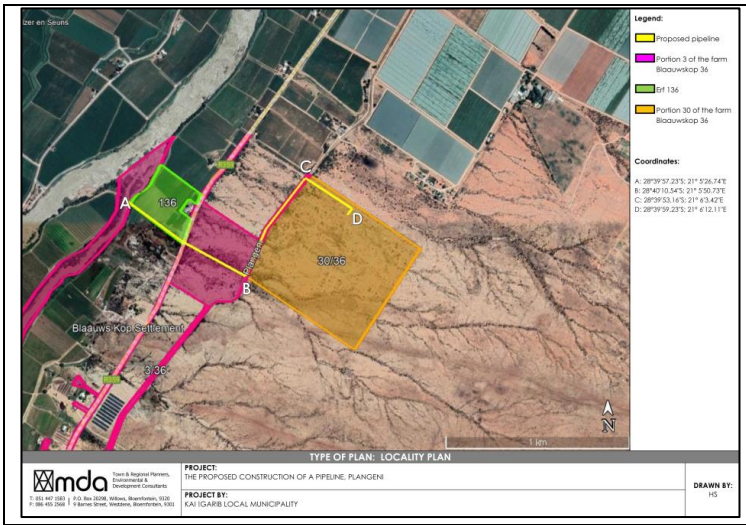
As part of this option, the conveyance of water from the Orange River, by means of the irrigational canal was also investigated. However, the canal is in 'downtime' each alternative 14 days and therefore this option is not seen as a viable option. This option will thus not be discussed throughout the current document.

No-go Option

The no-go option means keeping the status que – not constructing the required pipeline and abstraction works. The Plangeni Settlement will not have a sufficient volume of potable water available. This will lead to environmental, and economic impacts in the long term. This option is thus not considered a feasible / reasonable alternative.

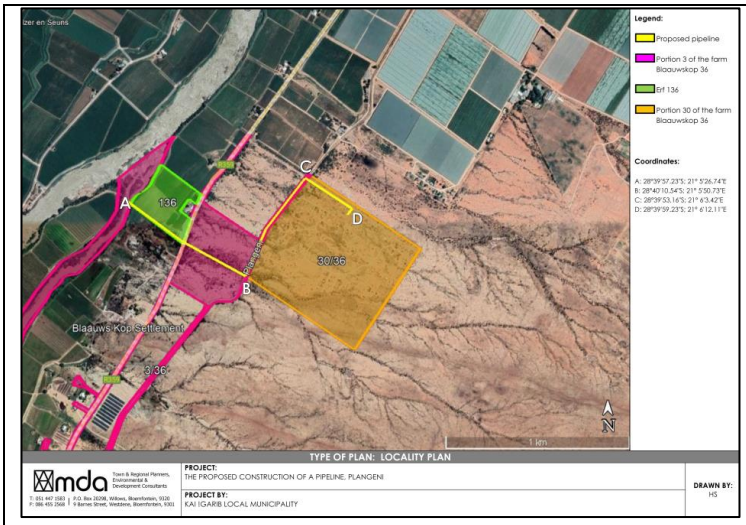
a) Site alternatives

Alternative 1 Preferred		
Description	Lat (DDMMSS)	Long (DDMMSS)
The construction of a pipeline and abstraction facility to provide water to the Plangeni Settlement. The only sustainable abstraction will be from the Orange River. Servitudes over private owned land will be required.	28°39'57.23"S 28°40'10.54"S 28°39'53.16"S 28°39'59.23"S	21° 5'26.74"E 21° 5'50.73"E 21° 6'3.42"E 21° 6'12.11"E

		
Alternative 2 Locality		
Description	Lat (DDMMSS)	Long (DDMMSS)
The construction of the abstraction facilities, approximately 750m upstream of the proposed site. The pipeline will be re-aligned to follow a more straight route to the Plangeni Settlement. However, this option is not feasible, as the conditions of the Bed / Banks at this section of the Orange River is not suitable for the construction of the required abstraction works. Thus, this option will not be described in further detail in this report.	28°39'38.95"S 28°39'59.23"S	21° 5'41.60"E 21° 6'12.11"E

b) Lay-out alternatives

Alternative 1 Preferred		
Description	Lat (DDMMSS)	Long (DDMMSS)
The preferred option took the property boundaries into consideration. The preferred layout will have a minimal impact on the agricultural activities that are undertaken on the relevant properties.	28°39'57.23"S 28°40'10.54"S 28°39'53.16"S 28°39'59.23"S	21° 5'26.74"E 21° 5'50.73"E 21° 6'3.42"E 21° 6'12.11"E
Alternative 3 Design & Layout		
Should the pipeline be constructed linear from Point A to Point D (see the map below), the impact on the farming activities will be larger.	28°39'38.95"S 28°39'59.23"S	21° 5'41.60"E 21° 6'12.11"E



Thus, this option is not seen as a feasible and / or viable option and will not be described in further detail in this report.

c) Technology alternatives

Alternative 1 Preferred
The construction of a pipeline and abstraction facility to provide water to the Plangeni Settlement.
Alternative 4 Technology
As part of this option, the conveyance of water from the Orange River, by means of the irrigational canal was also investigated. However, the canal is in 'downtime' each alternative 14 days and therefore this option is not seen as a viable option. This option will thus not be discussed throughout the current document.

e) No-go alternative

The no-go option means keeping the status que – not construct the required pipeline and abstraction works. The Plangeni Settlement will not have sufficient volume of potable water available. This will lead to environmental, and economic impacts in the long term. 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$_{Preferred}$	1 750m^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$_{Preferred}$	Servitude: 17 500m^2 (a servitude of 10 m is taken into consideration)

4. SITE ACCESS

Does ready access to the site exist?	Yes✓ Access to the Preferred site (Alternative 1$_{Preferred}$) does exists.	
If NO, what is the distance over which a new access road will be built		m

Describe the type of access road planned:

An existing dirt road that provides access to the proposed site will be upgraded, should it be necessary.

Additional access roads (dirt) may be constructed, during the construction phase.

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?	YES ✓		
No change in land use is required.			
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 construction of a pipeline to provide water to the Plangeni Settlement.			
(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 in 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 - 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)?	YES✓		
No change in land use is required.			
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 proposed project will provide water to the Plangeni Settlement.			

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✓		
The proposed project entails the construction of a pipeline to transport water to the Plangeni Settlement – thus, the proposed project is related to the lack of available services.			
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✓		
The applicant for the proposed pipeline is the Local 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 program. The proposed project entails the construction of a pipeline to provide water to the Plangeni Settlement. This will aid the Local Municipality 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 construction of a pipeline to provide water to the local community. Therefore, location factors favour the proposed project.			

9. Is the development the best practicable environmental option for this land/site?	YES✓		

The proposed project entails the construction of a pipeline to provide water to the local community.

As an alternative, all inhabitants of the Plangeni Settlement can be translocated to an area where sufficient services are already provided. However, this option may be costly (financially, agriculturally, socially as well as environmentally) as:

- A new portion of land will have to be bought by the Municipality to provide housing opportunities in close proximity to an area with available water.
- 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

Therefore, this option is not considered as a feasible / viable option.

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

Negative impacts:

- Erosion may occur during the construction phase
- Formation of dust may take place during the construction phase
- Visual impact will occur during the construction 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 minimized 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✓		

The proposed project may result in the development of additional pipelines expansion of the proposed pipeline 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 water services to the area. Dust and higher noise levels may negatively affect community members during the construction phase. However, construction activities will be limited to normal working hours. Dust suppression measures will be implemented where required. Heavy vehicles will be equipped with silencers.			
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 18: Water and sanitation infrastructure Project. **SIP 18: Water and sanitation infrastructure** A 10-year plan to address the estimated backlog of adequate water to supply 1.4m households and 2.1m households to basic sanitation. The project will involve provision of sustainable supply of water to meet social needs and support economic growth. Projects will provide for new infrastructure, rehabilitation and upgrading of existing infrastructure, as well as improve management of water infrastructure.			
15. What will the benefits be to society in general and to the local communities?			Please explain
The proposed construction of the pipeline will benefit the Plangeni Settlement in general, due to the following: • Employment opportunities during the construction phase. This in turn, may lead to employment opportunities during the operational phase. • The availability of volumes of water for members from the local community.			
16. Any other need and desirability considerations related to the proposed activity?			NO✓
The proposed project will provide the much-needed water during the operational phase thereof. This will have a positive impact on the socio-economics of the area.			
17. How does the project fit into the National Development Plan for 2030?			
The proposed project will provide the much-needed water 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.
The project has, through the Basic Assessment Process, identified, predicted and evaluated actual and potential impacts on the environment. Public participation has also taken place and best suited modes of environmental management have been employed as far as possible.
19.The project has, through the Basic Assessment Process, identified, predicted and evaluated actual and potential impacts on the environment. Public participation has also taken place and best suited modes of environmental management have been employed as far as possible.
NEMA Section 2 (2) states that environmental management must place people and their needs at the forefront of its concern. Although the proposed pipeline installation may have impacts on the environment, although assessed to be minimal, sustainable development is the main aim and it would be safe to say that the factors applicable to sustainable development, namely (4)(a)(ii), (iii), (iv) and (viii) of NEMA Section 2 are most relevant to the proposed development and the EIA process followed. Social, economic and environmental impacts have been considered and evaluated allowing the Department to make an informed decision.

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) (NEMA)	Proposed construction of a pipeline and abstraction works	NC DAEARDLR	1998
National Heritage Resources Act (Act No 25 of 1999)	Proposed construction of a pipeline and abstraction works	SAHRA	1999
Environmental Conservation Act (Act 73 of 1989)	Conservation of the environment, by implementing best practices	DFFE / NC DAEARDLR	1989
National Environmental Management Biodiversity Act, 2004 (Act 10 0f 2004)	Endangered / Vulnerable vegetation types and Protected Species (TOPS)	DFFE / NC DAEARDLR	2004
Northern Cape Nature Conservation Act (Act 9 of 2009) (NCNCA)	Conservation of the environment, by implementing best practices	DFFE / NC DAEARDLR	2009
National Forests Act (Act No. 84 of 1998) (NFA)	Conservation of protected trees	DFFE	1998
NEM Laws Amendment Act Department (Act 25 of 2014)	Amended regulations for the Public Participation Process.	DFFE / NC DAEARDLR	2014
Conservation of Agricultural Resources Act (Act 43 of 1983)	Proposed construction of a pipeline and abstraction works on agricultural land.	NC DAEARDLA	1983
National Water Act, 1998 (Act 36 of 1998)	Activities in proximity to 32m from watercourses.	DWS	1998

NOTE:
NC DAERDLR: Department of Agriculture, Environmental Affairs, Rural Development and Land Reform
SAHRA: South African Heritage Resources Agency
DFFE: Department of Environment, Forestry and Fisheries
NC DFFE: Northern Cape Department of Environment, Forestry and Fisheries
DWS: Department of Water and Sanitation

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 site 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:

Not applicable

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 daytime hours, where possible.
- In addition, dust can also be seen as a potential issue during construction phase.
- This will be temporary, and the formation of dust will be controlled, when necessary.
- A blasting permit will be obtained before blasting (if any) activities are 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 (if any) are undertaken.
- The adjacent landowners will be notified of proposed blasting 24 hours prior to blasting activities.
- In addition, construction activities will be limited to daytime 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, dam or lake✓	Other	The activity will 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:	350 000 litres / day	
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 for the taking of water, impeding or diverting the flow of a watercourse and / or altering of beds / banks of watercourse(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:

Infrastructure (pumps, motors and pipelines) relating to this project are designed to provide water to the end user in the most energy efficient manner possible. Pipes are sized to have minimal energy/head loss. Pumps and motors are sized at the peak of their energy curves.

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

Not applicable for the pipeline itself, but alternative energy sources, like solar, may be possible for the pumps at the abstraction works.

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)	8
Erf / Holding / Farm	Portion 3 of the farm Blaauwskop 36
Portion number	3
SG Code	C03600000000003600003
Erf / Holding / Farm	Erf 136
Portion number	0
SG Code	C03600010000013600000
Erf / Holding / Farm	Portion 30 of the farm Blaauwskop 36
Portion number	30
SG Code	C03600000000003600030

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:

Agriculture
Erf

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? [ ] NO ✓

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Preferred Alternative 1 Preferred:

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 At the Orange River✓

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

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.

An Ecological & Wetland Assessment was undertaken. Refer to Appendix D1 for the report.

5. SURFACE WATER

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

Perennial River	YES✓	
Non-Perennial River		NO✓
Permanent Wetland	YES✓	
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.

The Orange River and its associated riparian zone were delineated by use of topography (land form and drainage pattern) and riparian vegetation with limited soil sampling. The soil samples taken along the banks of the Orange River are clearly indicative of wetland conditions on a perennial basis. Several small watercourses will also be crossed by the pipeline which drain toward the Orange River. They all contain a fairly well-defined main channel with riparian vegetation evident while wetland conditions are completely absent.

(Extract from the Ecological & Wetland Assessment. Refer to Appendix D1 for the full report.)

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 "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

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

NOTE: The proposed impacts upon the proposed activity due to the boxes marked with an "A":

Negative impact:
It should be noted that the proposed pipeline will be constructed within a close proximity to the Plangeni Settlement. 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. No additional long term negative impacts

anticipated, should the mitigation measures listed in the EMPr and this document, as well as best practices be implemented.

In addition, the proposed construction activities will have a negative visual impact during the construction phase. However, it should be noted that the proposed pipeline will be constructed to serve the local community during its operational phase. It is suggested that the mitigation measures listed in the EMPr and the current document should be implemented to limit the visual impact (during the construction phase) of the proposed project. This includes the following:

- Site should be clean and tidy.
- Construction activities should be limited to normal construction hours, if possible.
- Dust suppression measures should be implemented, when necessary.

Positive impact:
The pipeline and associated infrastructure will service the local community members.

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

Critical Biodiversity Area (as per provincial conservation plan)	YES✓	
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.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? 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:

The proposed development footprint is underlain by palaeontologically insignificant metamorphic rocks and geologically recent superficial sediments as well as potentially significant alluvium that has been extensively disturbed by agricultural activities. The field assessment provided no aboveground evidence of prehistoric structures, buildings older than 60 years, or material of cultural significance or *in situ* archaeological sites within the study area. The proposed development footprint is not considered palaeontologically or archaeologically vulnerable and is assigned a site rating of Generally Protected C. It is advised that the proposed project can proceed with no further palaeontological or archaeological assessments required.

(Extract from the Phase 1 Heritage Impact Assessment. Refer to Appendix D2 for the full report.)

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.

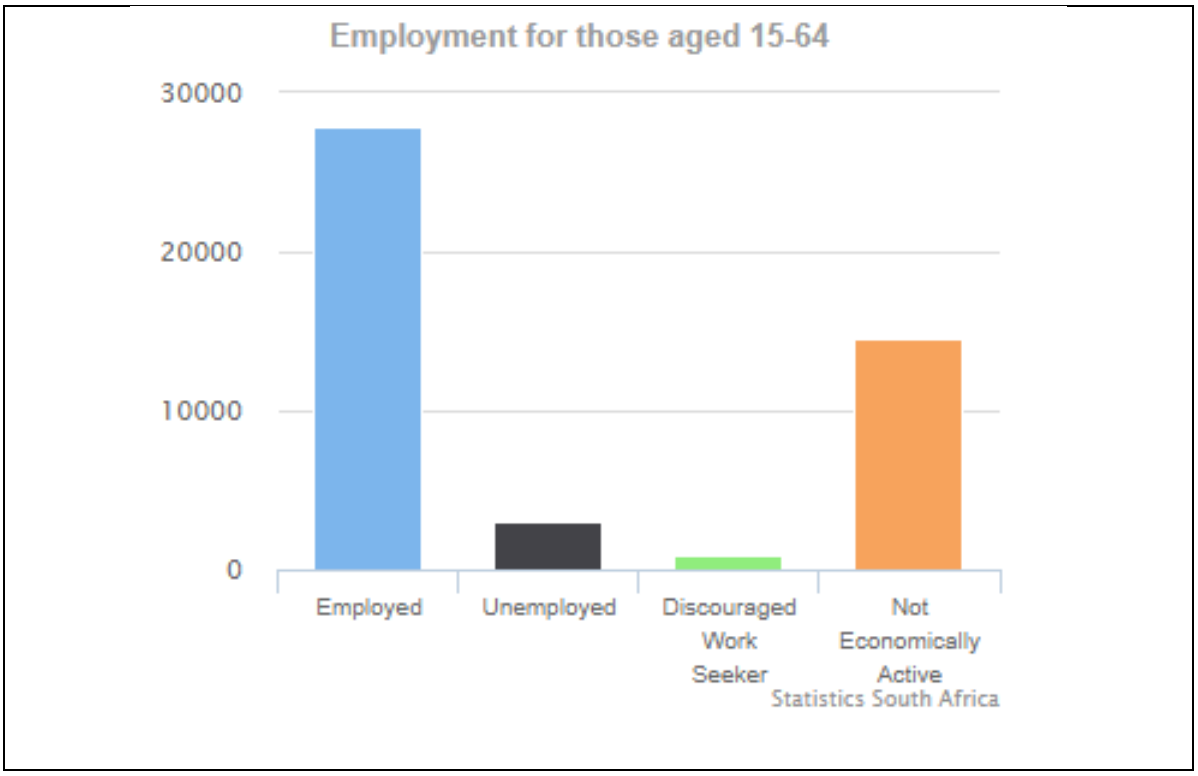
8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

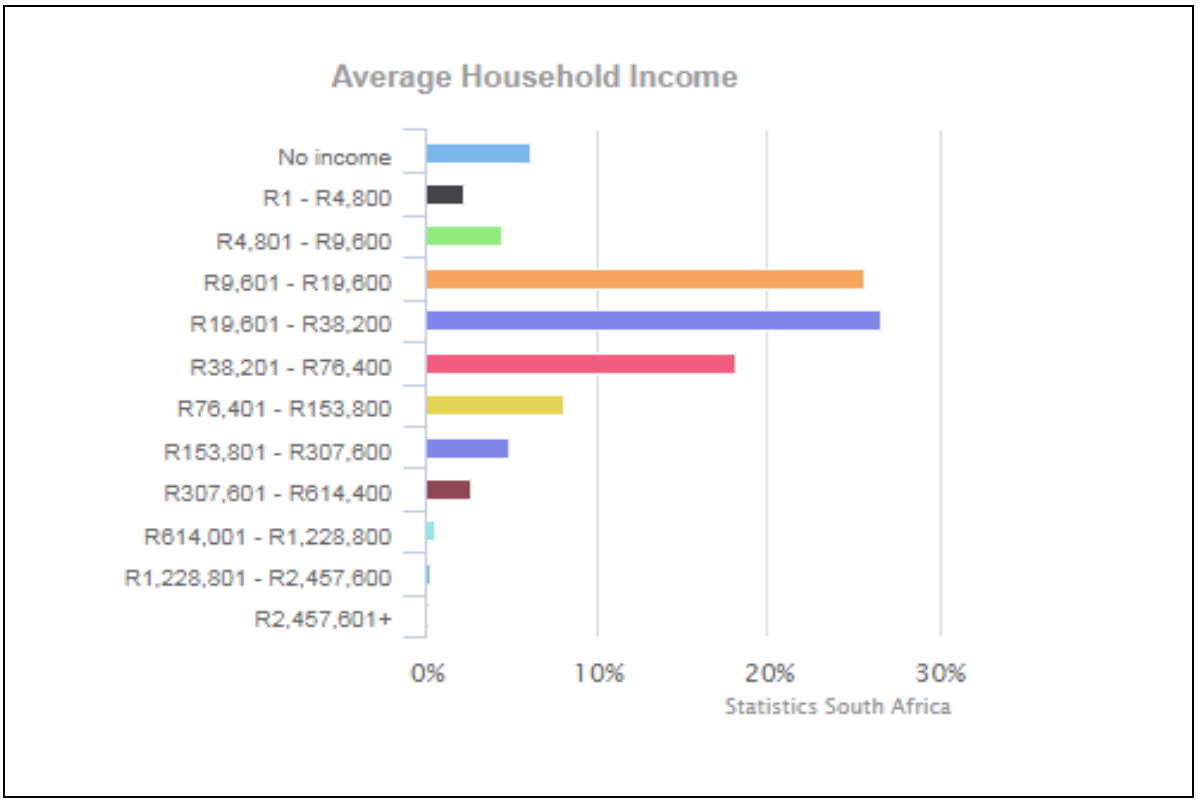
Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

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

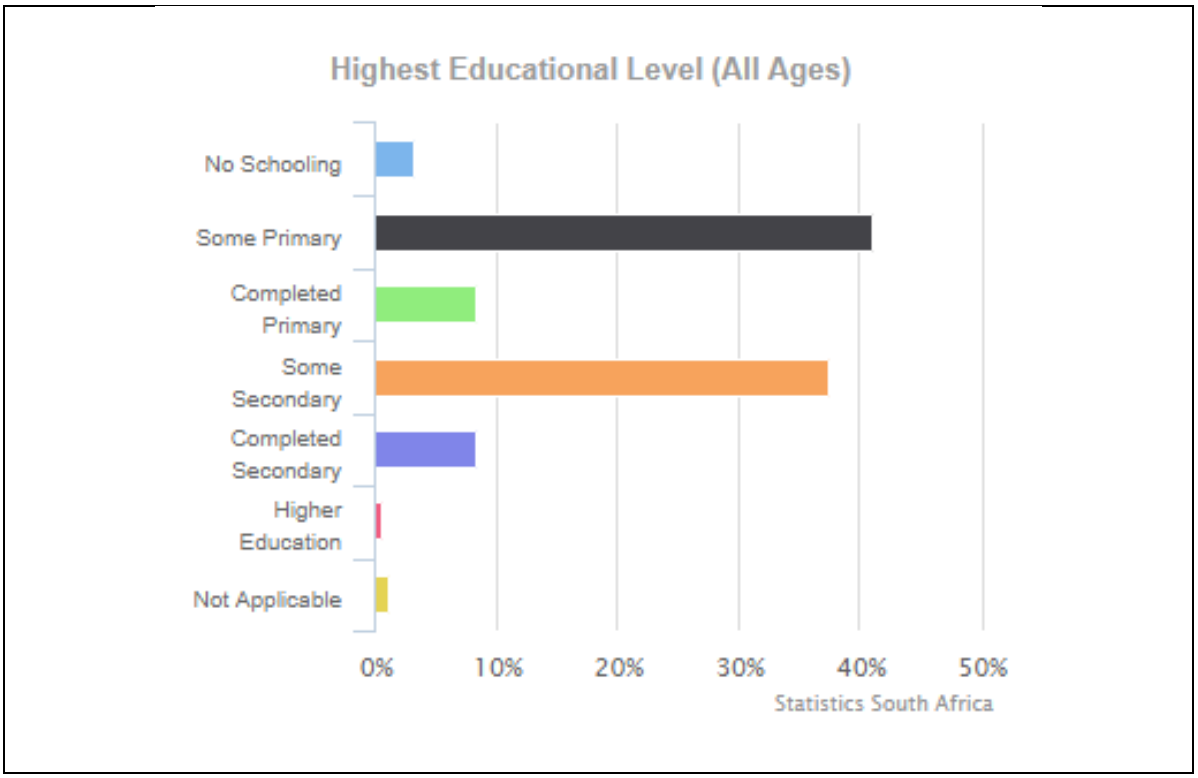
Level of unemployment:



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)	The western portion of the pipeline route falls within a Critical Biodiversity Area 1 (CBA 1) while the eastern portion falls within a Critical Biodiversity Area 2 (CBA 2) and these areas are therefore of high conservation value. The reason for being listed as CBA 1 and CBA 2 is due to the Orange River, the associated wetland areas and floodplain with riparian zone, which also contains remnants of Endangered Lower Gariep Alluvial Vegetation and landscape features such as rocky outcrops.

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	0%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	80%	The majority of the pipeline route is dominated by natural vegetation and consists of sparse, but natural grass layer with scattered shrub and small trees.
Degraded (includes areas heavily invaded by alien plants)	10%	Close proximity of Plangeni Settlement, dumping, dirt tracks and overgrazing.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	10%	Vineyards and agriculture.

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 ✓ **(Aza 3)**							
	Vulnerable							
	Least Threatened ✓ **(Nkb 3)**	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)

According to Mucina & Rutherford (2006) and utilising current mapping resources (National Biodiversity Assessment 2018) the site is indicated to consist of Lower Gariep Alluvial Vegetation (Aza 3) along the riparian zone of the Orange River while the terrestrial portion of the pipeline route consists of Bushmanland Arid Grassland (NKb 3). The former is currently listed as an Endangered (EN) ecosystem while the latter is still listed as being of Least Concern (LC) under the National List of Threatened Ecosystems (Notice 1477 of 2009) (National Environmental Management Biodiversity Act, 2004).

The western portion of the pipeline route falls within a Critical Biodiversity Area 1 (CBA 1) while the eastern portion falls within a Critical Biodiversity Area 2 (CBA 2) and these areas are therefore of high conservation value. The reason for being listed as CBA 1 and CBA 2 is due to the Orange River, the associated wetland areas and floodplain with riparian zone, which also contains remnants of Endangered Lower Gariep Alluvial Vegetation and landscape features such as rocky outcrops. However, given the nature of the development, with the pipeline only transporting untreated water and the small footprint of the proposed pipeline, the extent and magnitude of the impacts should remain fairly low.

The majority of the pipeline route, especially the eastern portion, is still dominated by natural vegetation and consists of a sparse but natural grass layer with scattered shrub and small trees. The western portion of the pipeline route, situated largely within the floodplain or riparian zone of the Orange River and which would normally be dominated by Lower Gariep Alluvial thicket vegetation has been transformed to a significant extent with only small patches of natural vegetation remaining.

Given the surrounding agricultural land use and the proximity of the Plangeni settlement the natural vegetation also contains significant levels of disturbance in many areas. In the western portion, the adjacent vineyards and irrigation leads to significant disturbance while the removal of the riparian thicket, runoff from irrigation and historical land use has resulted in significant degradation of this area. The eastern portion situated in natural areas are mostly affected by the proximity of the Plangeni settlement in terms of refuse dumping, dirt tracks, overgrazing by domestic livestock and increased runoff from the urban area. This has caused substantial degradation of the natural vegetation though elements of conservation value are clearly still present.

Several protected plant species do occur along the pipeline route. These are all relatively widespread, but do still retain a significant conservation value. Where the shrub, *Boscia foetida*, as well as the tree, *Boscia albitrunca* will be affected and will require removal, the necessary permits will have to be obtained to do so. A few protected succulents are so common and widespread that they do not require transplanting though permits will still have to be obtained to remove them. These include *Ruschia sp., Ruschia cononotata, Mesembryanthemum coriarium,* and *Mesembryanthemum guerichianum.* A few other succulents are considered less common, has a higher conservation value and it is recommended that permits be obtained where these will be affected by the pipeline construction and then moved to adjacent areas where they will remain unaffected. These species are *Aloe claviflora, Aloe gariepensis, Aloe hereroensis* and *Orbea lutea* subsp. *vaga.* These species transplant easily and the impact on them should be mitigated by doing a walkthrough survey prior to construction, permits obtained for all affected specimens and those transplanted to adjacent areas where they will remain unaffected.

(Extract from the Ecological & Wetland Assessment. Refer to Appendix D1 for the full report.)

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	*Die Gemsbok*	
Date published	22 February 2023	
Site notice position	**Latitude**	**Longitude**
	28°40' 4.48"S	21° 5' 38.12"E
Date placed	24 February 2023	

A pamphlet distribution process was also undertaken on the 24th of February 2023 to notify residents on Portion 30 of Farm Blaauwskop 36 (Blaauwskop / Plangeni Settlement) of the project.

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.

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)
Cllr Mariana Basson	Kai !Garib Local Municipality Ward Councillor (Ward 8)	Tel: [redacted] Email: [redacted]
The Secretary	Blaauwskop Besproeiingsraad (Landowner: Portion 3 of Farm Blaauwkop 36)	Tel: 054 4911201 Email: kanoneiland@vodamail
Mr A.N. Von Wielligh	Von Wielligh Boerdery CC (Landowner: Erf 136)	[redacted]
Mr A. Phete (Acting Municipal Manager)	Kai !Garib Local Muncipality (Landowner: Portion 30 of Farm Blaauwskop 36)	Tel: 051 4616400 / [redacted] Email: [redacted]

Personal information withheld in terms of the POPI Act (Act 14 of 2013)

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
No comments received to date. The draft BAR is currently being circulated for comment.	

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
Dept. of Water & Sanitation	Mr Abe Abrahams	053 830 8800/6 7600 [redacted]		AbrahamsA@dws.gov.za	Private Bag X6101 KIMBERLEY 8300
Dept. of Roads & Public Works	Dr Johnny. Mac Kay (HOD)	053 839 2277		drpw-info@ncpg.gov.za / [redacted]	P.O. Box 3132 Kimberley 8301
Dept. of Agriculture & Land	Mr Christo Smit			[redacted]	P.O. Box 52 Upington 8800

Authority/Organ of State	Contact person	Tel No	Fax No	E-mail	Postal address
Reform (Regional Office)					
ZF Mgcawu District Municipality	Mr Tinus Galloway	054 337 2800		tgalloway@zfm-dm.gov.za	Private Bag X6039 Upington 8800
Dept. of Forestry, Fisheries and the Environment	Me. Jacoline Mans	060 973 1660		Jmans@dffe.gov.za	26 Olien Street Louisvaleroad Upington 8801
SAHRA	Me. Natasha Higgitt	021 462 4502		nhiggitt@sahra.org.za	P.O. Box 4637 CAPE TOWN 8000
NC Heritage Resources Authority (Ngwao-Boswa Jwa Kapa Bokone)	Mr Ratha Timothy	053 8312537 / 0790369 695		Atimothy520@gmail.com / rtimothy@nbkb.org.za	1 Monridge Office Park Cnr. Kekewich Drive & Memorial Road Kimberley 8300

Personal information withheld in terms of the POPI Act (Act 14 of 2013)

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.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
Construction of an abstraction works and the installation of a water pipeline between the Orange River and the Plangeni Settlement, near Keimoes.	***Direct impacts:*** • Vegetation destruction	Medium (without mitigation) Low (with mitigation)	• The design of the abstraction works should aim to minimise the impact on the flow regime and should incorporate erosion structures such as rock-packs or other suitable structures to prevent erosion around the inlet pipeline. • A suitably qualified ecologist or botanist should undertake a walkthrough survey of the pipeline route prior to construction to identify and locate all protected plants that will be affected by construction. • Where the two tree species (*Boscia albitrunca, Boscia foetida*) will be affected and will require removal, the necessary permits will

Activity	Impact summary	Significance	Proposed mitigation
			have to be obtained to do so. • Several widespread and common protected species are of lower conservation value and permits should be obtained to remove any of these that will be affected by the pipeline. These species consist of *Ruschia sp*., *Ruschia cononotata*, *Mesembryanthemum coriarium*, and *Mesembryanthemum guerichianum*. • A few other succulents are considered less common, have a higher conservation value and it is recommended that permits be obtained where these will be affected by the pipeline construction and then moved to adjacent areas where they will remain unaffected. These species are *Aloe claviflora*, *Aloe gariepensis*, *Aloe hereroensis* and *Orbea lutea* subsp. *vaga*. • Removal of vegetation should also be kept to a minimum. • The disturbance caused by construction will also cause susceptible conditions for further establishment of exotics and the current survey has also indicated this to be the case. It is therefore recommended that weed

Activity	Impact summary	Significance	Proposed mitigation
			eradication be initiated at the construction sites and maintained until rehabilitation has been completed. • The footprint of disturbance and clearance of vegetation must always be kept to a minimum. This is especially relevant where clearance of any riparian vegetation is required along the Orange River or watercourses affected by the pipeline will take place. • Care should be taken to limit unnecessary destruction of the surrounding natural vegetation. • All human movement and activities must be contained within designated construction areas and the planned site access road in order to prevent peripheral impacts on surrounding natural habitat. • Adequate monitoring of weed and invasive species establishment and their continued eradication must be maintained (Appendix B of the Ecological and Wetland Assessment). Where category 1 and 2 weeds occur, they require removal by the property owner according to the Conservation of

Activity	Impact summary	Significance	Proposed mitigation
			Agricultural Resources Act, No. 43 of 1983 and National Environmental Management: Biodiversity Act, No. 10 of 2004. • Vegetation should be allowed to re-establish naturally over disturbed areas.
	• Impact on surface water	High (without mitigation) Low (with mitigation)	• Given the scope of the abstraction works it is unlikely to involve the removal of large volumes of water from the river and should therefore not have any significant impact in terms of flow regime and functioning of the river. • The necessary authorisations should be obtained from the Department of Water and Sanitation (DWS). • The alignment of the pipeline route should attempt to avoid being placed directly within the main channel of the southern drainage system as this will result in significantly higher impacts. • The footprint of the abstraction pipeline and pump plinths should be retained, as far as possible, to a footprint of 100 m². • Disturbance of the banks should be kept to a minimum and erosion remediated where it occurs.

Activity	Impact summary	Significance	Proposed mitigation
			• Where the pipeline will result in the disturbance of these small watercourses, disturbance should be kept to a minimum and the removal of vegetation should also be kept to a minimum. • The disturbance caused by construction will also cause susceptible conditions for further establishment of exotics. It is therefore recommended that weed eradication be initiated where the pipeline will cross over these watercourses and continued until rehabilitation of the pipeline route has been completed. • The geomorphology of the small watercourses (channel, banks and bedrock) should also be re-instated as far as possible, which will also speed up the stabilisation of these systems as it will resemble the downstream watercourse morphology. • Given that these watercourses drain by means of flash floods, substantial erosion may also occur and where this is found to be problematic, the appropriate structures should also be implemented which may include rock-packs, gabions or contouring.

Activity	Impact summary	Significance	Proposed mitigation
			• Only removed vegetation and topsoil should be utilised to rehabilitate the bed of the affected watercourses. • Storm water measures will be implemented in order to manage storm water and this will also prevent erosion. • Daily inspections for the occurrence of surface water pollution and soil pollution are to be undertaken, during the construction phase. • Best practices should be implemented in the case of spillages / pollution / erosion, especially at or near watercourses. • After construction has ceased all construction materials should be removed from the area. • All waste is to be removed from site.
	Indirect impacts: • Loss of topsoil	High (without mitigation) Low (with mitigation)	• The design of the abstraction works should aim to minimise the impact on the flow regime and should incorporate erosion structures such as rock-packs or other suitable structures to prevent erosion around the inlet pipeline. • The soil surface should also be re-instated to the virgin soil level and not depressed or elevated as this will promote erosion and cause flow barriers.

Activity	Impact summary	Significance	Proposed mitigation
			• When excavating trenches the upper 30 cm, or topsoil, should be removed together with the vegetation and stored on the site. These should then be replaced on top of the installed pipeline. Subsoil should be used as backfilling and not as top dressing. The soil surface should also be re-instated to the virgin soil level and not depressed or elevated as this will promote erosion and will hamper integration with the surrounding natural areas. • Topsoil stockpiles should be stored in an approved location and in an approved manner for later re-use in the rehabilitation process, for example: • - Bricks may be placed around the stockpiles, to limit the loss thereof due to rainy events. • - Stockpiles should not be higher than 2 m. • - The gradient of stockpiles should not be greater than 1:1.5. • Dust control measures will be implemented if nuisance dust generation occurs during the construction period. • 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

Activity	Impact summary	Significance	Proposed mitigation
			weekly basis during the construction phase. • If erosion is evident, proper erosion control measures should be implemented as soon as possible. • Return and spread topsoil over rehabilitated areas. • The areas must be rehabilitated. • Any excavated rock may not be left in heaps and must be removed or distributed evenly over the terrain to represent a natural environment. Compacted areas must be ripped. Construction roads not being utilised afterwards must be rehabilitated. • After rehabilitation any excess soil or material should be removed and disposed of at a registered disposal facility. • Erosion should be prevented as far as possible and attended to, as serious erosion may occur at barren areas. • Vegetation should be allowed to re-establish naturally over rehabilitated areas. • The hunting, capturing and trapping of fauna should be prevented by making this a punishable offense during the construction phase of the development.

Activity	Impact summary	Significance	Proposed mitigation
	• Impact on animal life	Medium (without mitigation) Low (with mitigation)	• Open trenches may act as pitfall traps to mammals, reptiles and amphibians and trenches should be daily monitored for trapped animals which should be removed promptly. • In the event of poisonous snakes or other dangerous animals encountered on the site an experienced and certified snake handler or zoologist must remove these animals from the site and re-locate them to a suitable area.
	• Risk of pollution	High (without mitigation) Low (with mitigation)	• Visual inspections for the occurrence of pollution should be undertaken regularly. • Best practices should be implemented in the case of spillages / pollution / erosion. • No waste (general / construction / potential hazardous / etc.) may be dumped in the veld / water features. • Suitable waste bins etc. will be available on site for the temporary disposal of waste. • Waste will be removed from site and disposed of at an authorised landfill site. • DWS should be notified of any spillage / pollution within 24 hours of occurrence within water resources.

Activity	Impact summary	Significance	Proposed mitigation
	• Visual Impact	Medium (without mitigation) Low (with mitigation)	• Record should be kept on site during the construction phase to indicate date of visual inspection, any spillages observed, and manner in which spill was treated. • No waste may be dumped in the veld / watercourses. • All temporary infrastructure related to the construction phase will be removed from site. • Temporary concrete surfaces (if any) will be removed and compacted areas ripped.
	Cumulative impacts:		
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
Alternative 2			
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
Alternative 3			
	Direct impacts:		

Activity	Impact summary	Significance	Proposed mitigation
	Indirect impacts:		
	Cumulative impacts:		
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
No-go option			
No pipeline installation, site remains unchanged.	***Direct impacts:*** • No job creation	Medium	
	Indirect impacts: • Insufficient water infrastructure	Medium	
	Cumulative impacts: • Shortage of water to Postmasburg	High	

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 A (preferred alternative)

The proposed abstraction works and water pipeline is required to provide water to the Plangeni Settlement near Keimoes.
Impacts have been identified and mitigation recommendations made in conjunction with specialist input. Most impacts are anticipated during the construction phase, which will be temporary. Thereafter the site can be rehabilitated to as close as possible to the natural surrounding area. If EMPr recommendations and best practices are implemented and appropriate monitoring takes place during construction, there should be no reason to refuse Environmental Authorisation for this project.

Alternative B

Alternative C

No-go alternative (compulsory)

The no-go alternative, i.e. not constructing the abstraction works and not installing a water pipeline to the Plangeni Settlement, has far more social and basic needs implications. There are also no major impacts anticipated. Through appropriate monitoring and mitigation measures proposed, there is no reason for the no-go alternative to be the preferred alternative.

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
Appendix D_1: Ecological & Wetland Assessment
Appendix D_2: Phase 1 Heritage Impact Assessment

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information
Appendix J_1: Plangeni Civil services Report