Northern Cape Province
DEPARTMENT OF
ENVIRONMENT & NATURE
CONSERVATION

Porofensi Ya Kapa Bokone
LEFAPHA LA TIKOLOGO LE
TSHOMARELO YA TLHAGO

BASIC ASSESSMENT REPORT

THE PROPOSED BRANDVLEI BULK WATER SUPPLY PIPELINE AND RESERVOIR, BRANDVLEI, NORTHERN CAPE

DEPARTMENT OF ENVIRONMENTAL AND NATURE CONSERVATION (DENC)
REF NO: NC/BA/33/NAM/HAM/BRA1/2013 (NCP/EIA/0000247/2013)

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(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.

2. The report must be typed within the spaces provided in the form. The size of the spaces provided are not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.

3. Where applicable **tick** the boxes that are applicable or **black out** the boxes that are not applicable in the report.

4. An incomplete report may be returned to the applicant for revision.

5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.

6. This report must be handed in at offices of the relevant competent authority as determined by each authority.

7. No faxed or e-mailed reports will be accepted.

8. The report must be compiled by an independent environmental assessment practitioner.

9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? YES
If YES, please complete form XX for each specialist thus appointed:
Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail:

The National Environmental Management Act (NEMA, Act 107 of 1998), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority based on the findings of an Environmental Assessment. NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). In the Northern Cape, these powers are delegated to the Department of Environmental & Nature Conservation (DE&NC). According to the regulations of Section 24(5) of NEMA, authorisation is required for the following:

Government Notice R544 listed activities (Listing Notice 1):

11: The construction of:

(i) Canals;
(ii) Channels;
(iii) Bridges;
(iv) Dams;
(v) Weirs;
(vi) Bulk storm water outlet structures;
(vii) Marinas;
(viii) Jetties exceeding 50 square meters in size;
(ix) Slipways exceeding 50 square meters in size;
(x) Buildings exceeding 50 square meters in size; or
(xi) Infrastructure or structures covering 50 square meters or more;

Where such construction occurs within a watercourse or within 32 meters of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.

18: The infilling or depositing of any material of more the 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from
(i) a watercourse;
(ii) the sea;
(iii) the seashore;
(iv) the littoral active zone, an estuary or a distance of 100 meters inland of the high-water mark of the sea or an estuary, whichever distance is greater

Government Notice R546 listed activities (Listing Notice 3):

2: The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres.

16: The **construction** of:
(i) jetties exceeding 10 square metres in size;
(ii) slipways exceeding 10 square metres in size;
(iii) buildings with a footprint exceeding 10 square metres in size; or
(iv) infrastructure covering 10 square metres or more

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.

Project description

It is proposed that a new pipeline and reservoir be constructed to supply the town of Brandvlei with water.

A new pipeline will be constructed from the existing boreholes at the Romanskolk Reservoir, within the servitude of the existing dirt road (OG 86) to the R353 (MR00756), within the servitude of the R353 to the R357, within the servitude of the R357 to the existing reservoir in Brandvlei.

The pipeline will have a diameter of 160mm, and have a peak throughput of 10 liters per second.

An additional reservoir with a volume of approximately 500m^3 (0.5Ml) will be constructed next to the existing reservoir at Brandvlei.

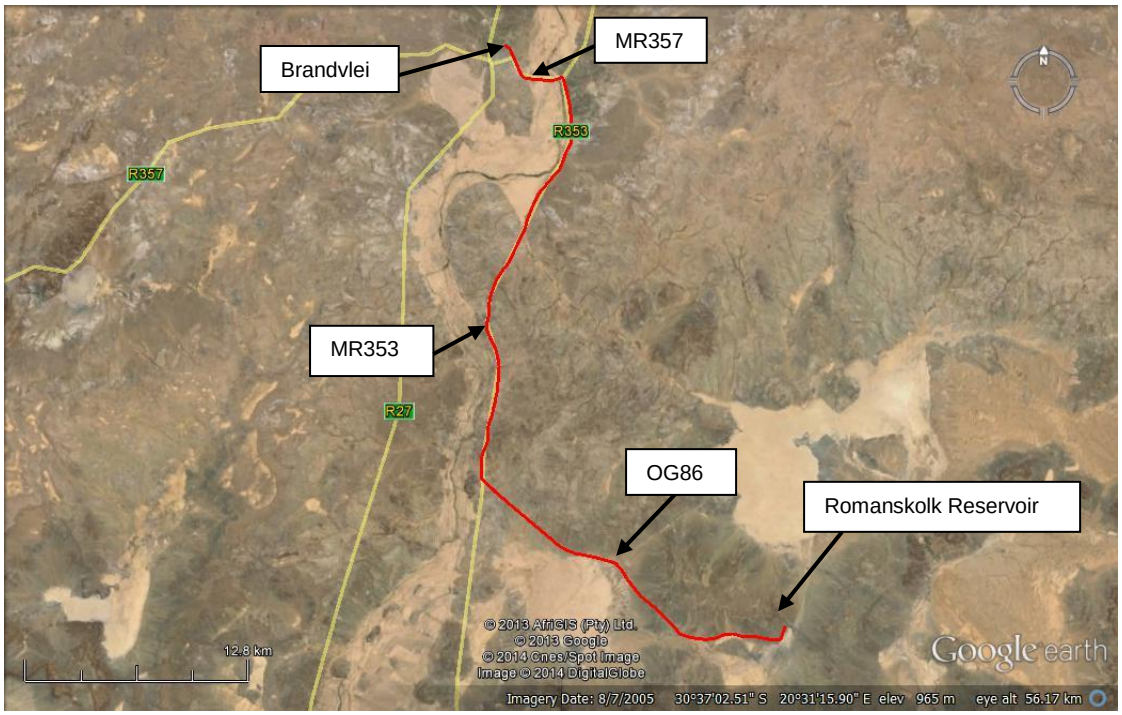

Figure 1: Google Earth view of the site. The pipeline is depicted by the red line.

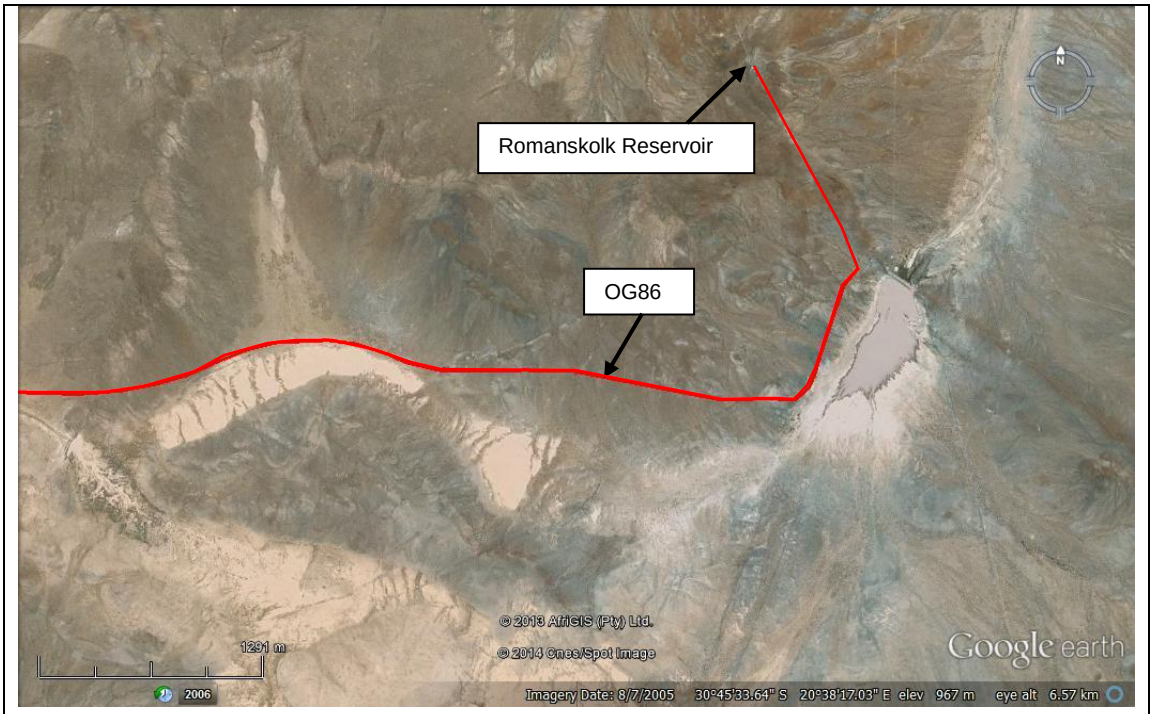

Figure 2: Google Earth view of the start of the pipeline route, from Romanskolk Reservoir and along the OG86.

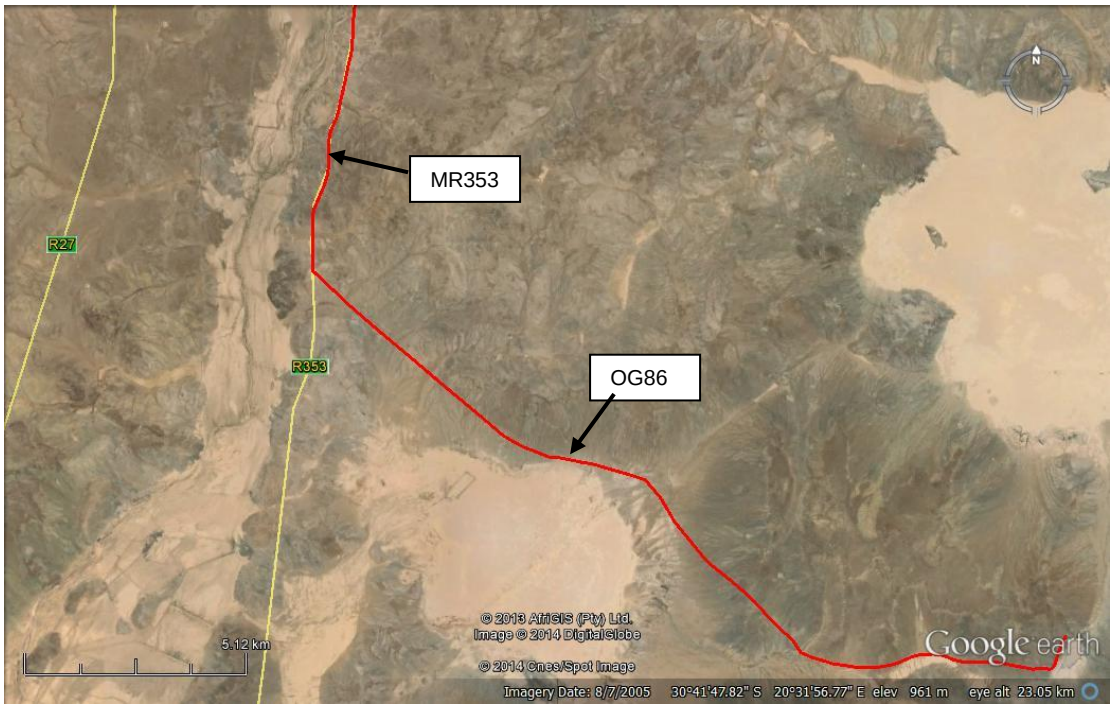

Figure 3: Google Earth view of the pipeline route, from the OG86 onto the R353.

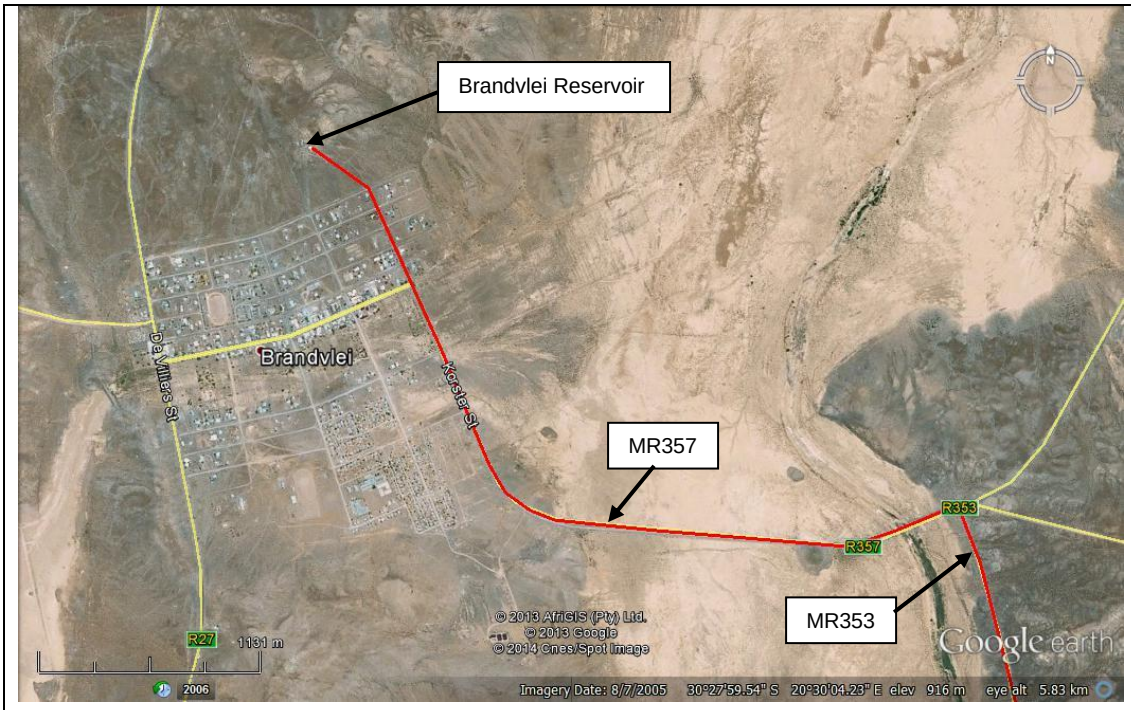

Figure 4: Google Earth view of the end of the pipeline route, with the pipeline route along MR353, MR357 and ending at a new proposed 500m^3 (0.5Ml) will be constructed next to the existing reservoir at Brandvlei.

2. FEASIBLE AND REASONABLE ALTERNATIVES

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

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

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

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

A number of alternatives have been investigated by the engineers and through further feasibility investigations. Please refer to the Engineering Report (**Appendix D1**) for more details on the alternatives addressed below.

Alternative 1: This option aims to abstract groundwater from identified production boreholes BV1 and BV3 in the Sak River Aquifer close to Brandvlei. This option includes the following components:
RO Desalination Plant; Raw Water 0.5 ML Reservoir; Raw Water Supply Line (2,65 km Length); Borehole pump station; Brine Evaporation Ponds (52 000 m2 Surface Area); and High Voltage Electrical Supply Line

However, this was not the preferred alternative as problems with regard to water quality, brine effluent containment and energy cost result in abnormal high unit cost of R9.29 /kL which is problematic in the case of end user affordability.

Alternative 2: The upgrade of Romanskolk existing water supply via replacement of existing 150 mm A/C line through installation of new 160 mm dia. uPVC pipeline along the existing 42 km route. The existing pipeline was constructed over 45 years ago on private property with no registered servitude or way leaves, which need to be addressed by municipality via agreement with land owners. This option shall include construction of a new gravity pipeline, 0.5 ML Storage reservoir, Power supply line, Pre-Treatment plant and Telemetry system.

This is not the preferred alternative as the existing Romanskolk pipe line runs through privately owned farm property and no servitudes were registered during its installation in 1965, as farm owners at that stage agreed on good will. The process to register servitudes through consultation and agreements with land owners are problematic and a time consuming process. There are also no existing routes to the pipeline to perform routine repair and maintenance work.

Alternative 3: The upgrade of Romanskolk existing water supply via replacement of existing 150 mm A/C line with a 200 mm dia. HDPE pipeline by means of Pipe-cracking along the existing 40.5 km route. This option shall also require for servitude or way leaves processes, which need to be addressed by municipality via agreement with land owners. This option shall also include construction of a new gravity pipeline, 0.5 ML Storage reservoir, Power supply line, Pre-Treatment plant and Telemetry system.

Although the Pipe-Cracking option may resolve the problems of servitude registration. However, the high Capital cost (***R 94 241 168.80***) and Unit cost (***R 5.55/kL***) makes this option no longer feasible, with regard to affordability for the local community of Brandvlei and for the local municipality. and is therefore not the preferred alternative.

Alternative 4 (Preferred Alternative): The upgrade of Romanskolk existing water supply via installation of a new 160 mm dia. uPVC pipeline along an alternative 52 km route. This option shall also require no servitude registration and the way-leave application was submitted to the Department of Roads and Public Works for final approval.

This option shall include the construction of a new 52km gravity pipeline, 0.5 ML Storage reservoir, Power

- supply line, Pre-Treatment plant and Telemetry system.

The Romanskolk Alternative Route option is considered the most feasible option. The unit

cost of **R4.73/kL** makes this option affordable for both end users and the local municipality.

The pipeline will also be constructed within the existing servitudes of existing roads, minimising the impact on any biodiversity features. This is therefore the preferred alternative.

No – Go Alternative: The no-go option would the option of not constructing the pipeline. The current status quo will remain.

According to the Biodiversity Assessment (**Appendix D2**), the "No-Go alternative" does not signify any significant biodiversity gain or loss especially on a regional basis. However, it will ensure that none of the potential impacts above occur. The current status quo will remain and there will be no immediate additional impact on the vegetation species or river corridors.

However, it is important to note that the current water supply system to Brandvlei is dated. The old pipeline cannot supply enough water and the system is in poor state of maintenance. Additional water is needed and the proposed activity provides the most viable long term solution. Should the activity not be approved, Brandvlei will have to resort to other measures of water supply (none of these viable at present). In addition this will lead to major maintenance works to the current system which may lead to additional (uncontrolled) environmental impacts.

There would be no potential jobs for jobs to be created during the construction or operational phase.

3. ACTIVITY POSITION

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

List alternative sites if applicable. N/A

	Latitude (S):		Longitude (E):	
Alternative:				
Alternative S1[1] (preferred or only site alternative)				
Alternative S2 (if any)				
Alternative S3 (if any)	°	‘	°	‘

In the case of linear activities:

Alternative:	Latitude (S): ° ‘		Longitude (E): ° ‘	
Alternative S1 (preferred or only route alternative)				
• Starting point of the activity	30°	44.668‘	20°	38.914 ‘
• Middle point of the activity	30°	38.586‘	20°	28.828‘
• End point of the activity	30°	27.423‘	20°	29.238‘
Alternative S2 (if any)				
• Starting point of the activity	°	‘	°	‘
• Middle point of the activity	°	‘	°	‘
• End point of the activity	°	‘	°	‘
Alternative S3 (if any)				
• Starting point of the activity	°	‘	°	‘
• Middle point of the activity	°	‘	°	‘
• End point of the activity	°	‘	°	‘

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

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

4. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	**Size of the activity:**
Alternative A1[2] (preferred activity alternative)	
Alternative A2 (if any)	
Alternative A3 (if any)	m^2

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	52km
Alternative A2 (if any)	42km
Alternative A3 (if any)	40.5km

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

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

5. SITE ACCESS

Does ready access to the site exist?	YES
If NO, what is the distance over which a new access road will be built	

Describe the type of access road planned:

The pipeline will be constructed within the servitude of existing roads. The Romanskolk Reservoir (start of pipeline) and the Brandvlei Reservoir (end of pipeline route) all have existing access roads.

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

6. SITE OR ROUTE PLAN

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

The site or route plans must indicate the following:

6.1 the scale of the plan which must be at least a scale of 1:500;
6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
6.4 the exact position of each element of the application as well as any other structures on the site;
6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
6.6 all trees and shrubs taller than 1.8 metres;
6.7 walls and fencing including details of the height and construction material;
6.8 servitudes indicating the purpose of the servitude;
6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
- rivers;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or invested with alien species);

6.9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
6.10 the positions from where photographs of the site were taken.

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

7. SITE PHOTOGRAPHS

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

8. FACILITY ILLUSTRATION

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

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	Approximately R66 568 777.28
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 phase of the activity?	Unknown at this stage
What is the expected value of the employment opportunities during the development phase?	Unknown at this stage
What percentage of this will accrue to previously disadvantaged individuals?	To be determined
How many permanent new employment opportunities will be created during the operational phase of the activity?	12
What is the expected current value of the employment opportunities during the first 10 years?	R1 200 000.00
What percentage of this will accrue to previously disadvantaged individuals?	Unknown at this stage

9(b) Need and desirability of the activity

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

The overall purpose of the application is to provide potable water to the Brandvlei community. Due to the population growth of the town, the pipeline and reservoir are required to meet future water demand.

Due to the age of the existing water supply line, regular pipe breakages occur, resulting in a loss of water.

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

The overall purpose of the application is to provide potable water to the Brandvlei community.

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

The overall purpose of the application is to provide potable water to the Brandvlei community. Due to the population growth of the town, the pipeline and reservoir are required to meet future water demand.

The activity may also provide temporary job opportunities during the construction phase

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

BENEFITS:			
1.	Will the land use / development have any benefits for society in general?	YES	
2.			
	Explain: The activity will provide potable water to the Brandvlei community		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES	
4.			
	Explain: The overall purpose of the application is to provide potable water to the Brandvlei community. Due to the population growth of the town, the pipeline and reservoir are required to meet future water demand. The activity may also provide temporary job opportunities during the construction phase		

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Date:
The National Heritage Resources Act, 1999 (Act 25 of 1999)	SAHRA – Northern Cape	

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase? YES
If yes, what estimated quantity will be produced per month? Unknown at this stage

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

Construction solid waste will be disposed of at the nearest municipal landfill site.

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

Construction waste will be consolidated on site and removed to the nearest registered landfill site as often as required.

Will the activity produce solid waste during its operational phase? NO
If yes, what estimated quantity will be produced per month?
How will the solid waste be disposed of (describe)?

Solid waste removal will be disposed of in the municipal waste stream.

Where will the solid waste be disposed 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 relevant legislation? NO
If yes, inform the competent authority and request a change to an application for scoping and EIA.
Is the activity that is being applied for a solid waste handling or treatment facility? NO
If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? NO
If yes, what estimated quantity will be produced per month? N/A
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:

N/A

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere? NO
If yes, is it controlled by any legislation of any sphere of government? N/A YES NO
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
If no, describe the emissions in terms of type and concentration:

N/A

11(d) Generation of noise

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

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
If no, describe the noise in terms of type and level:

N/A

12. WATER USE

N/A. The activity is the construction of a bulk water supply pipeline and reservoir to provide potable water to Brandvlei

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: N/A litres

Does the activity require a water use permit from the Department of Water Affairs? NO

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

13. ENERGY EFFICIENCY

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

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

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

2. Paragraphs 1 - 6 below must be completed for each alternative**. The Paragraphs 1 - 6 will be the same for each of the alternatives described below (unless otherwise specified) as the general site is the same.**

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

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

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

~~Flat~~	1:50 – 1:20	~~1:20 – 1:15~~	~~1:15 – 1:10~~	~~1:10 – 1:7,5~~	~~1:7,5 – 1:5~~	~~Steeper than 1:5~~

Alternative S2 (if any):

~~Flat~~	1:50 – 1:20	~~1:20 – 1:15~~	~~1:15 – 1:10~~	~~1:10 – 1:7,5~~	~~1:7,5 – 1:5~~	~~Steeper than 1:5~~

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. LOCATION IN LANDSCAPE

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

~~2.1 Ridgeline~~
~~2.2 Plateau~~
~~2.3 Side slope of hill/mountain~~
~~2.4 Closed valley~~
~~2.5 Open valley~~
~~2.6 Plain~~

2.7 Undulating plain / low hills -

~~2.8 Dune~~

~~2.9 Seafront~~

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative S1:		**Alternative S2 (if any):**		**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)	[redacted]	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas		NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)		NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil		NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)		NO	YES	NO	YES	NO

Soils with high clay content (clay fraction more than 40%)	[redacted]	NO		YES	NO		YES	NO
Any other unstable soil or geological feature		NO		YES	NO		YES	NO
An area sensitive to erosion		NO		YES	NO		YES	NO

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

4. GROUNDCOVER

Indicate the types of groundcover present on the site: The proposed pipeline will follow existing road reserves

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

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s). Please refer to Table 3 of the Biodiversity Assessment (**Appendix D2**).

~~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.

According to the Biodiversity Assessment (**Appendix D2**), in accordance with the 2006 Vegetation map of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006) two broad vegetation types are expected in the vicinity of the proposed bulk water supply route and new reservoir They are:

- Bushmanland Basin Shrubland (NKb 6) – covering almost all of the pipeline route, and
- Bushmanland Vloere vegetation (AZi 5) – on and along the water bodies encountered in this area.

According to the *National list of ecosystems that are threatened and in need of protection* (GN 1002, December 2011) these vegetation types are currently classified as follows "Least Threatened".

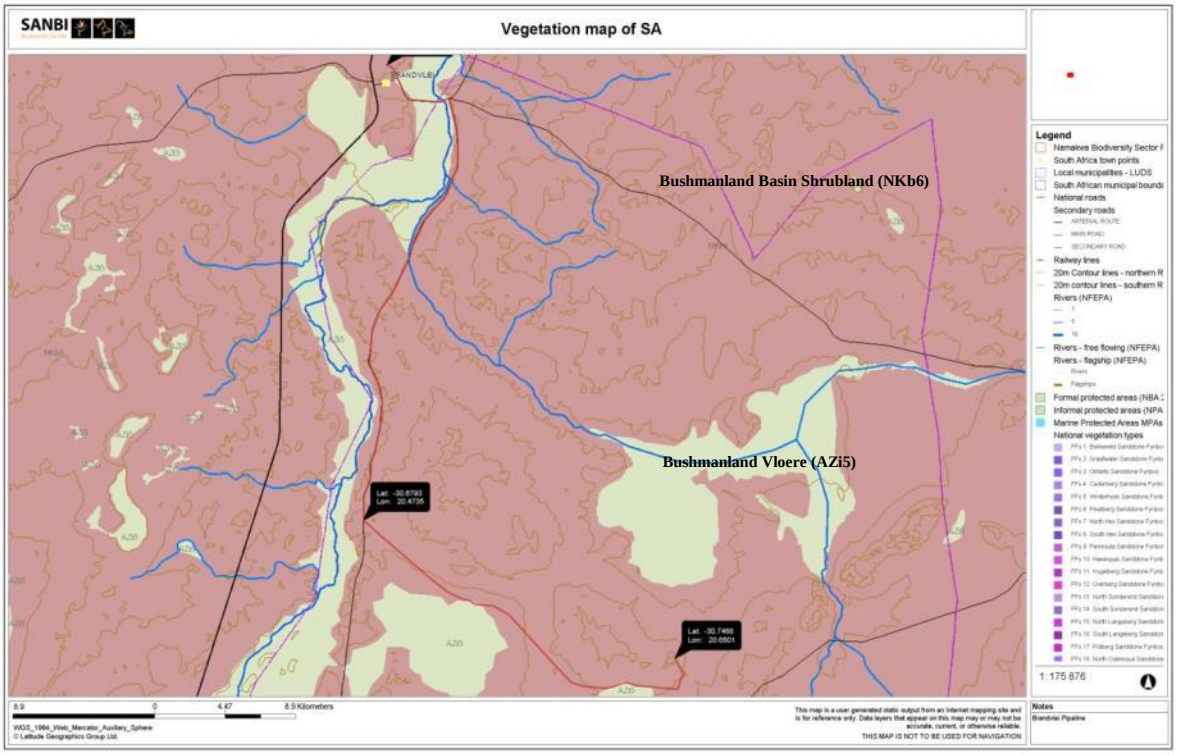

Figure 5: Vegetation map of SA, Lesotho and Swaziland (2006)

Please refer to Section 6.8 of the Biodiversity Assessment (**Appendix D2**), for a description of the vegetation encountered along the pipeline route.

5. LAND USE CHARACTER OF SURROUNDING AREA

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

5.1 Natural area
~~5.2 Low density residential~~
5.3 Medium density residential – within Brandvlei
~~5.4 High density residential~~
~~5.5 Informal residential~~[A]
~~5.6 Retail commercial & warehousing~~
~~5.7 Light industrial~~
~~5.8 Medium industrial~~[AN]
~~5.9 Heavy industrial~~[AN]
~~5.10 Power station~~
~~5.11 Office/consulting room~~
~~5.12 Military or police base/station/compound~~
~~5.13 Spoil heap or slimes dam~~[A]
~~5.14 Quarry, sand or borrow pit~~
~~5.15 Dam or reservoir~~
~~5.16 Hospital/medical centre~~
5.17 School – within Brandvlei
~~5.18 Tertiary education facility~~
~~5.19 Church~~
~~5.20 Old age home~~
~~5.21 Sewage treatment plant~~[A]
~~5.22 Train station or shunting yard~~[N]
~~5.23 Railway line~~[N]
~~5.24 Major road (4 lanes or more)~~[N]
~~5.25 Airport~~[N]
~~5.26 Harbour~~
5.27 Sport facilities
~~5.28 Golf course~~

~~5.29 Polo fields~~
~~5.30 Filling station~~ [H]
~~5.31 Landfill or waste treatment site~~
~~5.32 Plantation~~
5.33 Agriculture -
5.34 River, stream or wetland –
~~5.35 Nature conservation area~~
~~5.36 Mountain, koppie or ridge~~
~~5.37 Museum~~
~~5.38 Historical building~~
~~5.39 Protected Area~~
~~5.40 Graveyard~~
~~5.41 Archaeological site~~
~~5.42 Other land uses (describe)~~

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

If YES, specify and explain:	N/A

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

If YES, specify and explain:	N/A

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

If YES, specify and explain:	N/A

6. CULTURAL/HISTORICAL FEATURES

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

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

Briefly explain the findings of the specialist:	According to Heritage Impact Assessment (**Appendix D3**), archaeological heritage is very visible in this seemingly arid and inhospitable landscape. Extensive scatters of MSA tools were documented on the rocky slopes below the Romanskolk Reservoir, and a possible 19th Century LSA site was encountered on a dolerite ridge about 100m east of the dirt road. While these sites have been rated as having High (3A) significance, they will not be impacted by proposed construction activities. Low, medium and higher density scatters of MSA and LSA tools were also encountered alongside OG 86, but the remains are located outside and away from the road reserve, where the proposed water pipeline will be buried. No graves were encountered along the proposed pipeline route. No rock engravings were found. There will be no impact on the built environment, cultural landscape or scenic routes. The pipeline will be buried underground, while the proposed new Brandvlei Reservoir will be constructed alongside the existing Brandvlei Reservoir and infrastructure that includes a Telkom tower, roads and fences.

	NO
YES	

Will any building or structure older than 60 years be affected in any way?
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?
If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT (Please refer to **Appendix E2** for proof of Advertisements and Site notices)

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

(a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  (i) the site where the activity to which the application relates is or is to be undertaken; and
  (ii) any alternative site mentioned in the application;
(b) giving written notice to—
  (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  (v) the municipality which has jurisdiction in the area;
  (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  (vii) any other party as required by the competent authority;
(c) placing an advertisement in—
  (i) one local newspaper; or
  (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  (i) illiteracy;
  (ii) disability; or
  (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

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

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where

further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE MEASURES

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

5. COMMENTS AND RESPONSE REPORT

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

6. AUTHORITY PARTICIPATION

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

List of authorities informed:

The following authorities were notified of the application.

- SAHRA Northern Cape
- Northern Cape Department of Agriculture and Land Reform
- Department of Water Affairs – Northern Cape
- Department of Roads and Public Works
- Namakwa District Municipality
- Hantam Local Municipality

Please refer to **Appendix E5** for the I&AP list and proof of notifications.

List of authorities from whom comments have been received:

No comments were received during the initial round of public participation from the authorities.

7. CONSULTATION WITH OTHER STAKEHOLDERS

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

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

Has any comment been received from stakeholders? YES

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

Two comments were received during the initial Public Participation round (please refer to **Appendix E4** for the Comments and Response Report for the Draft Basic Assessment Report).

SECTION D: IMPACT ASSESSMENT

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

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

A number of issues were raised by Interested and Affected Parties thus far, but these are mostly with regards to requirements during the construction phase of the activity. These have been noted and will be included in the EMP

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

Please refer to Appendix E4 for the Comments and Response Report for the Draft Basic Assessment Report.

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

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

Alternative (preferred alternative)

Direct impacts:

Archaeological heritage

According to Heritage Impact Assessment (**Appendix D3**), archaeological heritage is very visible in this seemingly arid and inhospitable landscape.

Extensive scatters of MSA tools were documented on the rocky slopes below the Romanskolk Reservoir, and a possible 19th Century LSA site was encountered on a dolerite ridge about 100m east of the dirt road. While these sites have been rated as having High (3A) significance, they will not be impacted by proposed construction activities.

Low, medium and higher density scatters of MSA and LSA tools were also encountered alongside OG 86, but the remains are located outside and away from the road reserve, where the proposed water pipeline will be buried.

No graves were encountered along the proposed pipeline route.

No rock engravings were found.

There will be no impact on the built environment, cultural landscape or scenic routes.

The pipeline will be buried underground, while the proposed new Brandvlei Reservoir will be constructed alongside the existing Brandvlei Reservoir and infrastructure that includes a Telkom tower, roads and fences.

Biodiversity

Direct loss of vegetation type and associated habitat due to construction and operational activities:

- Impact on threatened or protected ecosystems

According to the *National list of ecosystems that are threatened and in need of protection* (GN 1002, December 2011), promulgated in terms of the National Environmental Management Biodiversity Act (NEM: BA), Act 10 of 2004 both vegetation types are considered **Least Threatened**. However, although both of these vegetation types still show good representation of its original distribution, both are also in urgent need of further formal conservation. The Namakwa District Biodiversity Sector Plan aims to ensure that such conservation targets areas are identified and maintained. Although the proposed development will impact not impact on any identified critical biodiversity areas (CBA's) it will impact on an ecological support area (ESA) identified (the river corridor associated with the Sak River. However, the proposed route follows existing roads within the ESA, and thus areas which are already disturbed to some degree. In terms of placement, the proposed route will most probably have the least impact on the ESA.

The proposed route is perceived as being well chosen/located and should not constitute a significant impact on any of the identified terrestrial conservation priority areas. In addition any other proposed route will have to cross the ecological support area (ESA) and will most likely have a more significant impact on the ESA (there are no other roads, thus such a route will have to cross natural land and additional roads will have to be constructed to allow for maintenance).

The impact on threatened or protected ecosystems is thus rated as medium-low.

- Special habitats

According to the Biodiversity Assessment (**Appendix D2**), the vegetation itself is not considered to belong to a threatened or protected ecosystem and is classified as "Least threatened". The Namakwa District Biodiversity Sector Plan aims to ensure that such conservation targets areas are identified and maintained and the proposed development will not impact on any identified terrestrial CBA.

The Namakwa District Biodiversity Sector Plan aims to ensure that such conservation targets areas are identified and maintained. Although the proposed development will not impact on any identified critical biodiversity areas (CBA's) it will impact on an ecological support area (ESA) identified (the river corridor associated with the Sak River). However, the proposed route follows existing roads within the ESA, and thus areas which are already disturbed to some degree. In terms of placement, the proposed route will most probably have the least impact on the ESA.

The possible impact on the ephemeral streams are also considered to be short term and very localised which cannot be constituted as significant impacts. The flatness of the basin area has resulted in networks of seasonal surface drainage lines (or ephemeral streams) draining rainwater towards the pans or river systems. These drainage lines are mostly poorly defined and seldom associated with any riparian vegetation. There only function being to drain the basin landscape. At present these features can hardly been seen as fulfilling the function of a river ecological system.

The impacts associated with the proposed development location is perceived as generally well located and will not impact on any of the areas targeted as terrestrial conservation priority areas, and even though it will impact on Ecological Support areas, the impact is well mitigated through the specific placement.

The impact on threatened or protected ecosystems is thus rated as medium-low.

- Corridors and/or conservation networks

According to the Biodiversity Assessment (**Appendix D2**), looking at the larger site and its surroundings the vegetation still shows excellent connectivity with the surroundings. The placement of the proposed route along existing roads (and taking into account that it will be a temporary disturbance) is perceived as the best route option (especially taking cumulative impacts into account). Even though there will be a very localised and temporary impact on the ecological support area associated with the Sak River, the placement of the pipeline (next to existing roads) negate this impact to a large degree.

It is thus considered highly unlikely that the proposed activity (temporary in nature) will have any significant additional impacts on corridors or conservancy networks.

The impact is thus rated as low.

- Protected Species

No species of conservation concern was recorded in terms of the 2013-1 Red List of species for South Africa and no species protected in terms of the National Forests Act (NFA) of 1998 (Act 84 of 1998) was encountered during the study.

Even though 10 species protected in terms of the NCNCA was encountered, and the likelihood is high that individuals of these species may be impacted during the construction phase, it is considered unlikely that the construction activities will have any significant impact on these populations. Especially since none of the identified species are listed in the South African Red data list (all classified as of Least Concern).

The impact is thus rated as low.

Freshwater ecosystems

According to the Biodiversity Assessment (**Appendix D2**), only one significant river system falls within the footprint of the proposed pipeline route, namely the Sak River. However, the surface of the Brandvlei area and surroundings are generally very flat, and water does not run away easily. This has resulted in many small ephemeral streams that drain the basin into the Sak River or other seasonal water bodies or salt pans in the vicinity.

The salt pans itself are significant seasonal features and that they are renowned bird sanctuaries after good rains. It is not expected that the short term temporary impact associated with the installation of the pipeline will have any significant impact on the few seasonal ephemeral drainage lines that was encountered along the route. Almost all of these seasonal ephemeral streams are very small (generally less than 2 m across and only in a few

instances where they associated with some indications of riparian vegetation). However, the Sak River is a very prominent and large seasonal river that runs just east of Brandvlei.

The proposed pipeline route will cross the Sak River diagonally and will be attached to an existing bridge structure as was the original pipeline. As result the impact on the Sak River will also be very low and temporary of nature.

Because of the specific route, the temporary and short term nature of the proposed impact the overall impact on water courses and wetlands are expected to be **low**. However, all construction work in the vicinity of these features must be done during the dry season to further minimise possible impact.

Figure 6: Bridge crossing over Sak River. As in the photograph above, the proposed pipeline will be attached to the bridge

Figure 7: Typical ephemeral stream crossing along the OG86.

Figure 8: View of a salt pan to the south of OG86. The proposed pipeline will be located within the road reserve of the OG86, and is therefore not expected to have any impact on the salt pans.

Visual and noise impacts

The activity is not expected to impact on the visual character of the area as the pipeline will be buried. The presence of construction plant during the construction phase will have a visual

impact, but this will only be during the construction phase and is expected to have a low impact.

The activity will create some noise during the construction phase of the development. Noise mitigation measures will be dealt with in the EMP. With the mitigation measures, as described in the EMP (**Appendix F**), the potential noise impacts are also expected to be **negligible**.

Indirect impacts:

According to the Biodiversity Assessment (**Appendix D2**), the following possible indirect impacts were associated with the proposed project:

- Establishment of a temporary construction associated infrastructure or facilities.
- Temporary storage areas (e.g. pipe's and fittings and concrete mixing material).
- Waste management.

It is likely that the proposed project will have indirect impacts, but it is not considered to add significant load on the natural environment. It is considered that indirect impacts will have a much lower impact than direct impacts with very little cumulative effect on the environment. In addition indirect impacts can be reduced through good environmental control during construction.

The impact is considered to be low.

Cumulative impacts:

According to the Biodiversity Assessment (**Appendix D2**), it can be concluded that:

- The construction will be temporary of nature over a short period of time and will be located within the road reserve along existing roads.
- All aspects of the proposed project will be located outside of any identified CBA, but will impact on the ESA's associated with the Sak River. However, the route location mitigates the significance of this impact together with the fact that the impact will be of a temporary nature.
- The vegetation encountered on is considered least threatened with good connectivity and good representation.
- The potential impact plant species of conservation concern is expected to be low and can be further reduced through dedicated topsoil re-allocation.
- The potential impact on fauna and avi-fauna is considered to be low.
- The potential impact on corridors is regarded as low, which could be reduced through good environmental control.

The proposed project will thus have a temporary and localised impact, which should not result in significant additional permanent impacts (apart from the new reservoir at Brandvlei).

On the whole the cumulative impact is considered to be medium-low.

3. ENVIRONMENTAL IMPACT STATEMENT

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

Alternative A (preferred alternative)

The following is a summary of the potential impacts, and their ratings, after mitigation:

Construction phase.

Potential impacts on archaeological heritage – **Low (negative), unlikely.**

Impact on threatened or protected ecosystems – **Medium- Low (negative), Probable.**

Special habitats – **Medium** - **low (negative), Possible.**

Corridors and/or conservation networks - **Low (negative), highly unlikely.**

Protected species – **Low (negative), unlikely.**

Freshwater ecosystems **– Negligible, highly unlikely, only during construction phase.**

Job creation – **Low (Positive)**, definite.

Noise impact - **Negligible, definite, only during construction phase.**

Visual impact – **Low (negative), definite, during construction**

Operational Phase

Potential impacts on archaeological heritage – **No impact expected**

Loss of vegetation and associated habitat - **No impact expected**

Impact on threatened vegetation - **No impact expected**

Freshwater ecosystems **– No impact expected**

Job creation – **Low (Positive), possible**

Noise impact - **No impact expected**

Visual impact – **Negligible, definite, permanent**

Decommissioning

The project as proposed does not require 'decommissioning' or 'closure', as such the potential impacts thereof is considered irrelevant.

No-go alternative (compulsory)

The no-go option would the option of not constructing the pipeline. The current status quo will remain.

According to the Biodiversity Assessment (**Appendix D2**), the "No-Go alternative" does not signify any significant biodiversity gain or loss especially on a regional basis. However, it will ensure that none of the potential impacts above occur. The current status quo will remain and there will be no immediate additional impact on the vegetation species or river corridors.

However, it is important to note that the current water supply system to Brandvlei is dated. The old pipeline cannot supply enough water and the system is in poor state of maintenance. Additional water is needed and the proposed activity provides the most viable long term solution. Should the activity not be approved, Brandvlei will have to resort to other measures of water supply (none of these viable at present). In addition this will lead to major maintenance works to the current system which may lead to additional (uncontrolled) environmental impacts.

No jobs will be created during the construction or operational phase.

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
Is an EMPr attached?	YES

The EMPr must be attached as Appendix F.

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

N/A

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:

The following is a list of recommended conditions and mitigation measures from a biodiversity and heritage perspective:

Heritage:
With regard to the proposed construction of the Brandvlei Bulk Water Supply Pipeline and Reservoir, the following recommendations are made:

- Replacement of the (old) pipeline between the Romanskolk Reservoir and OG 86 must stay within the existing servitude (as planned)
- Construction of the new pipeline along the OG 86 till R353 must remain within the road reserve (as planned).
- Should any unmarked human burials/remains or ostrich eggshell water flaskcaches be uncovered during construction activities, these must immediately bereported to the archaeologist (Jonathan Kaplan 082 321 0172), or Ms Katy Smutsat the South African Heritage Resources Agency (021 462 4502). Burials, etcmust not be removed or disturbed until inspected by the archaeologist.

Biodiversity:
The following mitigation measures are recommended:

- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must be developed by a suitably experienced Environmental Assessment Practitioner.
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and the Biodiversity study recommendations as well as any other conditions which might be required by the Department of Environmental Affairs.
- An application for a flora permit for the possible temporary disturbance of listed species identified in terms of Schedule 1 and 2 of the NCNCA. Please note that all Aloe species and other viable transplantable species should be transplanted as part of a search & rescue operation before topsoil removal.
- The top 10-20 cm layer of soil (which should contain 80-90% of the seed bearing

material and bulbs) must be removed from the footprint and stored separately. The topsoil and vegetation must be replaced over the disturbed soil to provide a source of seed and a seed bed to encourage re-growth of plant species.
- An integrated waste management system must be implemented during the construction phase.
- All alien vegetation must be removed from along the footprints of the construction area.
- Indiscriminate clearing of areas must be avoided.
- Construction in the vicinity of the ephemeral streams should take place in the dry season.

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information