PROVINCE OF THE EASTERN CAPE
DEPARTMENT OF ECONOMIC DEVELOPMENT
AND
ENVIRONMENTAL AFFAIRS

BASIC ASSESSMENT REPORT

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable 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	NO √

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

Rosedale Libode Bulk Water Supply Pipeline

The proposed project will involve the construction a bulk gravity pipeline and a rising main to convey water from a proposed 30 Mℓ Water Treatment Works at Rosedale to Libode town and villages. The salient quantities include:

- A new 34km pipeline is provided to link the existing 3Mℓ Rosedale reservoir with Libode. The pipeline is divided into three sections. These being:
  - A 11.3km gravity main from the 3Mℓ Rosedale reservoir to a new booster pump station
  - A 11.2km rising main from the pump station to a new command reservoir
  - A 12km gravity main from the new command reservoir to Libode.
- A pump station with standby capacity capable of lifting 53 ℓ/s over a total pressure head of 250 m, housed in a brick type pump house.
- 2 x 1 Mℓ reservoirs and a 250 kℓ reservoir.

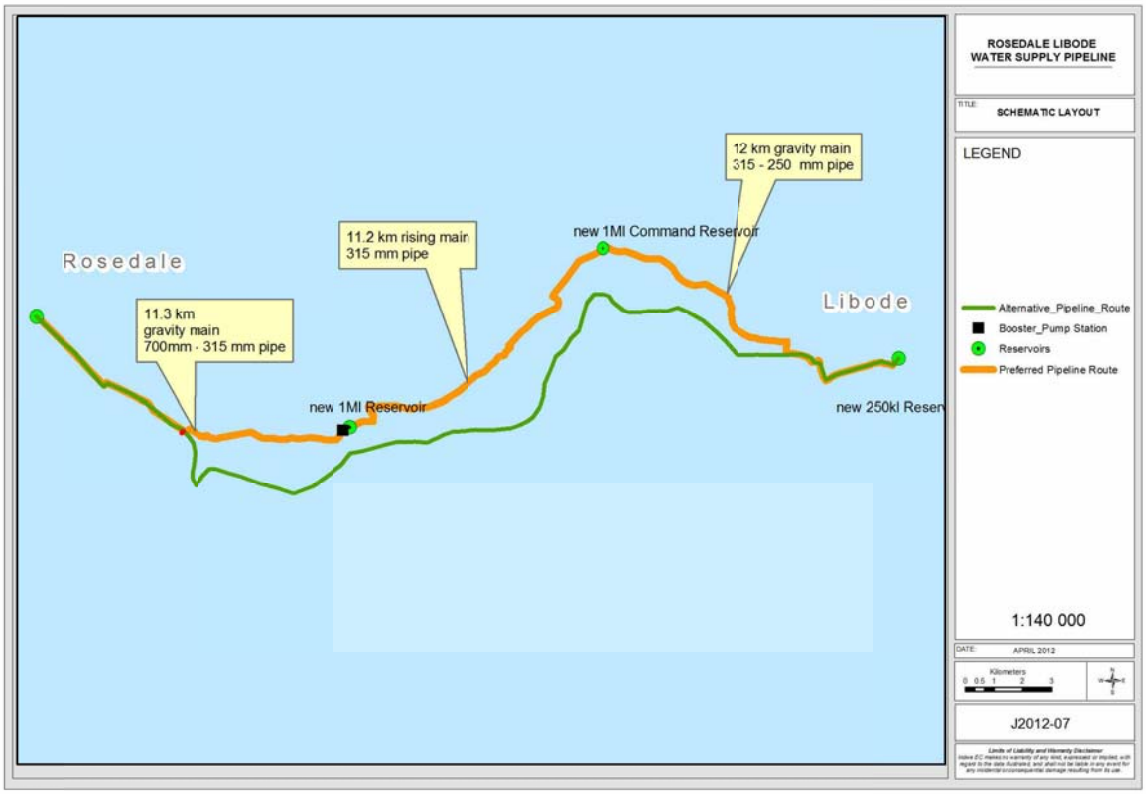

Figure 1: Schematic diagram of proposed infrastructure.

Design criteria – Bulk Pipelines

Bulk pipelines have been routed to follow the most practical route which often involves running the pipes next to roads. When sizing the gravity and rising mains the following limitations were adopted:

- The velocity within the pipe was limited to a maximum of 1.5 m/s. This is done to firstly reduce friction losses, and the pumping head. This further reduces the head that will be produced under water hammer conditions, as the head generated is directly proportional to the velocity.
- The bulk gravity lines are predominantly GRP (Glass reinforced polyester) or MPVC pipes. The pumping main will be constructed using a combination of uPVC and GRP pipes.
- Galvanised Mild Steel pipes will be used at river crossings and rock outcrops.
- A combination of GRP and steel pipes will be used for areas where the pressures exceed 200 kPa.
- Isolating valves will be placed at strategic positions on the bulk pipelines, to allow for sections to be isolated whilst the remainder of the scheme can still operate.
- Scour valves will be placed at the low points to aid with draining of the system.
- Double acting air-valves will be placed at:
    - Hydraulic high points
    - On long horizontal sections with a maximum spacing of 600m between air valves.
- Non-return valves will be used to protect the pumps under the condition of sudden pump shut down. Non-return valves prevent large columns of water from flowing back towards the pumps, which may result in damage to the pumps and fittings.
- A surge anticipator will be placed in the pump station to prevent damage to the pumps should the pumps trip causing the control valve to shut rapidly.
- Pipeline markers will be used to indicate the pipeline routes.

The pipeline starts as a 700mm diameter GRP pipe capable of carrying 422 l/s. The velocity is limited to 1.0 m/s, which is below the maximum 1.5 m/s stipulated in the DWA Design Guidelines. The pipe size is reduced as water is drawn off by the existing and future developments in Mthatha. For these draw-offs, reducer tees will be provided with a valve and blank flange. The flanges will be cased in concrete to prevent any unauthorised removal thereof. Connections to these tees can only be made when Phase 2 of the project is operational. As the pipeline leaves Mthatha it is reduced to a 315mm diameter MPVC pipe and stays this size to the new booster pump station.
The new rising main from the booster pump station has been sized as a 315mm diameter uPVC pipe. uPVC was selected over MPVC for this section of the pipeline as a result of uPVC being better suited to handle the negative pressures caused by water hammer when the pumps suddenly shut down (e.g. when there is a power outage). The initial portion of the rising main will need to be constructed using GRP pipes as the water hammer pressures are higher than what can be accommodated by uPVC pipes. The rising main ends at the new 1Mℓ command reservoir.

The last section of the pipe runs from the new 1Mℓ command reservoir to Libode. The pipeline ends at the three Libode reservoirs. Water will therefore be supplied to these reservoirs from Mthatha from where it will be reticulated via the existing town reticulation network. A tee is provided just before Libode and a branch line is constructed to supply water to a new 250kℓ reservoir which will be used as the connection point for when Phase 3 (village reticulation) of the project is implemented.
The pipe size starts at a 315mm MPVC pipe at the command reservoir. It is reduced to a 160mm diameter MPVC pipe at the tee to the new 250kℓ reservoir. The section from the tee to the 250kℓ reservoir is a 250mm diameter MPVC pipe. A section of this pipe will need to be GRP because of the excessive pressures when the pipeline cross the valley just west of Libode.

Design Criteria Booster - Pump Station

There will be a booster pump station situated at 810m MSL pumping water against a static head of 215m to the new 1Mℓ command reservoir situated at 1025m MSL. A backup pump will be provided in order provide cover in the event of pump failure. The pumps will lift 53ℓ/s over a total dynamic head of approximately 250m.

A 1Mℓ reservoir is needed at the pump station to act as a pump sump. The pump sump has been designed for 20hrs of pumping with the inflow to the sump being 45ℓ/s and the outflow being 53ℓ/s.
All pumps will be fitted with a low flow switch to turn them off when the 1Mℓ command reservoir becomes full.
The pump station will require an Eskom connection. Applications to Eskom for the connection are being finalised. A standby generator will be provided at the pump station to cater for those times when the Eskom supply is down.

Design Criteria - Reservoirs

A new 1Mℓ command reservoirs will be provided at an elevation of 1025m above MSL. This will allow the water to be distributed to the villages beyond Libode without any further booster pump stations.
A new 250kℓ reservoir is provided just west of Libode. This reservoir will be used to supplement Libode's water supply as well as to supply the villages to be included in Phase 3 of the project.

Listed activities triggered by the project are tabulated below:

Listing Notice Number	Activity No.	Development Activity
544, 18 June 2010	9i	Portion of the project involves the construction of a water pipeline with a diameter exceeding 0.36m for a distance exceeding 1000m outside a road reserve.
544, 18 June 2010	11	It is likely that infrastructure exceeding 50m2 (pump stations) will be built within 32 m of a water course
544, 18 June 2010	18	In excess of 5 cubic metres of sand or rock may be removed from a watercourse for trenching and securing the pipeline
546, 18 June 2010	13(c)(ii)	More than an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation will be cleared outside urban areas.
546, 18 June 2010	16 (iv)	Infrastructure covering an area exceeding 10m2 will be constructed within a watercourse within a critical biodiversity area.

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;
(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.

Various alternative routes for the bulk water pipeline have been considered See Figure 2 and Appendix:

Various alternative routes for the bulk water pipeline have been considered:

- Routing through Mthatha. The obvious route to follow would be alongside the gravel road coming from Rosedale, through Hillcrest and ending at Maydene Farm. However, SANRAL's engineers advised that there are plans to use portion of this road from the N2 towards Maydene Farms as on N2 bypass. Further, this road reserve is quite congested with existing services (e.g. Telkom, etc.).
- **Alternative A1 Preferred Route** – The preferred route as is illustrated in Figure 1 generally runs parallel to the R61, on its northern side, but with the closest point to the R61 being at least 400m away. The exception to this is at Libode where the pipe needs to cross from the north to the south side of the R61. Discussions with SANRAL have been held and it has been agreed that this crossing takes place under the bridge of the Mtakatje River just west of Libode. The north side of the R61 was chosen for the pipe route as the terrain on the south side of the R61 is extremely steep which will make construction difficult and introduce excessive pipe classes to accommodate the very high pressures. The route follows existing access roads where practical.
- **Alternative A2** Following the R61 road from Mthatha to Libode. This route is where the majority of the pipeline would be constructed within the road reserve of the R61 (i.e. within 30m of the centre line). Discussions with SANRAL however have rendered this route unpractical due to the intended upgrade of the R61 as part of the Wild Coast Toll Road project and the existing congestion with existing services within the road reserve

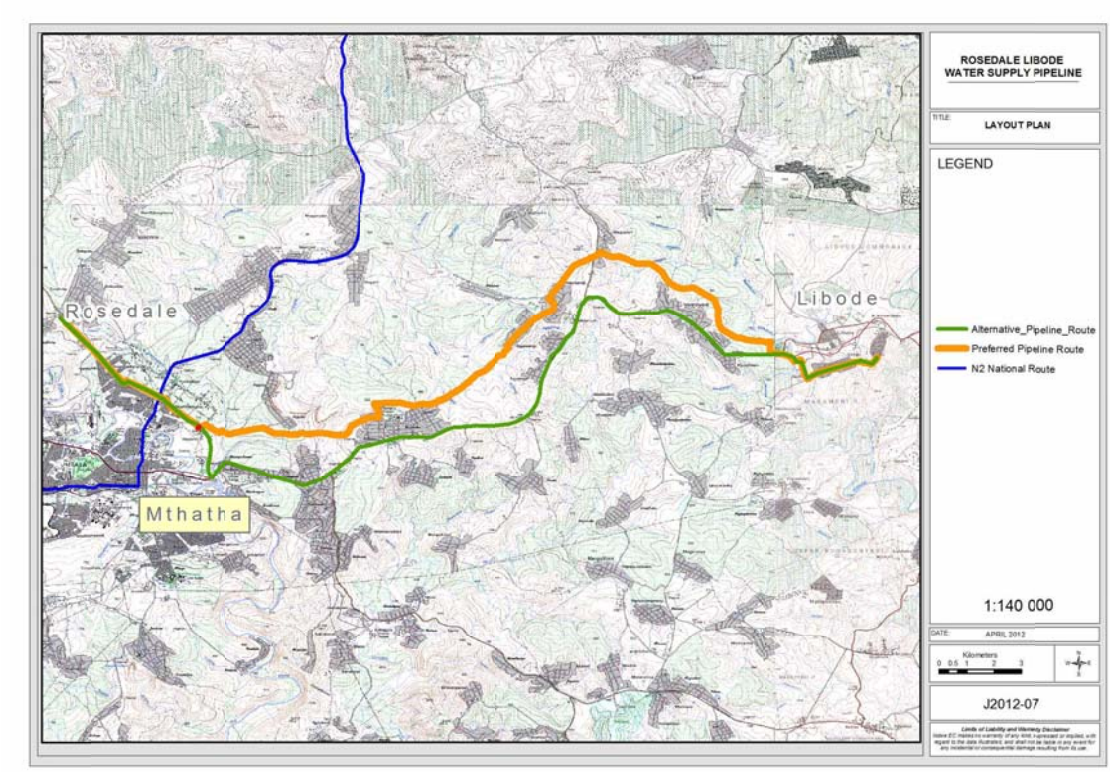

Figure 2: Layout Plan illustrating the alternative routes 9Alternative A1 in orange and Alternative A2 in green) considered for the application.

3. ACTIVITY POSITION

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

Alternative:

	Latitude (S):		Longitude (E):	
Alternative S1[1] (preferred or only site alternative)	[redacted]			
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	31°	32.25208‘	28°	45.89573‘
• Middle point of the activity	31°	32.99572‘	28°	54.32448‘
• End point of the activity	31°	33.03406‘	29°	2.027092‘
Alternative S2 (if any)				
• Starting point of the activity	31°	32.25208 ‘	28°	45.89573 ‘
• Middle point of the activity	31°	32.737 ‘	28°	53.943 ‘
• End point of the activity	31°	33.03406‘	29°	2.027092‘
Alternative S3 (if any)				
• Starting point of the activity	[redacted]			
• 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. See overleaf

[1] “Alternative S..” refer to site alternatives.

	Longitude		Latitude	
m	o		"	
0	28	45.89573	o	"
500	28	46.08354	31	32.25208
1000	28	46.28825	31	32.46894
1500	28	46.49406	31	32.675
2000	28	46.69188	31	32.88024
2500	28	46.89055	31	33.09117
3000	28	47.08875	31	33.30152
3500	28	47.327	31	33.51222
4000	28	47.6012	31	33.56667
4500	28	47.8754	31	33.70112
5000	28	48.07817	31	33.8354
5500	28	48.32796	31	34.03502
6000	28	48.57862	31	34.20073
6500	28	48.8063	31	34.3655
7000	28	49.07166	31	34.40176
7500	28	49.36561	31	34.47361
8000	28	49.67396	31	34.48908
8500	28	49.96785	31	34.43243
9000	28	50.26338	31	34.45451
9500	28	50.56784	31	34.51046
10000	28	50.87743	31	34.5135
10500	28	51.19034	31	34.51176
11000	28	51.49237	31	34.52653
11500	28	51.67952	31	34.52253
12000	28	51.96234	31	34.31763
12500	28	52.16331	31	34.20198
13000	28	52.13459	31	34.10635
13500	28	52.45035	31	33.91845
14000	28	52.75974	31	33.90828
14500	28	53.05726	31	33.94671
15000	28	53.35551	31	33.93786
15500	28	53.62154	31	33.86524
16000	28	53.86171	31	33.72225
16500	28	54.08594	31	33.54784
17000	28	54.32448	31	33.35727
17500	28	54.53413	31	33.19034
18000	28	54.72075	31	32.99572
18500	28	54.86998	31	32.82062
19000	28	55.08035	31	32.60801
19500	28	55.3057	31	32.40746
20000	28	55.57695	31	32.2202
20500	28	55.52329	31	32.08222

	Longitude		Latitude	
m	o		"	
21000	28	55.6823	31	31.86062
21500	28	55.85487	31	31.6363
22000	28	56.02074	31	31.40972
22500	28	56.30423	31	31.18408
23000	28	56.55932	31	31.06504
23500	28	56.84834	31	30.93638
24000	28	57.1413	31	31.01724
24500	28	57.44408	31	31.10663
25000	28	57.7072	31	31.16116
25500	28	57.88019	31	31.27638
26000	28	58.13885	31	31.50025
26500	28	58.43838	31	31.64772
27000	28	58.7005	31	31.66645
27500	28	58.85	31	31.81705
28000	28	58.87155	31	32.04132
28500	28	59.0279	31	32.30777
29000	28	59.30489	31	32.52664
29500	28	59.6135	31	32.64461
30000	28	59.92098	31	32.69626
30500	28	59.97358	31	32.72229
31000	28	0.280849	31	32.94335
31500	28	0.506022	31	32.9961
32000	28	0.581305	31	33.07484
32500	28	0.775746	31	33.32836
33000	28	1.066954	31	33.36769
33500	28	1.36815	31	33.26479
34000	28	1.670765	31	33.18308
34500	28	2.027092	31	33.10957

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) [redacted]

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

Alternative: **Length of the activity:**

Alternative A1 (preferred activity alternative) 34 500 m

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

Alternative A2 (if any)	33 000m
Alternative A3 (if any)	m

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)	103 500m^2
Alternative A2 (if any)	99 000m^2
Alternative A3 (if any)	m^2

5. SITE ACCESS

Does ready access to the site exist?	YES	NO
If NO, what is the distance over which a new access road will be built	14.5 km	

Describe the type of access road planned:

Existing access roads that provide access the villages in the area will be used where practical. During the construction phase, a TLB, excavator and a pipeline supply truck will require access along all trenches.

During the operational phase, access for maintenance will be required to the reservoir sites and along the servitude of the pipeline. This will be for a 2 x 4 bakkie and will be a track no wider than 3 metres. No actual road area will be cleared of vegetation and no layer works or actual road works are envisaged. Vehicle access across stream crossings will not be permitted and maintenance vehicles will have to travel around the catchment on existing roads in order to access the other side of the stream.

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.

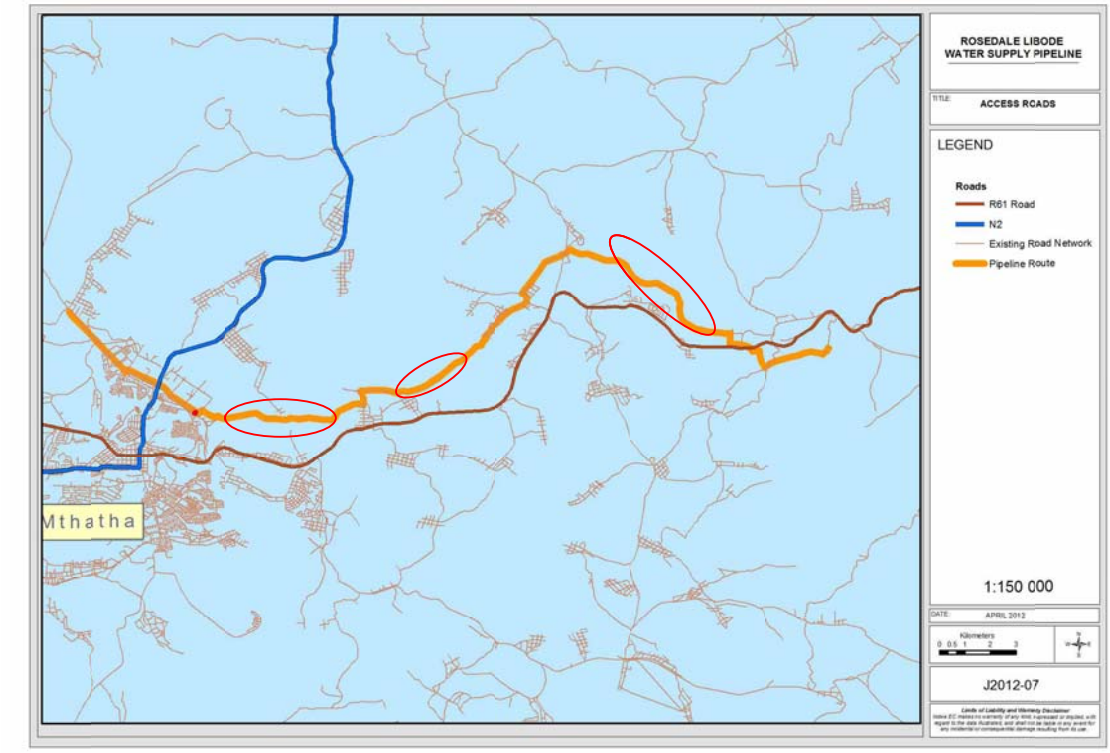

Figure 3: Existing access roads and the preferred route (Alternative A1). Areas within circles currently require access.

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 50metres 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 1.8metres;

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 100metres 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 1metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and

6.10 the positions from where photographs of the site were taken.

7(a) SITE DESCRIPTION

Describe the site on which the activity would take place:

Administrative

The study area all falls within the OR Tambo District Municipality, Eastern Cape. The pipeline route crosses the King Sabata Dalindyebo (KSD) Local Municipality in the west around Mthatha. For the most part, the pipeline route falls within the Nyandeni Local Municipality.

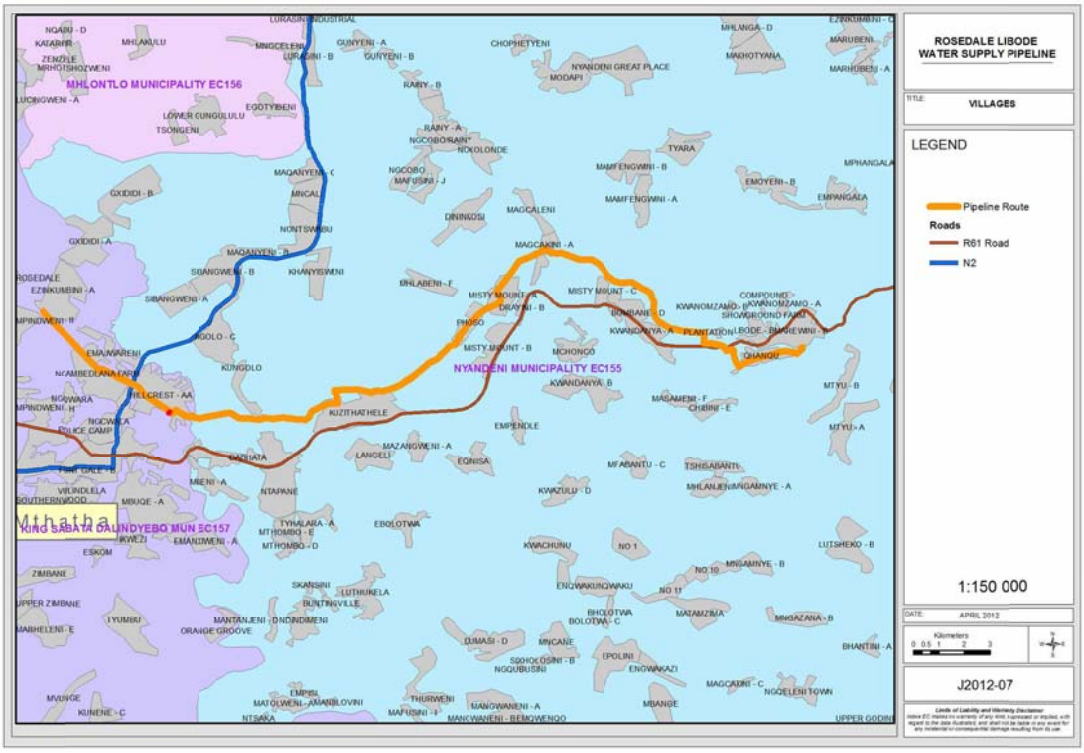

Figure 4: Villages and Settlement within the study area.

Rosedale occurs to the north of the Mthatha CBD. The pipeline route will pass through the northern residential suburbs of Mthatha (Ncambedlana, Hillcrest, Maydene Farm). The section of the proposed pipeline closer to Mthatha is, however, characterised by peri-urban development After Maydene Farm, it passes through rural areas with interspersed settlements and is the majority of the route. Affected rural villages along the route of the preferred route include:

- Khuzithathele
- Phoso
- Misty Mount
- Magcakini
- Qhanqu

The majority of the pipeline route passes through predominantly rural countryside, where the population resides in subsistence rural villages and scattered communities typical of the Eastern Cape.

The town of Libode is located approximately 30 km east of Umtata. Libode's population is approximately 5000 people. Libode is a small administrative and infrastructural hub serving the rural communities of the region.

The majority of land along the route of the pipeline is state-owned land administered by the Department of Rural Development and Land Reform. Within the Mthatha area, the pipeline will fall on roadways under the jurisdiction of the King Sabata Dalyindyebo Municipality. The pipeline will cross the N2 National Road in Mthatha. This section of land is administered by the South African National Roads Agency.

Climate

According to SA Explorer (http://www.saexplorer.co.za/south-africa/climate/umtata_climate.asp) Umtata normally receives about 556mm of rain per year, with most rainfall occurring mainly during summer. It receives the lowest rainfall (6mm) in June and the highest (87mm) in March. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Umtata range from 19.4°C in July to 25.8°C in February. The region is the coldest during July when the mercury drops to 5.8°C on average during the night.

Topography

The topography of the study area is that of undulating rolling hills which become steeper to the East towards Libode town. Beyond Libode, towards Port St Johns, the topography becomes very undulating with deeply incised river valleys. Around Mthatha slopes are fairly flat. Throughout the preferred route of the pipeline there are no slopes that exceed a gradient of 1:5.

Geology and Soils

The geology of this area comprises comprises sandstones and brownish-red and grey mudstones of the Beaufort Group. soils are deeply leached, sandy and clay loams with organically rich dark topsoil. The erodibility of the soils is fairly high.

Drainage

Various rivers, streams and drainage lines are intersected by the pipeline. Most noticeable is the Corana River to the East of Mthatha and the Mtakatye River to the West of Libode (Figure 5). A total of six permanent water courses (streams and rivers) are crossed by the proposed pipeline. Wetlands do exist in the study area, although none are within the proposed servitude for the pipeline.

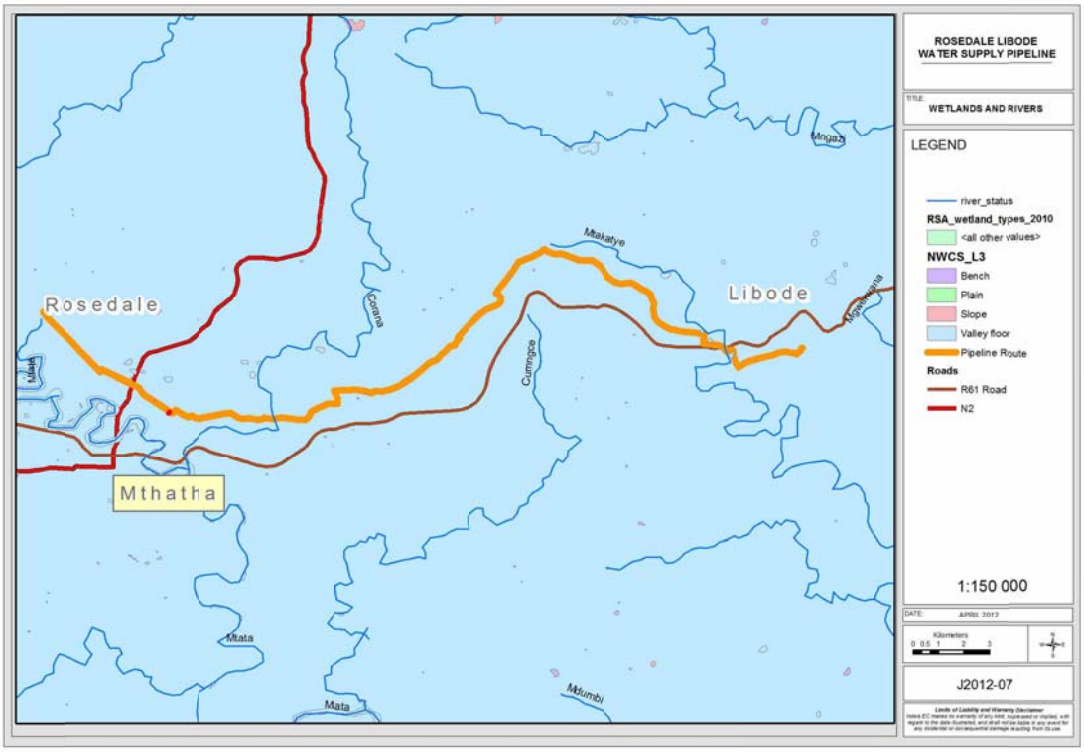

Figure 5: Major rivers and wetlands in the vicinity of the study area.

Biodiversity Conservation Status

According to Berliner & Desmet (2007), the Eastern Cape Biodiversity Conservation Plan (ECBCP) designates the preferred pipeline route (Alternative A1) as falling across Towns and Settlement and areas designated as Critical Biodiversity Area (CBA 2). There a no CBA 1 areas traversed by the either of the alternative pipeline routes (Figure 6).

Land use management objectives for CBA 2 areas are to maintain the landscape in a "near natural state."

The Alternative A2 will not cross any CBA areas.

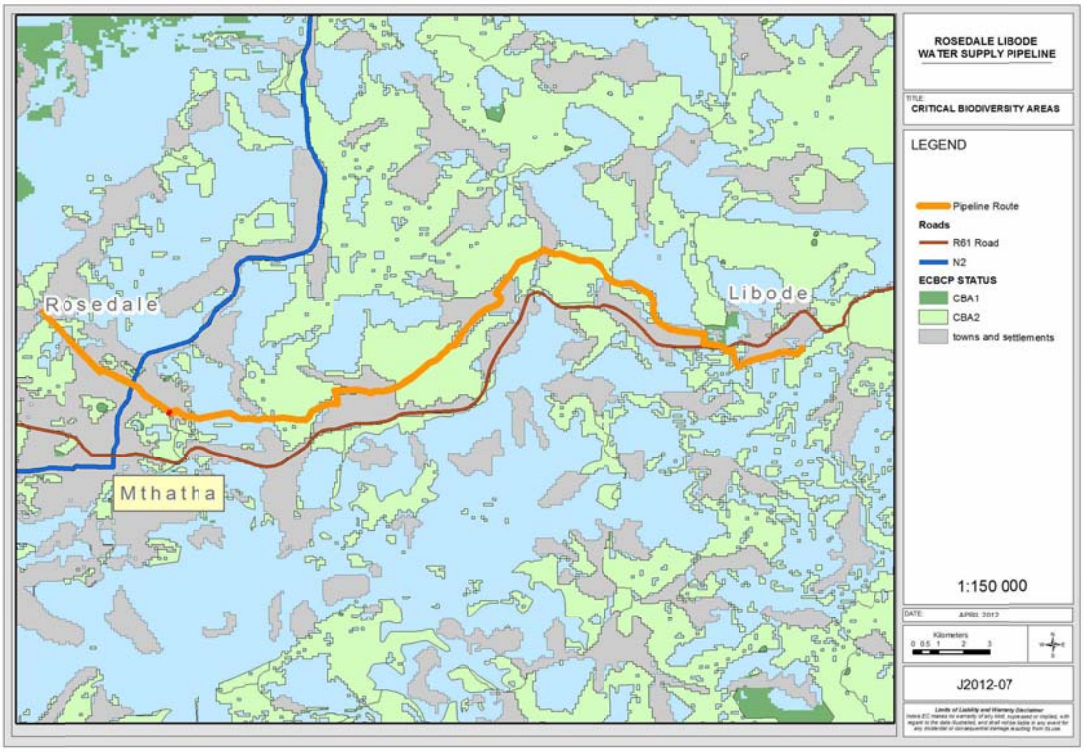

Figure 6 The Eastern Cape Biodiversity Conservation Plan illustrating areas of biodiversity importance within the study area.

Vegetation

Vegetation along the majority of the study area consists of open grasslands with a general absence of large woody indigenous tree species. Around some of the villages some exotic trees such as Eucalyptus and wattle as well as shrubs such as lantana occurs in the natural
landscape.

Mucina & Rutherford (2006) classify the dominant vegetation types as being traversed by the proposed pipeline as Mthatha Moist Grassland and Bhisho Thornveld (Figure 7). Both of these vegetation types are classified as Vulnerable and Least Threatened respectively.

Mthatha Moist Grassland is composed of undulating plains and hills supporting species poor, sour, wiry grassland with *Eragrostis plana* and *Sporobolus africana*; that in good condition is dominated by *Themeda triandra*. This vegetation unit is considered Endangered. Its conservation target is 23%. Only a small fraction is statutorily conserved in the Luchaba and Nduli Wildlife Reserves. More than 40% of the unit is already transformed by cultivation and plantations or by dense rural human settlements. Fallow cultivated lands possibly constitute another estimated 25%. Erosion levels are high. Shifting cultivation have caused continuous disturbance of the soil surface and poor grazing management has led to dominance of unpalatable grasses and weedy, mostly alien, herbs.

Bhisho Thornveld tends to occur in the steeper sections and is more Savanna like and with *Acacia karroo* as the dominant woody species.

Those steeper areas which typically have small rocky outcrops have *Aloe ferox* species.

Figure 7: Vegetation categories as defined by Mucina & Rutherford (2006).

Mammals and faunal species

Mammalian species of conservation significance that could potentially occur in the study area include:

- Juliana's golden mole (*Neamblosomus juliana*)
- Rough-haired golden mole (*Chrysospalax villosus*)
- African marsh rat (*Dasymys incomtus*)
- Angoni vlei rat (*Otomys angoniensis*)
- Vlei rat (*Otomys irroratus*)
- African clawless otter (*Aonyx capensis*)
- Spotted-necked otter (*Lutra maculicollis*)
- Marsh mongoose (*Atilax paludinosus*)
- Giant Bullfrogs (*Pyxicephalus adspersus*);
- Red Data avifauna, with particular reference to the African Grass Owl (*Tyto*
- *capensis*), the Secretarybird (*Sagitarius serpentarius*) and the African Marsh
- Harrier (*Circus ranivorus*).

With the high prevalence of disturbance associated with the dense settlement in the villages and towns, it is likely that the any resident mammalian populations are small. Many of the abovementioned species are associated with wetlands, all of which have been avoided by the proposed pipeline route.

7(b) SITE PHOTOGRAPHS

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

8. FACILITY ILLUSTRATION

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

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 95 million	
What is the expected yearly income that will be generated by or as a result of the activity?	nil	
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?	Estimated 50 jobs	
What is the expected value of the employment opportunities during the development phase?	Unknown	
What percentage of this will accrue to previously disadvantaged individuals?	100%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	1	
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?	100%	

9(b) Need and desirability of the activity

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

NEED

The rural villages around Libode Town (36 in total) do not currently have a sustainable water supply and do not have water provided to RDP standard (i.e. within 200m of each household). This bulk water supply pipeline will ultimately form part of the vital component infrastructure to supply these villages. Currently these villages are sourcing their water from streams and springs in the study area. This has potential health risks.

Furthermore the pipeline will enable the town of Libode to convert to a water-borne sanitation system. Currently residents are relying on septic tank and soak away systems and pit latrines. This potentially has many negative environmental impacts such as surface water, groundwater and soil contamination. Converting to a water-borne sanitation system could alleviate these negative impacts provided that the town can be served with a functional waste water treatment works.

Blocked housing projects to the East of Mthatha can further be supplied with potable water and hence can be developed for those beneficiaries.

DESIRABILITY (Placement)

Provided that the bulk water supply pipeline is constructed in an environmentally responsible manner the net negative impacts on the environment are deemed negligible. Alternative A1 avoids the majority of settlement but follows existing access roads where practical.

Alternative A2 follows the R61 road from Mthatha to Libode. Potential expansion of this road and existing services make this alternative not feasible.

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

Approximately 36 rural villages around Libode will benefit from a sustainable source of potable water.

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

Given that the project is a bulk water supply pipeline, there will be limited opportunities as a water supply for communities on route.
Benefits will include:

- Job creation during the construction phase where local labour is required
- 1 job will be created for the pump station operator.

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:
National Environmental Management Act (NEMA) No. 107 0f 1998	Dept. of Environmental Affairs Dept. of Economic Development and Environmental Affairs	1998
Environmental Impact Assessment Regulations of 2010 (Government Notice No. R. 543,544 and 546 as amended)	Dept. of Environmental Affairs Dept. of Economic Development and Environmental Affairs	2010
Constitution of the Republic of South Africa Act No. (106 of 1996)	South African Government	1996
National Environmental Management Waste Act (59 of 2008)	National Department of Environmental Affairs	2008
National Water Act (NWA) No. (36 of 1998)	Department of Water Affairs	1998
National Forest Act (NFAA) No. (84 of 1998)	Department of Agriculture, Fisheries and Forestry	1998
National Environmental Management Biodiversity Act (10 of 2004)	Dept. of Environmental Affairs Dept. of Economic Development and Environmental Affairs	2004
Communal Land Rights Act	Department of Rural	

	Development and Land Reform	
National Roads Act	South African National Roads Agency Limited	

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 √	NO
If yes, what estimated quantity will be produced per month?	5 m^3	

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

Construction solid waste will include cement bags, adhesive tins, broken pipes, and general litter from the construction teams. Contractors will be required as per specifications in the EMP to manage all solid waste and ensure that it is disposed of at a licenced landfill facility. No waste will be buried or burnt on site.

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

The Contractor will be responsible for disposal of all construction waste. The Construction EMP includes specifications concerning the disposal of construction waste which must be taken to a permitted landfill facility. No waste will be burnt or buried on site.

Will the activity produce solid waste during its operational phase?		NO √
If yes, what estimated quantity will be produced per month?	0 m^3	

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

No waste will be generated during the operation phase.

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?	NIL	
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?	[redacted] NO √

If yes, provide the particulars of the facility:

Facility name:	N/A		
Contact person:	N/A		
Postal address:	N/A		
Postal code:	N/A		
Telephone:	N/A	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?	[redacted] NO √
If yes, is it controlled by any legislation of any sphere of government?	[redacted] 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?	YES √ [redacted]
If yes, is it controlled by any legislation of any sphere of government?	[redacted] [redacted]

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:

Minor noise will be generated by the pump at the booster pump station.

12. WATER USE

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

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	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:	NIL	
Does the activity require a water use permit from the Department of Water Affairs?	[redacted]	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.

The crossings of water courses will require General Authorisations in terms of Section 21(i) of the National Water Act

13. ENERGY EFFICIENCY

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

The routing design makes use of gravity as opposed to pumping for most of the route.

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

The main source of power for the pump station will be electricity. A diesel generator will be installed as a stand-by measure in times of electricity failure.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

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

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

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

[redacted]	NO √

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:

[redacted]	1:50 – 1:20√	[redacted]	1:15 – 1:10√	[redacted]	1:7,5 – 1:5 √	[redacted]

Alternative S2 (if any):

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Alternative S3 (if any):

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

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

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

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

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

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

Natural veld - good condition[E]√	Natural veld with scattered aliens[E]√	[redacted]	[redacted]	[redacted]
[redacted]	Cultivated land√	[redacted]	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. The EAP has the necessary expertise.

5. 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:

5.1 Natural area√
5.2 Low density residential
5.3 Medium density residential√
5.4 High density residential
5.5 Informal residential√
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 √
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 will this impact / be impacted upon by the proposed activity.

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity.**N/A**
If YES, specify and explain:
If YES, specify:

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity. **N/A**
If YES, specify and explain:
If YES, specify:

6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including	[redacted]	NO √
Archaeological or paleontological sites, on or close (within 20m) to the site?	NO √	
If YES, explain:	N/A	
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:	A specialist archaeological survey was undertaken by Ethembeni Cultural Heritage Resources Agency. Their study did not find anything of significance. Recommendations are given for the discovery of graves along the route. See Specialist Report (**Appendix D**)	
Will any building or structure older than 60 years be affected in any way?	[redacted]	NO √
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	[redacted]	NO √
If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.		

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

See APPENDIX G for the methodology of public participation followed.

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 subregulation54(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

See APPENDIX G for a copy of the newspaper advert
A notice board, advertisement or notices must:

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

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

See APPENDIX G for photos of the signboards

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

See APPENDIX G

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

See APPENDIX E
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:

OR Tambo District Municipality – Water Services Manager
KSD Municipality – Planning, Infrastructure and Municipal Managers Office
Nyandeni Municipality – Planning, Technical Services and Municipal Managers Office
Ward Councillors on route

Department of Rural Development and Land Reform (Mthatha Office)
Department of Water Affairs: Water Use Licensing
Department of Economic Development and Environmental Affairs
South African Heritage Resources Agency
Mthatha Rate Payers Association

List of authorities from whom comments have been received:

Department of Water Affairs: Water Use Licensing
Department of Rural Development and Land Reform

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):

Department of Water Affairs: Water Use Licensing – A meeting was held at their office in order to determine the Water Use Authorisation Process for the proposed stream crossings.

Department of Rural Development and Land Reform – Since the majority of the project, the Department needs to involved in the community participation since the land must be released from the community.

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.

1. Department of Water Affairs - The proposed water course crossings require approval in terms of Section 21(i) of the National Water Act.

2. The Department of Rural Development and land Reform has to be involved in the community consultation process in order to release the land since the majority of the pipeline falls on communal land.

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):

See Appendix E (Comments and Response Report)

Issue 1 - Water Use Authorisations. The EAP is currently in the process of applying for General Authorisations for the proposed water crossings.

Issue 2 - Community meetings with the affected councillors and headman were held by EM-NDO projects, a firm appointed to facilitate the ISD component of the project. The Department of Rural Development and Land Reform actively participated in the meetings.

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)

Design Phase

The only activities undertaken on site during this phase has been reconnaissance investigations for

route selection (driving in a vehicle) and the excavation of six trial pits for the geotechnical investigation.

No discernable impacts occurred during this phase.

Construction Phase

- Vegetation impacts (loss of species; loss of cover & species diversity, etc.); as a result of clearing for trenches and levelling areas for the reservoirs.
- Alien vegetation infestation as a result of soil disturbance during construction activities.
- Fauna Impacts. Disturbance to resident fauna as a result of construction activities
- Aquatic disturbance to water courses during trenching activities
- Contamination of ground and surface water through construction activities and associated spillages i.e. cement, paint, diesel, oil, etc.
- Soil Erosion and loss of top soil through construction activities i.e. clearing of vegetation, trenching stockpiling of top soil and inappropriate rehabilitation.
- Health & Safety of Public on access road due to construction vehicles using road and earth moving equipment on site
- Disruption to community services (road congestion, traffic disruption, construction noise, etc)
- Solid waste generation during construction activities i.e. builders rubble, cement, paint, etc.
- Visual impacts of reservoirs and associated infrastructure.
- Noise pollution created by construction activities and associated machinery.
- Dust pollution created during construction activities
- Cultural & Heritage Impacts (disturbance to sites of importance, grave sites, etc.)
- Employment opportunities created for construction activities.

Operation Phase

- Alien Vegetation Infestation
- Soil erosion created through improper rehabilitation and stormwater control
- Health & Safety of Public around reservoirs and pump station.
- Noise Impacts created by pump station
- Provision of a sustainable water supply to Libode town and surrounding rural villages

Decommissioning and Closure Phase impacts:

No discernable impacts envisaged as it is unlikely that any aspect of the project will be decommissioned or closed at this point in time.

No – go Alternative

The following potential impacts will occur with the no-go alternative:

- Continued blocked housing provision in the absence of a sustainable bulk water supply.
- Continued use of a non –water borne sanitation system and associated negative environmental impacts for the town of Libode
- Absence of piped water to rural villages around Libode and continued reliance on springs, streams and rivers for basic water needs.

Impact Rating Methodology

Each potential impact was evaluated individually. The type of potential impacts identified could be either impact directly or indirectly on the receiving environment. However the possibility of a cumulative impact was also considered and evaluated accordingly.

Impacts were considered in terms of their status (positive or negative impact).

Ultimately, impacts are given a significance rating. Where relevant, specialist reports were used to inform the evaluation of impacts. The impact significance rating should be considered by authorities in their decision-making process based on the implications of ratings as described below:

- INSIGNIFICANT: the potential impact is negligible and will not have an influence on the decision regarding the proposed activity/development.
- VERY LOW: the potential impact is very small and should not have any meaningful influence on the decision regarding the proposed activity/development.
- LOW: the potential impact may not have any meaningful influence on the decision regarding the proposed activity/development.
- MEDIUM: the potential impact should influence the decision regarding the proposed activity/development.
- HIGH: the potential impact will affect the decision regarding the proposed activity/development.
- VERY HIGH: The proposed activity should only be approved under special circumstances.

Construction Phase Impact Assessment

Nature of Impact	Type of Impact	Significance (pre-mitigation)	Mitigation	Significance (post mitigation)	Preferred Alternative
Vegetation impacts (loss of species; loss of cover & species diversity, etc.); as a result of clearing for trenches and levelling areas for the reservoirs.	Direct & Cumulative	Medium (-ve)	• Vegetation clearing to be limited to servitude width of 3m along pipeline route and limited to footprint of reservoirs. • All organic material in top 150mm of the soil trench is to be stockpiled separately for use in rehabilitation. Large plants such as Aloes must be relocated to neighbouring ground prior to trenching.	Low (-ve)	Alternative A2 (avoids CBA areas)
Alien vegetation infestation as a result of soil disturbance during construction activities.	Indirect	Very Low (-ve)	Alien vegetation established on site must be removed and the regrowth controlled.	Very Low (-ve)	No preference

Nature of Impact	Type of Impact	Significance (pre-mitigation)	Mitigation	Significance (post mitigation)	Preferred Alternative
Fauna Impacts. Disturbance to resident fauna as a result of construction activities	Indirect	Low (-ve)	Nesting species encountered must be relocated by a specialist if they occur along the pipeline route. No hunting or killing of any faunal species is to occur	Very Low (-ve)	Alternative A2 (avoids CBA areas)
Aquatic disturbance to water courses during trenching activities	Direct	Medium (-ve)	Construction to occur during winter months when water levels are low. No new road crossings through water courses are to be created.	Low (-ve)	Alternative A2 (avoids water course crossings)
Contamination of ground and surface water through construction activities and associated spillages i.e. cement, paint, diesel, oil, etc.	Indirect Impact	Low(-ve)	Ensure the correct maintenance of plant to avoid spills. The storage of fuels and oil, and the refuelling of plant should take place in a designated area. Implement the section of the site specific EMP that deals with all issues of waste management i.e. solid, effluent and hazardous waste. The EMP must include method statements as well as penalties for non-compliance by contractors.	Very Low (-ve)	No preference
Soil Erosion and loss of top soil through construction activities i.e. clearing of vegetation, trenching	Indirect	Medium (-ve)	Ensure that no more than 750m of open trenches are exposed. Ensure mitre drains are	Low (-ve)	No preference

Nature of Impact	Type of Impact	Significance (pre-mitigation)	Mitigation	Significance (post mitigation)	Preferred Alternative
stockpiling of top soil and inappropriate rehabilitation.			constructed on all areas where the slope exceeds 1:6 Ensure that cut-off drains are used upslope of all cut areas. All new access roads are to be restricted to the pipeline servitude area		
Health & Safety of Public on access roads and N2 National due to construction activities vehicles using road and earth moving equipment on site	Direct	Medium (-ve)	Ensure that the plant equipment is in good working order. Provide adequate safety warning signage on roads. Site managers must ensure that the drivers of these machines do so responsibly i.e. toolbox chats and site safety induction meetings.	Low (-ve)	Alternative A1 (Away from R61)
Solid waste generation during construction activities i.e. builders rubble, cement, paint, etc.	Direct	Low (-ve)	Implement the section of the site specific EMP that deals with all issues of waste management i.e. solid, effluent and hazardous waste. The EMP should include method statements as well as penalties for non-compliance by contractors.	Very Low (-ve)	No preference
Visual impacts of reservoirs and associated infrastructure.	Direct & Cumulative Impact	Medium (-ve)		Low (-ve)	No preference
Noise pollution created by construction activities and associated machinery.	Direct	Low (-ve)	Ensure construction occurs during regular working hours, during the week.	Very Low (-ve)	Alternative A1 (away from villages and settlement)

Nature of Impact	Type of Impact	Significance (pre-mitigation)	Mitigation	Significance (post mitigation)	Preferred Alternative
			Plant to be fitted with silencers to prevent excessive noise pollution		
Dust pollution created during construction activities	Direct	Low (-ve)	Regular dust suppression, by dampening individual construction sites, access roads, topsoil stockpiles etc. must take place in order to minimise dust generation.	Very Low (-ve)	Alternative A1 (away from villages and settlement)
Cultural & Heritage Impacts	Indirect	Insignificant	There is no indication of any archaeological or paleontological sites on the site. Should any sites of heritage importance or graves be discovered during the construction phase, the SAHRA would be notified and appropriate action taken.	Insignificant	No preference
Employment opportunities created for construction activities.	Direct	Low (+ve)	N/A	N/A	No preference

Table 2. Operational phase Impact Assessment

Nature of Impact	Type	Significance (pre-mitigation)	Mitigation	Significance (post mitigation)	Preferred Alternative
Alien Vegetation Infestation	Direct	Medium (-ve)	Continual implementation of existing Alien Vegetation Management Programme.	Very Low (-ve)	No preference
Soil erosion created through improper rehabilitation and stormwater control	Indirect	Medium (-ve)		Very Low (-ve)	No preference
Health & Safety of Public around reservoirs and pump station.	Cumulative	Medium (-ve)	Reservoirs and pumpstations should be secure from the public (i.e. fenced off, and gates kept under lock and key)	Low (-ve)	Alternative A1 (away from villages and settlement)
Noise Impacts created by pump station	Direct	Low (-ve)	Pumps to be housed in brick buildings and fitted with appropriate silencers where appropriate.	Very Low (-ve)	Alternative A1 (away from villages and settlement)
Provision of a sustainable good quality water supply to Libode town and surrounding rural villages	Indirect	Highly (+ve)	No mitigation – (completion of the remainder of the phases of the scheme)	N/A	No preference

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.

From the impact assessment tables above, it can be seen that there are no high negative impacts or fatal flaws which should prevent the project from proceeding.

After mitigation, all impacts were found to be of Low, Very Low or Insignificant in the construction phase. These are all temporal and will only last for the duration of the construction period.
Very few negative impacts were identified in the operation phase. The only real risk is that of erosion should rehabilitation not take place effectively and grass cover not become re-established. Alien vegetation could also colonize disturbed trenches should active control measures not take place.

The most significant positive impact is the potential provision of a sustainable potable water supply to the rural villages around Libode. This is highly positive but it is indirect and will only occur once the remaining phases the scheme are developed.

In terms of the alternatives considered, **Alternative A1 is the preferred Alternative**. Alternative A2 only scored higher preference in terms of biodiversity related impacts and aquatic impacts. Alternative A1 scored higher for all social impacts since the pipeline is more distant from settlement and roads. This alternative is also not preferred by SANRAL due to potential road widening of the R61.

The no-go alternative would result in the following impacts:

- Continued blocked housing provision in the absence of a sustainable bulk water supply.
- Continued use of a non –water borne sanitation system and associated negative environmental impacts for the town of Libode
- Absence of piped water to rural villages around Libode and continued reliance on springs, streams and rivers for basic water needs.

SECTION E. RECOMMENDATIONS 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:

It is recommended that Environmental Authorisation be granted subject to the following conditions:

- The validity period of the environmental authorisation should be for three years in which time construction should commence.
- No crossings of water courses to occur without the required General Authorisation issued in terms of Section 21(i) of the National Water Act. Accordingly all construction must take place in accordance with these conditions of approval.
- Should graves be encountered in the vicinity of the trenches or reservoirs, the following must take place:
- All contractors must implement the EMP and must be briefed on the environmental issues pertaining to the project.
- Emphasis of the EMP must be placed on the rehabilitation aspects of all pipeline trenches.

It is recommended that strict adherence to the relevant mitigation measures described above and compliance with the EMP be adhered to. (**Appendix F**).

REFERENCES

Berliner, D. and Desmet, P. 2007. Eastern Cape Biodiversity Conservation Plan Technical Report. Department of Water Affairs and Forestry Project No 2005-012, Pretoria.

Mucina, L. and Rutherford, M.C., (eds) 2006. The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.

SECTION F: APPENDICES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s) – Preliminary Design Report

Appendix D: Specialist reports (Heritage)

Appendix E: Comments and responses report BID and IAP correspondence

Appendix F: Environmental Management Programme (EMPr)

Appendix G:Public Participation

Appendix H: IAP Register