



edtea

Department :  
Economic Development, Tourism and  
Environmental Affairs

PROVINCE OF KWAZULU-NATAL

Enquiries : Mrs NC Zungu Telephone: 033 - 264 2500  
Imibuzo : Ucingo :  
Navrae : Telefoon :

Private Bag : X9152  
Isikhwama Seposi : Pietermaritzburg  
Privaat Sak : 3200

Reference:DC23/0010/2015 Fax :  
Inkomba : iFeksi :  
Verwysing: Faks :

Date :  
Usuku : 20 JANUARY 2016  
Datum :

## Fax Transmission

uThukela District Municipality

PO Box 116

LADYSMITH

3370

Attention: Mduuzi Radebe  
Cell: (079) 511 5559  
Tel: (036) 638 2400  
Fax: (036) 635 5501  
E-mail: mdu@uthukeladm.co.za

Dear Sir

**DC23/0010/2015: ENVIRONMENTAL AUTHORIZATION FOR THE CONSTRUCTION OF A BULK WATER PIPELINE FROM UMBULWANE TO LOMBARDSKOP RESERVOIR; UTHUKELA DISTRICT (DC23)**

The KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs has authorized the abovementioned project. This environmental authorization and reasons for the decision are attached herewith.

### ENQUIRIES

#### Please note that:

- All queries regarding this application for environmental authorization (including the Department's decision) must be directed to the official of this Department with contact details provided on the letterhead above.
- Only queries regarding appeals must be submitted to the Office of the MEC (details provided below).

N.C

*"Leading the attainment of inclusive growth for job creation and economic sustenance"*

## **NOTIFICATION OF DECISION ON APPLICATION**

In accordance with regulation 4(2) of the EIA Regulations 2014, the applicant must in writing **within 14 days** of the date of this decision ensure that

- a. All registered interested and affected parties are provided with access to this decision and the reasons for the decision; and
- b. The attention of all registered interested and affected parties is drawn to the fact that an appeal may be lodged against the decision in terms of the National Appeal Regulations 2014, if such appeal is available in the circumstances of the decision.

## **APPEALS**

In accordance with regulation 4(1) of the National Appeal Regulations, 2014 an appellant must submit an appeal to the appeal administrator and a copy of the appeal to the applicant, any registered interested and affected party and organ of state with interest in the matter with 20 days from the date of notification of this decision.

An appellant must comply with regulation 4(2) and submit the appeal in writing and in the form obtainable from the appeal administrator by posted, faxed, e-mailed or hand delivered to the following address:

**The Appeal Administrator,**

**Office of the KwaZulu-Natal MEC for Economic Development, Tourism & Environmental Affairs**

<b>POSTAL/ FAX/ E-MAIL:</b>	<b>PHYSICAL:</b>
Private Bag X001 Bishopsgate 4008, Durban Tel: 031 310 5300 Fax: 031 310 5416 E-Mail: Inderlallh@kznded.gov.za (Haresh Inderlall)	9 <sup>th</sup> Floor, The Marine Building, 22 Dorothy Nyembe Street, Durban 4001

Yours faithfully



for. Head of Department:

**KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs**

Signed by: N. C. ZUNGU

Date: 20/01/2016

cc: Liz Dralle of Terratest (Pty) Ltd, Fax: 033 343 6701



edtea

Department :  
Economic Development, Tourism and  
Environmental Affairs  
**PROVINCE OF KWAZULU-NATAL**

## Environmental Authorization

### In terms of regulation 25 of the Environmental Impact Assessment Regulations, 2014

Project Title: Umbulwane to Lombardskop Water Supply Project

Local Municipality: Ladysmith

Application number: DC23/0010/2015

NEAS No.: KZN/EIA/0000112/2015

Date of issue: 20 JANUARY 2016

Authorization holder: uThukela District Municipality

Location: Ward 9,14 and 20 from Umbulwane  
to Lombardskop reservoir  
Emnambithi; uThukela District  
(DC23)

N. C

## Scope of Project

The development is located within Wards 9, 14 and 20 of the Emnambithi/Ladysmith Municipality and comprises the installation of a new 500mm diameter dedicated bulk water pipeline from Umbulwane to Lombardskop, which will ultimately tie into the existing bulk water system located in the area. The approximately 7.7km long pipeline will supply water to an existing 5 mega litre (ML) concrete reservoir at Lombardskop, located to the east of Ladysmith town. The purpose of the development is to address current water supply constraints experienced within the Ladysmith/ Ezakheni areas.

The following will be constructed for the Umbulwane to Lombardskop Water Supply Project:

- Lombardskop Rising Main (Dedicated bulk water feeder main to the existing 5 ML Lombardskop Reservoir, currently not utilized) - to be linked to the existing 550mm diameter Abattoir pipeline.
  - Approximately 7.7Km, 500mm diameter steel pipeline with associated appurtenant works;
  - 17 air valve chambers;
  - 6 scour valve chambers;
  - Various crossings of minor water courses;
  - Elevated 500mm diameter pipe crossing of the Klip River via a purpose-built pedestrian bridge.
- Necessary remedial work to the structure of the existing 5 ML Lombardskop Reservoir including water tightness testing; and
- Strategic adjustments to the Lombardskop Reservoir Chamber and Distribution mains to suit supply area demand requirements.

### Construction materials and design considerations

The entire pipeline is specified as 500mm diameter continuously welded grade API X42 steel pipe with a D/t ratio of  $\leq 120$  and will be fabricated in accordance with the Department of Water and Sanitation (DWS) 1310 specification. Pipeline construction will generally be in accordance with SABS 1200L, except where more onerous requirements are deemed necessary. The pipeline will be factory cement mortar lined and the corrosion resistant coating will be either polyurethane or medium density polyethylene. All coatings and linings will comply with the DWS 9900 specification.

Provision will be made for the fitment of a temporary cathodic protection system during construction and a permanent cathodic protection system, probably of the impressed current type, will be provided. All

N. C

chambers will be fabricated either from precast concrete rings (air-valve chambers) or *in situ* reinforced concrete (scour valve chambers).

Scour chambers are located at all low points to allow drainage of the pipeline for occasional maintenance. Dispersive soils are evident in some areas and as a result energy dissipation measures, such as gabions, will be provided at scour valve installations to mitigate erosion should scouring occur. Air valves are provided at high points with spacing not exceeding 600m to ensure hydraulic efficiency.

## Decision

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014, the

**KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs**

(hereafter referred to as the "Department")

**grants environmental authorization**

to:

**uThukela District Municipality** (herein after referred to as "the authorization holder")

Details of the contact person:

**Mduduzi Radebe**

PO Box 116

LADYSMITH

3370

Cell: (079) 511 5559

Tel: (036) 638 2400

Fax: (036) 635 5501

E-mail: mdu@uthukeladm.co.za

to undertake the following activities (hereafter referred to as "the activities") as described in section 1 below.

N. C

# 1 Activities authorized and location of activity

The following activities in Government Notice No. R. 983 dated 08 December 2014 are triggered by the abovementioned project:

## 1.1 Description of Activities and location

Component (or phase) of the project	Listing Notice/ Activity No.	21 Digit Surveyor General code
Construction	<p>Activity 9 of GNR 983</p> <p>The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or stormwater</p> <p>(i)with an internal diameter of 0,36 metres or more; or</p> <p>(ii) with a peak throughput of 120 litres per second or more;</p> <p>excluding where –</p> <p>(a) where such infrastructure is for bulk transportation of water or stormwater drainage inside a road reserve; or</p> <p>(b) where such development will occur within an urban area.</p>	<p>N0GS0177000000100000</p> <p>N0GS01770000118000001</p> <p>N0GS01770000117600010</p> <p>N0GS01770001073800000 to</p> <p>N0GS01770001074000000</p> <p>N0GS01770001074300000 to</p> <p>N0GS01770001076500000</p> <p>N0GS01770000109700000</p> <p>N0GS01770001097800000 to</p> <p>N0GS01770001097900000</p> <p>N0GS01770000117600011</p> <p>N0GS01770001103000000 to</p> <p>N0GS01770001103100000</p> <p>N0GS01770001104900000 to</p> <p>N0GS01770001105600000</p> <p>N0GS01770000118000000</p> <p>N0GS01770000117600012</p> <p>N0GS01770001216900000 to</p> <p>N0GS01770001217100000</p> <p>N0GS01770001217700000 to</p> <p>N0GS01770001217900000</p> <p>N0GS01770001218200000</p> <p>N0GS01770001220300000</p> <p>N0GS01770001220400000</p> <p>N0GS01770001220900000</p> <p>N0GS01770001221000000</p> <p>N0GS01770001221100000</p> <p>N0GS01770001228400000 to</p> <p>N0GS01770001228700000</p> <p>N0GS01770001233100000</p> <p>N0GS01770001233300000</p> <p>N0GS01770001233900000</p> <p>N0GS01770001234100000 to</p> <p>N0GS01770001234200000</p> <p>N0GS01770001234400000</p>

N. C

		NOGS01770001236900000 to NOGS01770001237200000 NOGS01770001238000000 to NOGS01770001238300000 NOGS01770001239100000 NOGS01770001239400000 NOGS01770001239600000 to NOGS01770001241100000 NOGS01770001260400000 NOGS01770001260700000 NOGS01770001261000000 to NOGS01770001261100000 NOGS01770001261700000 NOGS0177000117600013 NOGS0177000117600014 NOGS0177000117900014 NOGS0177000117600015 NOGS0177000117900015 NOGS0177000117900019 to NOGS0177000117900020 NOGS0177000117900022 to NOGS0177000117900023 NOGS0177000117900025 NOGS0177000117900027 NOGS0177000117900029 NOGS0177000117600003 NOGS0177000117900031 to NOGS0177000117900033 NOGS0177000117900035 NOGS0177000117900041 to NOGS0177000117900042 NOGS0177000117900044 to NOGS0177000117900045 NOGS0177000117600006 NOGS01770000610400000 NOGS01770000633600000 NOGS0177000117600007 NOGS0177000117900007 NOGS0177000117600008 NOGS01770000889700000 NOGS01770000889800000 NOGS01770000889900000 NOGS01770000890000000 NOGS0177000117600009 NOGS01770000946200000 to NOGS01770000946300000 NOGS0177000117800000 to NOGS0177000117900000
--	--	--

N. C

		<p>NOGS01770000117900012          NOGS00000001287300002          NOGS00000001287300005          NOGS00000001287300006          NOGS00000001287300007</p>
Construction	<p>Activity 12(iii) and (xii) of GNR983</p> <p>The development of:</p> <p>(iii) bridges exceeding 100 square metres in size;</p> <p>(xii) infrastructure or structures with a physical footprint of 100 sq m or more;</p> <p>where such development occurs -</p> <p>(a) within a watercourse;</p> <p>excluding –</p> <p>(dd) where such development occurs within an urban area; or</p> <p>(ee) where such development occurs within existing roads or road reserves.</p>	
Construction	<p>Activity 19 of GNR 983</p> <p>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from -</p> <p>(i) a watercourse;</p> <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving -</p> <p>(a) will occur behind the development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.</p>	

as described in the Basic Assessment Report (BAR) dated September 2015, layout plan number 100B - 2 - LOM-COR-001(REV-A), dated June 2015 at:

N. C



## 1.2 The physical address or farm name:

At the P325 and P333 intersection outside Ezakheni, get onto the P325 and drive northeast for 612m before turning left onto an unpaved road. Follow this road for 1.3km, then turn left again. The site is located between Ladysmith and Lombardskop, approximately 2km east of Steadville [starting from Umbulwana (next to railway line) and finishing at St Chads reservoir]. The corridor runs alongside the P32 and P325, Ladysmith.

Authorized alternative	Latitude	Longitude
Starting point of activity (linear activity):	28°35'56.66" S	29°49'03.80" E
Middle point of activity:	28°34'19.65" S	29°50'04.08" E
End point of activity (linear activity):	28°33'33.16" S	29°51'24.44" E

The site is located between Ladysmith and Lombardskop, approximately 2km east of Steadville [starting from Umbulwana (next to railway line) and finishing at St Chads reservoir]. The corridor runs alongside the P32 and P325, Ladysmith.

## 2. Conditions of Authorization

This Environmental Authorization is subject to the conditions set out below:

**2.1. Period of Validity:** One or more of the listed activities authorized must commence within **five (5) years** from the date of issue and activities must be concluded not later than ten (10) years. If commencement of the authorized activity/ any of the authorized activities does not occur within that period, this authorization lapses.

### 2.2 Environmental Audit Report

- 2.2.1 The holder of the authorisation must submit monthly environmental audit reports prepared by the Environmental Control Officer (ECO) to the Department during the construction phase.
- 2.2.2 The environmental audit reports must be prepared in accordance with Appendix 7 of EIA Regulations 2014
- 2.2.3 Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development.

N-C

### 2.3 Environmental Management Programme

- 2.3.1 The Environmental Management Programme (EMPr) prepared by Terratest (Pty) Ltd for the construction phase of this project as submitted for the environmental authorization of this project complies with section 24N of NEMA and Appendix 4 of the EIA Regulations, 2014. This EMPr is hereby **approved** and must be implemented.
- 2.3.2 The EMPr must be kept on site during construction phase of the development.

### 2.4 Monitoring and Reporting to the Department

- 2.4.1 The holder of the authorization must appoint an Environmental Control Officer (ECO) for the construction phase of the development to ensure that the mitigation and rehabilitation measures referred to in this authorization and EMPr are implemented.
- The details of appointed ECO must be forwarded to the Department in writing at the address indicated in section 3.4 below.
- 2.4.2 The ECO must be appointed before commencement of any land clearing or construction activities. The ECO's responsibilities are among others:
- 2.4.2.1 Monitor the Contractor's adherence to the approved impact prevention procedures on a weekly, or bi-weekly basis.
- 2.4.2.2 Issue the Contractor a notice of non-compliance whenever transgressions are observed.
- 2.4.2.3 Document the nature and magnitude of any non-compliance, the action taken to correct the non-conformance, the actions taken to mitigate its effects and the results of those actions.
- 2.4.2.4 Monitor complaints, investigate, implement rectifying measures and keep records.
- 2.4.2.5 Report the results of monitoring to the Department in the form of an Audit Report.
- 2.4.2.6 Report to the Department any emergency incidents occurring during the construction phase.
- 2.4.3 The ECO must be employed until all rehabilitation measures required for the construction phase are completed and the site is ready for operation.
- 2.4.4 Should the ECO be changed at any time, this must be communicated in writing to the Department within **14 (fourteen)** calendar days of the appointment of the new ECO.

N.C

2.4.5 All requirements for the management, monitoring and reporting of impacts for the construction phase of the project must be as specified in the EMP or environmental audit report.

2.5 The activities authorized must only be carried out at the location as described in **section 1** above.

**2.6 Written notice of the commencement of the construction phase**

2.6.1 Not less than **seven (7) days** written notice must be given to the Department that the construction phase will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the construction will commence.

**2.7 Availability of this environmental authorization**

2.7.1 A copy of this environmental authorization must be kept by the authorization holder on site where the activities will be undertaken during construction phase. The authorization must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorization who works or undertakes work on site.

**2.8 Construction phase**

2.8.1 The construction must comply substantially with the layout plan prepared by WMN Consultancy (Pty) Ltd dated June 2015 which is attached as Annexure 3 herewith.

2.8.2 Any deviations from the approved layout/route must be approved by this Department prior to its implementation.

2.8.3 The Construction Camp must be positioned on previously disturbed areas (if possible) and outside of the 1:100 year floodline of the watercourses.

2.8.4 Soil erosion prevention measures must be implemented such as gabions, sand bags etc. whilst energy dissipaters must be constructed at any surface water outflow points.

2.8.5 The use of fertilisers must be undertaken with caution and must not be allowed, in any circumstances, to run into drainage lines or the Klip River, to avoid any possible eutrophication impacts.

2.8.6 The Environmental Control Officer (ECO) must identify sensitive fauna and flora prior to construction works, to minimise the destruction and disturbance of such areas.

N.C

- 2.8.7 All solid wastes must be disposed of at a registered landfill site and records maintained to confirm safe disposal.
- 2.8.8 Scavenger-proof refuse disposal containers must be supplied to control solid waste on-site.
- 2.8.9 Chemical waste must be stored in appropriate containers and disposed of at a licensed disposal facility.
- 2.8.10 It must be ensured that all hazardous contaminants are stored in designated areas that are sign-posted, lined and banded. Hazardous substance storage must not take place within 100m of a wetland or within the 1:100 year floodline.
- 2.8.11 Portable sanitation facilities must be erected for construction personnel. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the surrounding vegetation). These facilities must also be monitored and serviced so as to prevent contamination of the water resources.
- 2.8.12 Temporary traffic control and warning signage must be erected and implemented on all affected roads in the vicinity.
- 2.8.13 Any damage to surrounding roads must be repaired as soon as possible to prevent further deterioration to the road network.
- 2.8.14 The following conditions apply to geology and soil:
  - 2.8.14.1 The site of the pipe bridge must be further investigated utilising a rotary core drill to establish the depth of bedrock and suitable founding horizon prior to construction commencing.
  - 2.8.14.2 Site drainage must be implemented at the existing reservoir to prevent surface ponding, where subsequent ingress into the foundations has the potential to cause destabilisation over time, such as differential settlements due to lowered subsoil strength. This must include the conveyance of all runoff away from the structures and into natural drainage lines.
- 2.8.15 The following conditions apply to water resources:
  - 2.8.15.1 Stormwater/ surface water management measures must be put in place before construction commences and maintained throughout the lifetime of the development.
  - 2.8.15.2 Any contaminated water associated with construction activities must be contained in separate areas or receptacles such as Jo-Jo tanks or waterproof drums, and must not be allowed to enter into the natural drainage systems/ Klip River.

N. C

- 2.8.15.3 Prior to the start of operations the contractor must produce a method statement indicating how the construction process will be undertaken.
- 2.8.15.4 The working servitude must be kept as small as possible and it must be demarcated to contain the operations.
- 2.8.15.5 Precautions must be taken with regards to spillage of any hydrocarbon (fuels, oils, greases) on the site. Care must be taken in their use but spill clean-up facilities must also be on hand at all times.
- 2.8.15.6 Care must be taken with regards to the stability of the river banks once the pipeline has been installed. Hard structures such as gabions and mattresses must be avoided if possible since they may well lead to bank erosion in the long term.
- 2.8.15.7 The site must be kept clear of alien weeds species until such time as the area is fully covered with a viable sward of grasses and other indigenous vegetation.
- 2.8.16 After the construction phase of the project, the contractors must ensure that all hazardous materials are removed from the site and that rehabilitation of land is undertaken.

### **3. General**

#### **3.1. Compliance with the conditions of this authorization**

In terms of section 24F of the National Environmental Management Act, 1998 (Act No. 107 of 1998), no person may commence with an activity listed in terms of section 24(2) (a) or (b) of the Act, unless the competent authority has granted an environmental authorization.

#### **3.2. Understanding the conditions of this authorization**

It is the responsibility of the authorization holder to understand the conditions of this authorization. Any queries regarding this environmental authorization must be submitted in writing to the Department (contact details in section 3.4).

#### **3.3. Amendments to the project/ EMPr**

3.3.1. Any changes to, or deviations from, the project description set out in this authorization must be approved, in writing, by the Department before such changes or deviations may be effected.

3.3.2. Any subsequent amendments to the approved EMPr must also be submitted to the Department for review. The amendments must only be implemented after being approved by the Department.

N. C

### 3.4. Contact details of the Department

The following contact details for the Department must be used for all reports, notices etc. which must be submitted to the Department:

Department of Economic Development, Tourism and Environmental Affairs

Private Bag X9905

LADYSMITH

3370

Fax No: 036 634 1977

Attention: Control Environmental Officer: Compliance Monitoring and Enforcement, uThukela District

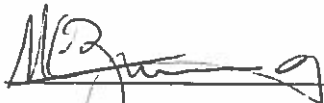
### 3.5 Other general conditions

- 3.5.1 If any heritage resources, artifacts, graves and the like are discovered during the course of the work, they must be cordoned off and AMAFA notified. Work at these sites must only continue once Amafa has assessed the site and the necessary permits issued.
- 3.5.2 A 50m radius must be placed around the gum trees and Intombi Camp graveyard sites next to where the pedestrian bridge will be constructed across the Klip River and they must be marked as sensitive.
- 3.5.3 The excavations from the bank of the Klip River to the gum trees must be monitored for potential historical middens by a qualified archaeologist.
- 3.5.4 The walling and graves must not be disturbed on areas where there is already an existing line. If the line is upgraded, the excavation plans and methods must be cleared by an archaeologist and/or Amafa.
- 3.5.5 A qualified archaeologist must monitor any trenching and if there is a new line then it must be surveyed with a metal detector and/or excavated by test pit excavations.
- 3.5.6 A 20m buffer must be maintained between the edge of the graves (scattered along the pipeline route) and the edge of the pipeline footprint. The graves must be clearly demarcated before construction begins.
- 3.5.7 The professional Palaeontologist must be appointed to record and collect the fossils according to South African Heritage Resources Agency (SAHRA) and Amafa specifications as part of a Phase 1 Paleontological Impact Assessment, preferably before construction in areas where the rocks area exposed due to erosion and also during construction when trenching exceeds 1,5m in depth.

N.C

This authorisation does not exclude the authorisations holder from complying with any other applicable legislations

Date of environmental authorization: 20 JANUARY 2016



for: Head of Department

KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs

Signed by : Nombulelo Zungu

Designation: Acting Senior Manager South Region

## Annexure 1: Reasons for Decision

### 1. Information considered in making the decision

In reaching its decision, the Department took, *inter alia*, the following into consideration -

- a) Application form dated 3 September 2015.
- b) The BAR dated September 2015;
- c) The comments received from the organs of state and interested and affected parties as included in the BAR dated September 2015;
- d) Mitigation measures as proposed in the BAR dated September 2015 (including Engineering Report, Geotechnical Report, Wetland Assessment Report, Heritage Impact Assessment Report, and Desktop Palaeontological Report) have been incorporated in the EMP; and
- e) The findings of the site visit undertaken by Salome Kubeka, Ayanda Khulu and Makhosi Yeni of his Department on 12 October 2015.

### 2. Key factors considered in making the decision

#### a) Basic Assessment Report dated September 2015

- i. The BAR dated September 2015 complies with the requirements of the EIA Regulations, 2014 and has been accepted by the Department;
- ii. The BAR dated September 2015 included a description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity.
- iii. The methodology used in assessing the potential impacts identified in the BAR dated September 2015 and the specialist studies have been adequately indicated.

#### b) Public participation:

The public participation process complies with the requirements of Chapter 6 of the EIA Regulations, 2014 and the comments from the organs of state and interested and affected parties have been included in the BAR dated September 2015.

- The Public Participation Process involved consultation with the relevant authorities, non-government organisations (NGO's), neighbouring landowners, community members and other identified Interested and Affected Parties (IAPs).

N.C



A register of Interested and Affected Parties was developed and it includes: Ezemvelo KZN Wildlife (EKZNW); Amafa; Department of Water and Sanitation (DWS); Department of Agriculture and Rural Development (DARD); Department of Transport (DoT); Transnet; Department of Agriculture, Forestry and Fisheries (DAFF); Department of Cooperative Governance; Department of Human Settlement; South African National Roads Agency Limited (SANRAL); Eskom, Ladysmith Local Municipality and uThukela District Municipality.

Stakeholders who submitted comments includes: Amafa; DWS; DARD; DoT; Transnet and DAFF. Site notices were erected along the corridor & notification letters were distributed via post and email. English and IsiZulu adverts were placed in Newspapers: Ladysmith Gazette on 17 July 2015 and Eyethu uThukela on 24 July 2015. No objections were received regarding the development.

**c) Socio-economic impact:**

About forty five (45) new employment opportunities (skilled and unskilled) will be created during the development phase of the project with the expected capital value of project R670 000 000.00. The communities will also benefit by having a reliable supply of water due to the pipeline development.

**d) Need and desirability:**

The current system cannot meet the demand of surrounding community. By tying into the existing Abattoir Reservoir and associated bulk water pipeline system, the supply to the Lombardskop Reservoir will be greatly increased and the supply will be reliable. As water is a basic human need, this initiative is considered to be of high priority.

The construction of a bulk water pipeline from Umbulwane to Lombardskop Reservoir, Ladysmith Local Municipality, KwaZulu-Natal forms part of a larger initiative undertaken by the UThukela District Municipality, entitled the "Ezakheni/ Emnambithi Infrastructure Masterplan/ Upgrade Project". The Ezakheni/ Emnambithi Bulk Water Infrastructure Upgrade Masterplan/ Upgrade Project is for the provision of bulk infrastructure, which is to address the current supply constraints in the area, as well as to improve the internal water conservation and demand management initiatives. This has been undertaken in order to improve the sustainability of the system and to address the unacceptably high physical water losses within Ladysmith/ Ezakheni.

N-C

Ultimately, the strategy is aimed to reduce the current high water loss (~50% to 70%) to a target water loss of 25% of demand. This achievement would meet the projected 2040 water demand, inclusive of population growth at 1% per annum and improve the level of service.

**e) Receiving environment:**

The pipeline corridor consists of a variety of landuses. Initially from Umbulwane the corridor is located in a low income housing area, exhibiting limited vegetation cover. The corridor then crosses a minor watercourse while travelling beneath an existing railway bridge. An open field of grassland is then crossed until the Klip River is encountered. The Klip River will be crossed via a purpose-built pipe bridge. An open grassland field again will be crossed, following the alignment of an existing drainage channel for some of its extent.

Thereafter the pipeline corridor will run parallel to the P325, to the east of the road. This stretch of road is characterised by low income houses and open grazing areas. Two minor watercourse crossings are evident. The pipeline corridor will then head east on the P32, straddling both sides on the road. The final construction conditions will determine which side of the road to construct on. The pipeline corridor then turns north where it climbs a steep hill, covered in boulders, to the existing Lombardskop Reservoir.

**f) Biodiversity issues:**

**Vegetation**

A Biodiversity study by Mucina and Rutherford (2006), states that the vegetation cover in the area is classified as Northern KwaZulu-Natal Moist Grassland. The vegetation and landscape features indicate hilly and rolling landscapes supporting tall tussock grasslands usually dominated by *Themeda triandra* and *Hyparrhenia hirta*. Open *Acacia sieberiana* var. *woodii savannoid* woodlands encroach up the valleys usually on disturbed (strongly eroded) sites.

However, the site is largely transformed and disturbed, especially alongside the P325 as communities reside in this area and graze their livestock on the open patches of grassland that are available.

N.C

## **Fauna**

Any development has the potential to negatively impact upon the local fauna, given the intrusion of an unnatural object in a natural environment, or artificial environment. The Ezemvelo KZN Wildlife Minsit database has been considered and the following species of conservation significance have been highlighted as potentially being present in the area: *Doratogonus falcatus* (Millipede), *Cochlitoma simplex* (Mollusc), *Whitea alticeps* (Grasshopper) and *Balearica regulorum* (Crowned Crane) -Avifuna.

However, the site is largely transformed and disturbed, especially alongside the P325 as communities reside in this area and graze their livestock on the open patches of grassland that are available. Mitigation measures regarding identification and management of sensitive fauna and flora are provided for in the Environmental Authorization and Environmental Management Programme during construction of the pipeline.

### **g) Geotechnical issues:**

A Geo-Technical investigation, Dated October 2013 was conducted by Terratest Geotechnical, Environmental and Earth Science Consultants. The report indicates that the site is suitable for the construction of the reservoir pipeline. The subsoil predominantly comprises colluvial silty sand or sandy silt underlain by residual shale/ shale rock or residual dolerite. It recommends that the foundation excavation must be covered with a blinding layer of concrete over the bedrock as a protective layer in case it is left open for greater than few days to prevent rapid deterioration. The choice of foundation type and the design of the foundations will need to be done by a competent engineer.

### **h) Wetland Assessment Report:**

A Wetland Assessment Study, Dated May 2015 was undertaken by Terratest Geotechnical, Environmental and Earth Science Consultants. The study indicates that there are no potential impacts on the stream and wetland crossings along the designated pipeline routes that could be considered to be fatal flaws. The impacts on the systems have been assessed and it will be possible to mitigate against them; and recommendations in this regard have been put forward. If the recommendations are adhered to then the pipeline project should have no long lasting effects at all.

N.C

**i) Heritage impact:**

A Heritage Impact Assessment Dated 17 May 2015 was undertaken by Umlando: Archaeological Surveys and Heritage Management for the Umbulwane – Lombard's Kop bulk water pipeline. Several heritage sites were noted occurring along the pipeline and these were described with various forms of mitigation. The heritage sites include Late Iron Age stone walled settlements, 2nd Anglo-Boer War fortifications, hospitals and graves, and more recent human graves. The pipeline route initially affected some of these sites; however, with the suggested mitigation and minor route realignment these sites are no longer affected. A Phase 1 Palaeontological survey will be required for some areas of the pipeline route where the new pipes will be placed.

**j) Alternatives: Preferred site alternative**

The preferred site alternative is the construction of a 500m diameter bulk water pipeline from Umbulwane to Lombardskop Reservoir. The pipeline corridor is 50 - 350m wide, which will allow for unforeseen construction deviations if necessary. The working pipeline servitude will be approximately 20m wide. The majority of the pipeline alignment is planned to run adjacent to the P325 and P32 road servitudes. The pipeline corridor will run to the east of the P325 and the north or south of the P32, dependent on construction conditions. An area of disturbance has already been created through the construction of these roads, therefore providing an existing area of disturbance for construction activities associated with the pipeline. As the pipeline has to tie into the Abattoir Reservoir pipeline in order to obtain a supply of potable water, the starting point of the pipeline is restricted to Umbulwane, co-ordinates 28°35'56.66"S; 29°49'3.80"E. Further, the pipeline is proposed to tie into the existing Lombardskop Reservoir, co-ordinates 28°33'33.16"S; 29°51'24.44"E.

The Klip River is a large environmental feature which is unavoidable in the construction of the pipeline and thus will require crossing, regardless of the identified crossing point. The area identified for crossing takes into consideration items of heritage significance identified in the Heritage Impact Assessment (HIA) Report, as well the mitigation measures recommended by the Wetland Specialist (Wetland Assessment Report). The site alternative corridor identified for construction takes into account items of heritage significance and largely falls within previously

N.C

disturbed areas. This site alternative is therefore considered to be preferred site alternative. No other site alternatives have been investigated as they would not meet the need and desirability of this Application.

**k) No-go option:**

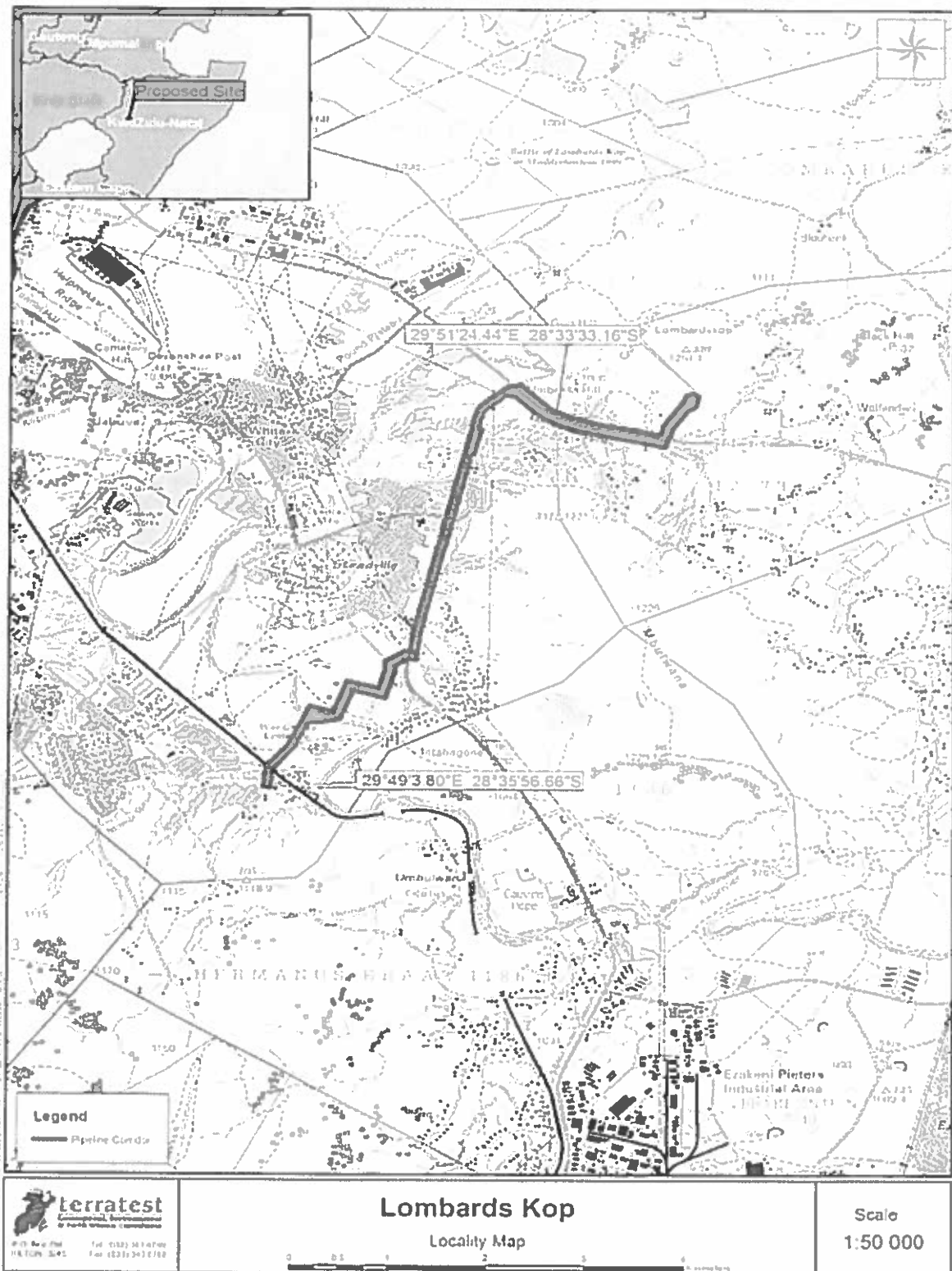
The No-go Alternative is to not to construct the Umbulwane to Lombardskop Reservoir bulkwater pipeline. As a result, the existing bulk water supply scheme will continue to operate, which is inefficient and unreliable. Further, the uThukela District Municipality's Ezakheni/ Emnambithi Infrastructure Masterplan/ Upgrade Project will not be realised and the unacceptable loss of potable water will continue through the current water supply scheme.

**l) Objectives of integrated environmental management:**

The Department is satisfied that, subject to compliance with the conditions contained in the environmental authorization, the general objectives of integrated environmental management laid down in Chapter 5 of NEMA will be met.

N.C

## Annexure 2: Locality map



N.C

### Annexure 3: Layout plan



<p>UTHMANIYANA DISTRICT MUNICIPALITY</p>	<p>Uthmaniyana District Municipality</p>	<p>PROJECT: UMBULWANE TO LOMBARDSKOP WATER INFRASTRUCTURE UPGRADE PROJECT</p>	<p>SCALE: 1:1000</p>	<p>DATE: 15/02/15</p>	<p>N.C. CONSULTANCY (Pty) Ltd CIVIL &amp; STRUCTURAL ENGINEERS</p>	<p>1:1000 - 2:1000 CONTACT SHEET</p>
		<p>CLIENT: UMBULWANE TO LOMBARDSKOP WATER INFRASTRUCTURE UPGRADE PROJECT</p>	<p>DATE: 15/02/15</p>			

N.C