

Ozwathini Water Supply Scheme

INTRODUCTION

The construction of the Ozwathini Water Supply Scheme for the Gcwensa, Mlamula and Phambela communities in the Ilembe District of KwaZulu-Natal has had a major impact in improving the life of the people and was a tremendous success as a community-based project.

Apart from providing a reliable potable water supply and local job opportunities, the project embraced community outreach initiatives, which included, inter alia, career guidance, book donations at high schools, in-service-training opportunities and skills transfer.

This contract was carried out within the 2007/2008 and 2008/2009 financial years with Municipal Infrastructure Grant Funding and was handed over to the Client within the contract period.

BACKGROUND AND PURPOSE

SSI Engineers and Environmental Consultants prepared a business plan for the Ilembe District Municipality in August 2005 to provide details of the Ozwathini Water Supply Scheme. The business plan was approved by the

Ilembe District Municipality and was then submitted to the Department of Water Affairs for appraisal.

Subsequently, due to the high budget submitted together with the initial business plan for the whole area, it was decided to rather submit four separate business plans for the Ozwathini area, thereby ensuring more manageable costs and implementation times.

These business plans were then prioritised by the Ilembe District Municipality in accordance with per capita costs and in accordance with political and other considerations. The areas covered by the four plans were Gcwensa, Phambela, Mathulini, Gcwensa Mlamula and Nodwengu. This article deals with contracts that were approved by the DWA under the Gcwensa/Phambela and Gcwensa/Mlamula business plans.

A total of 30 860 people (3 857 households with an average household size of eight persons) have received basic level of supply as a result of the construction of the Ozwathini-Gcwensa/Mlamula and Phambela Schemes. The estimated population-split by Tribal Authority is as shown in Table 1.

The project implementation cost for the Gcwensa/Phambela and Gcwensa/Mlamula schemes is R38 million (including escalation, contingencies and VAT).



OZWATHINI WATER SUPPLY SCHEME

WINNER – Community-based Projects category

KEY PLAYERS

Client Ilembe District Municipality
Professional Team SSI Engineers & Environmental Consultants (Pty) Ltd
 Nokuthula Dube & Associates
 Geomeasure (Pty) Ltd
 Buk'indalo Consultants

Main contractor Hidrotech Infra (Pty) Ltd
Major Subcontractors and Suppliers
 CIVE Contractors, GLR Props 001 cc T/A
 Ingonyama-Nicon, API Pumps

1 Reservoir site, Ozwathini

Table 1 The estimated population-split by Tribal Authority

District Municipality	Tribal Authority	Estimated Population
Ilembe District Municipality	Gcwensa/Mlamula	18 590
Ilembe District Municipality	Gcwensa/Phambela	12 270
Total		30 860

THE PROJECT AREA

The project area is located in the KwaZulu-Natal Midlands and may be accessed via Main Road 614 between Wartburg and Tongaat. Bamshela, the main business centre in the Ozwathini area, straddles Main Road 614 and is approximately 45 km from both Wartburg and Tongaat.

THE SITE

Before construction commenced, an Environmental Record of Decision (ROD) was obtained and an Environmental Management Plan (EMP) prepared by independent environmental consultants (Buk'Indalo). This EMP was closely adhered to during the construction.

DESCRIPTION OF PROJECT AND CONSTRUCTION TECHNIQUES

The scheme was designed according to DWA guidelines for community water supply for basic level of service, i.e. a supply of 25 ℓ/person/day at communal standpipes located, as far as possible, within 200 m walking distance from households. Storage is targeted at 48 hours at 25 ℓ/person/day with 20% allowance for losses. Reticulation pipelines have been designed to deliver at least 24 litres per minute (0,04 ℓ/s) to each communal standpipe, with some surplus capacity being built into the reticulation system in the anticipation that a limited number of households, businesses and institutions will obtain private connections in due course.

The principal source of supply for Ozwathini is boreholes, drilled and developed during a drilling programme undertaken by Geomeasure. All borehole water is dosed with chlorine to reduce the risk of contamination. The pumping system has been designed to match the design yields of the boreholes.

2 Reservoir construction – steel fixing



The remoteness of the site called for a simple design which would make provision for most of the work to be done by local labour using picks and spades, and hand-stampers during the backfilling process. The contractor assisted the labourers through the introduction of a T.L.B and 12 ton Excavator to undertake rock excavation.

TRAINING AND JOB CREATION

Apart from providing much needed infrastructure, one of the objectives of the project was to provide local work opportunities and skills training.

The contracts provided two emerging contractors, Igagasi Consulting Services and Masabele Project Management, the opportunity to further their knowledge in the civil engineering fields, as both contractors had not been exposed to working in the water sector before. These contracts also helped to empower women, as Igagasi Consulting Services is owned by a lady, Sibongile Mthiyane.

Ms Z Mbense, a technical trainee from one of the Universities of Technology, completed her P2 in-service training on the site. Ms Z Shawuka, a civil engineering graduate, had the opportunity of working on site and broadening her knowledge in the water sector. This enabled her to return to the office to apply her knowledge in the design environment.

At the beginning of the contract a dedicated project steering committee (PSC) was appointed by the councillors of the wards. The PSC played a major role in recruiting labour for the contractors. This was a sensitive issue that had to be handled with care, as various wards and tribal authorities were involved.

During community meetings it was decided that the labour count would be split 50/50 between men and women, thereby helping to empower the women in the Ozwathini area.

The contractors also had the opportunity of identifying potential candidates whom they had trained as plumbers and gang leaders to assist them in other contracts.

Significant skills training took place which included: laying of pipes, installation of fittings and valves, bricklaying and plastering, mixing of concrete, working with concrete and related tools (floats, spirit levels, fishline etc), working with generators and water pumps,

pressure testing of pipeline, steel fixing, health and safety issues (which were discussed at monthly meetings).

SCHOOLS OUTREACH PROGRAMME

The intention of the schools outreach programme was to enhance knowledge and offer brief guidance in terms of career choices, particularly with regard to the engineering industry, and more specifically the civil engineering profession. Representatives visiting the schools in the Ozwathini area were armed with the SAICE career guidance video.

SOCIAL RESPONSIBILITY

Due to the nature and size of the project, close working relationships needed to be established with the communities. This resulted in a number of initiatives which further enhanced the outcomes of the construction activities.

The following issues were for example addressed in the community (with assistance from the Independent Social Developer):

- Poverty alleviation
- Transfer of skills
- Job creation
- Empowerment of women
- Health and hygiene
- Bank accounts were opened for local labourers
- Arrangement for Identity Document application were made with the Department of Home Affairs – they in fact came out to the project area for the benefit of those who did not have IDs. The youth benefited significantly from this initiative.
- Infrastructural development of the Ozwathini area
- Empowerment of committee members through life skills workshops
- Awareness on ways of preventing cholera
- Community awareness meetings regarding health and hygiene, and ways of saving water.

CONCLUSION

The project was completed successfully (thanks to the efforts of the Implementation Agent, Project Steering Committee, Technical Managing Committee, Social Consultant, Contractors, Local Community and the Consulting Engineer) and handed over to the Ilembe District Municipality by SSI Engineers and Environmental Consultants. □