

READ ALL ABOUT UMGENI WATER'S PROJECTS

Upgrade of chlorine contact tank at the Howick Wastewater Works

The Howick Wastewater Works is currently managed by Umgeni Water via a maintenance contract with Mgungundlovu District Municipality. The works receives wastewater from residential, commercial and industrial sites in the area. Final effluent from the works is chlorinated prior to discharge to the Umgeni River. The object of chlorination is to ensure that the final effluent meets the discharge standards set for the works to protect downstream users from infection.

This project was initiated by Engineering and Scientific Services in September 2008 on behalf of Operations to upgrade the works to treat 6.8MI/day of effluent. The existing tank has a treatment capacity of only 3MI/day. Two additional chlorine contact tanks have been designed to function in tandem with the existing tank to provide a contact time of 40-minutes. Functionality has been enhanced as effluent pipes have been realigned to discharge into a splitter chamber for effective chlorine mixing and to allow any one tank to be taken offline

for maintenance purposes. The project budget is R1,912,700.00 comprising civil, electrical and mechanical works. The entire project inclusive of design, project management, health & safety, environmental and quality assurance monitoring is being undertaken 'in-house'. The civil works has been awarded to Ngonyama - Nikon for the sum of R1,341,139.20. Work commenced on 12 January 2009 and the anticipated completion date was 28 May 2009.

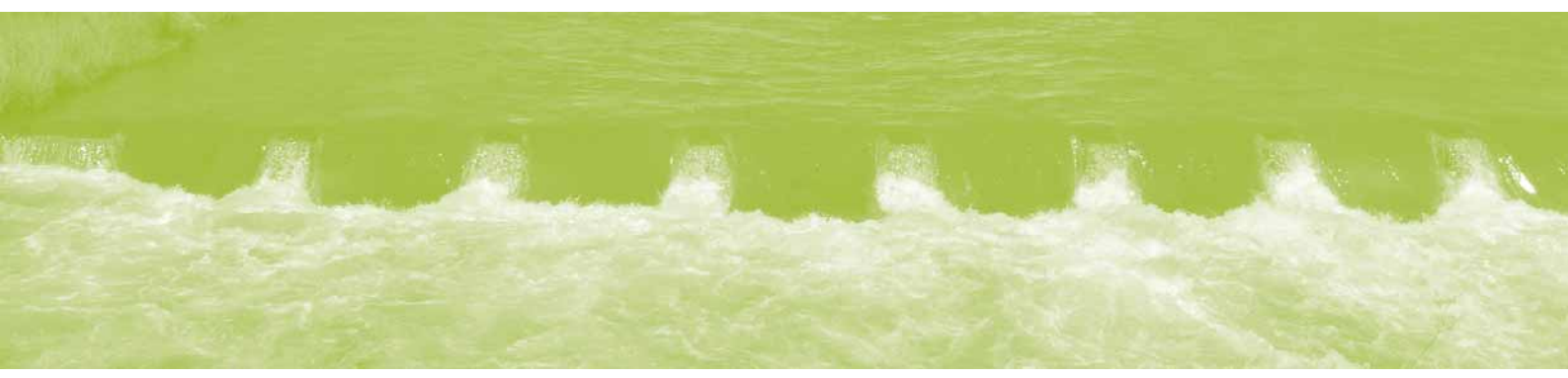
Some of the major challenges encountered included readjusting the position of the tanks and hand excavation of large pipe trenches to avoid several existing services that were uncovered.

Project Leader - A.R. Kockott

Project Team - V. Maharaj, N. Sing, M. Baillie, Z. Moosa, E. Nene, R. Thakurdin, M. Pillay, P. Ndlovu, A. Bajoo, H. Heslop, A. Khan, C. Scott, P. Bezuidenhout, L. Archer, N. Ndlelu, M. Hicks, J. O'Neil, S. Mkhize, M. Makhatini, I. Cadwood, P. Mtambo.



The new chlorine contact tanks and splitter chamber nearing completion. Excavation around splitter chamber and in coming pipework was undertaken by hand. The existing chlorine tank surround with Hessian cloth can be seen on the left of the photo.



Avondale to Honolulu pipeline: project manager - Krish Govender

A pipeline consisting of 1000/800 diameter steel pipes is being constructed between Avondale Reservoir in Ballito to Honolulu Reservoir in Groutville. Purpose of the pipeline is to supplement supplies in the coastal area between Ballito and KwaDukuza due

to the rapid growth being experienced in the area. Cycad Construction was awarded a contract in August 2008 to construct the pipeline. Physical work on the pipeline commenced in November 2008. The construction is approximately 33% complete and scheduled for completion by November 2009.



Pipeline looking down from Wakenshaw



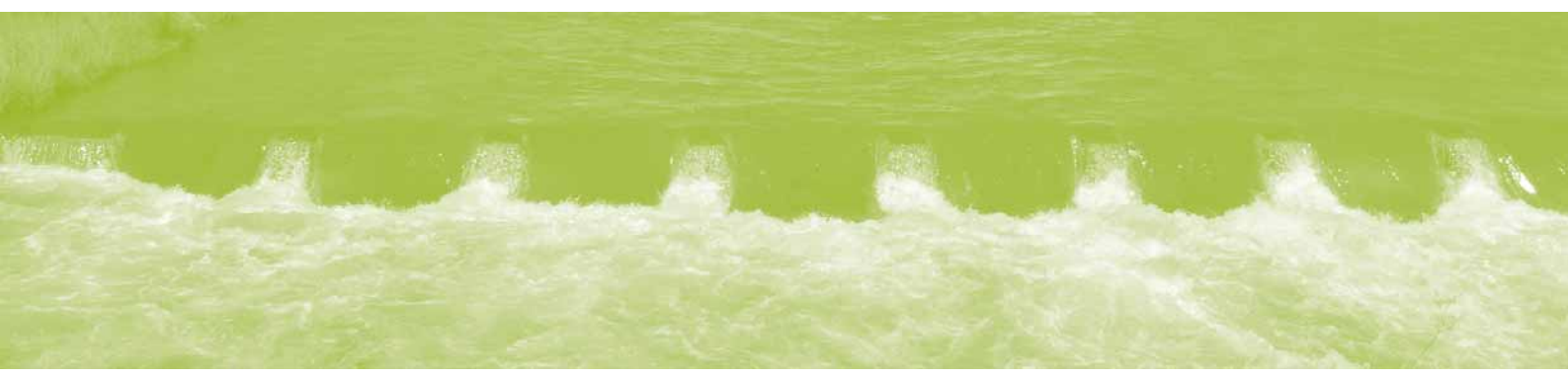
Moving Pipe using Side-Boom



Pipeline looking towards Wakenshaw



Sheet Piling being installed at Pipe Jack No.4



Durban Heights Booster Pumpstation: Project Manager - Peter Roux

Background

Umgeni Water is contracted to eThekweni Water & Sanitation (EWS) to meet the potable water needs of areas to the north of Central Durban (extending as far as La Mercy). This is achieved through the Northern Aqueduct (which is owned and operated by EWS) via Reservoir No 3 at the Durban Heights Water Works (DHWW). The Northern Aqueduct supplies 26 primary EWS reservoirs with water through some 136km of mains varying in diameter from 200mm to 1600mm.

Reservoir No. 3 has a top water level (TWL) of 272 masl and a minimum operating water level of 262 masl. Whilst in the past the Employer has been able to operate within this 10 metre pressure band, it has been requested by EWS to keep the reservoir at higher operating levels so as to ensure sufficient supply to various downstream balancing reservoirs.

Accordingly, Umgeni Water is to construct a Booster Pump Station in the pipeline feeding the Northern Aqueduct that will simulate a reservoir that is constantly full - reflecting a TWL of 272 masl, even though the actual storage level may have fallen below this during periods of peak draw-off or upstream filtration works 'outage'.

The Project comprises 3 separate contracts, namely 1) Supply and Installation of Pumpsets, 2) Construction of Pump Station Building and Pipe Works and 3) Electrical and Instrumentation.

Location

The project is located on the Southern perimeter of the Durban Heights Water Works (DHWW) located in Reservoir Hills just North of Westville.

Timelines

The construction of the project commenced 25 August 2008. Completion is estimated at October 2009.

People who will benefit

- The Ethekeeni Metropolitan Municipality
- All end-users of water in the areas supplied off the Reservoir no. 3

Employment created

The contractor employs people from the local communities



Figure 1: Overall view of the Booster Pump Station



Figure 2: View of ring beam at northern end of pump station



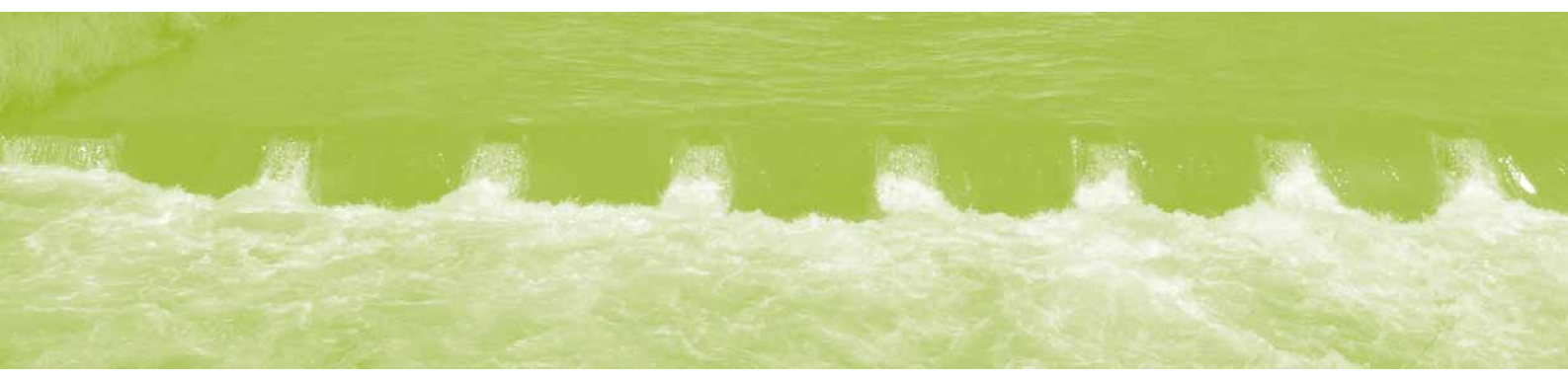
Figure 3: Brickwork inner and outer face on panels at northern end pump station



Figure 4: Strip footing foundation excavated for Transformer and of Switch room



Figure 5: Trench excavated for street lighting and fibre optic cable installation





The Ngcebo Bulk Water Supply Scheme: Project Manager – Peter Roux

Background

Ilembe District Municipality had initially planned that the Ngcebo / KwaDukuza Bulk Water Supply Scheme would supply water from the Tugela River to the areas of Ngcebo, Maphumulo and KwaDukuza. In 2007 an agreement was reached with Ilembe District Municipality that Umgeni Water, as the bulk service provider to Ilembe DM, would take over the project and its funding. Ilembe would couple its proposed reticulation to the BWS infrastructure.

The Maphumulo BWS Scheme will be constructed in 2 phases as set out below.

Phase 1 of the Maphumulo BWS Scheme comprises abstraction from the Imvutshane River and treating and pumping water to a command reservoir of 2 MI capacity which is to be located in the vicinity of Maphumulo. Phase 2 of the Maphumulo BWS Scheme entails the construction of a dam on the Imvutshane River and augmenting the capacity of the waterworks that had been built during phase 1. This alternative water source is currently being fully investigated.

The Ilembe District Municipality is in the process of implementing the reticulation network to Maphumulo and surrounding areas and is dependent upon this contract for the installation of the bulk pipeline and upgrade to the package water-treatment plant.

Location

The Ngcebo Bulk Water Supply Scheme project (see layout) is located north of Kranskop town, between the southern banks of the Tugela River and the steep-lying plateau to the South and comprises the supply of water from the Tugela River via the existing treatment plant located at Middledrift and the treatment and pumping of water to Maphumulo. .

Timelines

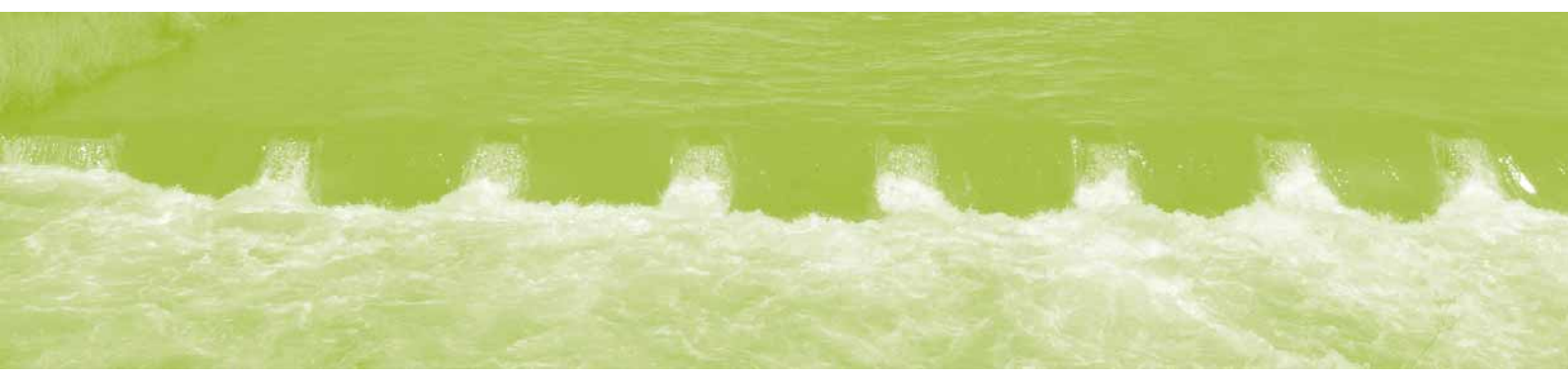
The construction of the project commenced 12 January 2009
Completion is estimated at 18 August 2009

People who will benefit

Upon completion of this contract, over 16,000 rural and subsistence-based people will have access to potable water through communal stand-pipes.

Employment created

The contractor employs people from the local communities





Jacking under R103



Site Route Walk - DV Harris to World's View



SOUTH COAST AUGMENTATION PIPELINE
PROPOSED NEW BOOSTER PUMPSTATION SITE
SHELL GARAGE SITE
FIGURE 3

61 PIPELINE - DV HARRIS TO WORLD'S VIEW PROJECT MANAGER – JULIUS MKHIZE

This project comprises 3.8km of 900mm and 1.8km of 1200mm diameter continuously welded steel pipeline from DV Harris Water Works to World's View Reservoir. This pipeline will augment the existing 61 Pipeline and improve the supply to EThekweni and Msunduzi municipalities. The project is divided into 3 phases/contracts:

- Pipe Jacking Contract
- Pipe Supply Contract, and
- Pipeline Construction Contract

Pipe jacking contract consists of 76m under the N3 and 18m under the R103.

Progress: Jacking under R103 is complete and jacking under N3 is 25%

Pipe supply is ongoing and 25% of pipes have been delivered.

Pipeline construction was awarded to Icon Construction and the construction began in June 2009.

Projects Costs:

Pipe supply	24 046 580
Pipe jack	4 412 038
Pipelaying	52 900 000
Other	10 641 382
Total	92 000 000

