

NOMLACU WATER TREATMENT PLANT

New 10 Mℓ/day Potable Water Treatment Plant

SUMMARY OF WORKS	
Type of Works	Water Treatment Works
Location of Works	Alfred Nzo Local Municipality – Eastern Cape
Size of Works	10 ML/D
Date of Award	12 February 2010
Date Completed	27 June 2012
Completion Value (Including VAT)	R 24 256 966.86
Client	Umgeni Water
Conditions of Contract	GCC 2004

The Nomlacu Water Treatment Plant is operated by ALFRED NZO LOCAL MUNICIPALITY.

Umgeni Water was the Implementing Agent for Contract of behalf of Alfred Nzo District Municipality. Under this contract, a 10 mega litres per day (Mℓ/day) water treatment plant was provided, and comprises of the following main plant items:

MECHANICAL:

- Sluice Gates at Raw Water Reservoirs (existing and new reservoir)
- Flow measurement and control from reservoirs to the inlet chemical building
- Coagulation via polymer, alum liquid or alum granule.
- pH control using hydrated lime.
- Soda Ash for stabilization
- Disinfection facilities comprising of gas chlorination and an ammonium hydroxide dosing plant
- Clarification by means of Pulsators which enable sludge to be withdrawn.
- Filtration for the removal of particulate matter using PCI's proprietary monolithic filter floor under-drain system. System comprises of 4 No rapid gravity sand filters with associated backwash pumps and blowers.
- Sludge transfer to drying beds and wash water recovery systems.



Pulsators (foreground) and filters (background)



Chemical dosing equipment

Paterson Candy International (SA) (Pty) Ltd, trading as PCI Africa

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Directors: MJ Hughes, CO Azih, G Burton-Durham

CONTROL & ELECTRICAL:

- SCADA and PLC control. Plant is semi-automated
- Generator set for standby power
- Plant instrumentation as described

The construction of the water treatment works has been done in accordance with the OSH Act of 1996. For the design of the gas chlorination plant, SANS 19028:2011 ("Small and medium sized chlorine disinfection installations) was used as a guideline for the installation. Further, gas chlorine plants are categorised as hazardous installations and thus the design and installation is in accordance with the Hazardous Installations Regulations found in the OSH Act.

The Ludeke dam will be the raw water source for the Nomlacu Water Treatment Plant. The raw water pumping station will pump to the onsite storage reservoirs. From these reservoirs water flows under gravity through the Nomlacu WTP process units to the chlorine disinfection tank.



Backwash pump station