

## NSEZI WATER RAW WATER (WEIR) PUMP STATION MHLATHUZE WATER

SUMMARY OF WORKS	
Type of Works	Water Treatment Works
Location of Works	Richards Bay
Size of Works (M <sup>3</sup> /D)	204 ML/D
Date of Award	1 October 2009
Date Completed	17 August 2011
Completion Value (Including VAT)	R 27 393 242.00
Client	Mhlathuze Water
Conditions of Contract	GCC 2004

The Nsezi WTW is located near Richards Bay, KZN, South Africa and serves various Industrial as well as Municipal consumers.

The Project was for the expansion and upgrade of the Pump station on the Nsezi River, which serves the WTW some 10 kilometres away. PCI Africa was the Main Contractor for the Project.



**Pump prior to installation.**



**Pump in the process of being installed into the sump.**

The Project scope included the design, selection, manufacture, factory testing, delivery to site, installation, commissioning and Handover of the following equipment:

- 4 off Flygt 700kW Submersible Pumps, with 3 duty units capable of pumping 8500m<sup>3</sup>/hr to a head of 60m. These are believed to be the largest submersible pumps of their type installed in South Africa
- Piping and associated valves (600 dia) inside the Pump Station
- New transformers, and MV electrical switchgear for the installation
- New Variable Speed Drive units (VSD's) for the pumps
- New LV electrical Motor Control centres for the Pump Station and associated equipment
- Automation, instrumentation and control including PLC's and HMI for the pumping control, including ramping up and slowing down of Pump speeds and duty selection according to a pre-set flow required by the Operator.
- Modifications to building and civil works in the existing pump station, to suit the new equipment.

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The Project installation and commissioning work was executed under challenging circumstances, as the pump station had to remain operational in order for the WTW to be fed with raw water. This required detailed planning and programming, and the carrying out of work under multiple phases with a combination of new and existing equipment in operation until all new equipment was installed and commissioned.

The Contract was awarded to PCI in 2010 and completed in July 2011  
The final contract sum was R 24 000 000. (2011)

The Project was completed on budget and within the programmed time frame.  
The Equipment exceeded the technical requirements and duties required



**Preparing holding down anchors inside the Pump sump, with continuous dewatering required.**



**Electrical Motor Control Centres and Variable Speed Drives**