

PROJECT NAME

Implementation of Ozone at the Rietvlei WTP

CLIENT

City of Tshwane

LOCATION

Rietvlei Dam - Pretoria

PROJECT VALUE

R 25 million

SERVICES

Process design and specialist advice to civil and mechanical consultants

TIME FRAME

February 2008 (On-going)



The Rietvlei Water Treatment Plant was equipped with Granular Activated Carbon (GAC) in 2000 and the addition of ozone to the plant was already contemplated at this stage. During the past decade, ozone became more affordable and due to the increasing deterioration of the plant's raw water, it was decided to augment the process with ozone. Pilot plant studies were performed and the results obtained were also backed up with an ozone demand test to confirm the beneficial effect of ozone, its optimal place in the process train and the dosages required for the pre-ozone and the main ozone.



The tender for ozone (30 kg/h) was requested based partly on a performance specification and the tender received were evaluated taking into account all cost issues over a life cycle period of 15 years. It was found that for this specific application, the use of a pressure swing adsorption (PSA) unit was more cost effective than a liquid oxygen (LOX) option.

Ozone will be used for the oxidation of manganese and iron, for the general oxidation of organics which will be easier adsorbed onto the subsequent GAC process, for the disinfection of pathogens and for the oxidation of taste and odour related compounds.

It remains a challenge for the plant to stay in operation while the additional ozone units are being installed at the inlet works and at the area in-between the DAFF units and the GAC filters.