

SCOPE FOR PRESSURE MANAGEMENT IN SOUTH AFRICA

R S Mckenzie & Willem Wegelin

WRP Pty Ltd, PO Box 1522, Brooklyn Square, South Africa 0075, ronniem@wrp.co.za

Tel: +27 12 346 3496, Cell +27 82 651 7904, PO Box 1522, Brooklyn Square, Pretoria 0075 South Africa

Keywords: Pressure Management, Practical Implementation

Topic: Intervention Techniques

ABSTRACT

South Africa boasts several of the largest and most successful advanced pressure management installations in the world, some of which have received both national and international recognition. The scope for reducing leakage from water reticulation systems in the country is significant and many municipalities are now implementing new pressure management schemes in certain areas. While it is accepted that pressure management is not applicable in all areas, even some of those with very high leakage, it does provide very significant savings under certain conditions and is often the most cost effective WDM intervention in the South African environment. It is important to understand that pressure management does not involve repairing the actual leaks or addressing the underlying problems which cause the leakage and in this regard should always be considered as the first phase of a multi-phase strategy to drive down leakage.

The paper discusses some of the key issues that must be considered when assessing the scope for pressure management from a practical viewpoint based on the experience gained through the implementation of over 200 installations. The paper will address specific problems that were experienced in the implementation of the Khayelitsha installation in Cape Town as well as the Sebokeng installation in Gauteng, both of which supply water to over 500 000 residents through a single installation. The new Mitchell's Plain installation will also be discussed which supplies water to a similar sized community and was commissioned towards the end of 2008. Between these three installations, savings of over 20 million kilolitres of water are achieved each year representing more than \$6 million per annum.

The paper will explain why South Africa is home to so many large pressure management installations and why the water reticulation systems in the country are ideally suited in many instances to the implementation of advanced pressure control. A list of 10 factors will be provided in the paper which can be used to gauge the potential for pressure management in a specific area. These factors have been identified through the practical implementation of many installations by the authors and sometimes contradict the results from the existing software which can be used to assess the potential savings through reduced leakage.

A summary of costs and savings from numerous schemes accompanied by an economic assessment of the installations will be provided to compare the costs of the project against the savings achieved. In view of the fact that some installations have now been in operation for more than 8 years, it is also possible to evaluate the maintenance costs which were previously estimated based on little or no real information.