



Achieving Sustainable Mine Closure Through the Use of Mine Water

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Abstract

Effective regional management is important in addressing the long-term effects of mine affected water, including acid rock drainage, acid mine drainage and saline drainage.

The Mine Water Coordinating Body (MWCB) has been established as a public-private platform for the mining industry and government to work together in identifying and implementing management options for water and closure for Mpumalanga Coalfields in South Africa. To date, the MWCB has attracted AngloCoal, Eskom, Exxaro, Glencore, Sasol and South32 as private sector partners and is working closely with the Department of Sanitation (DWS) and Department of Mineral Resources (DMR) who are key government bodies governing the mining sector. The MWCB is also engaging with other government departments to attract additional public sector support for their projects and initiatives. Currently, the MWCB projects include the Mine Water for Irrigation Project, The Green Engine and the Regional Post-closure Economic Study for the Coalfields.

The *Mine Water for Irrigation* project is a research study to investigate the use of saline water that meets agricultural quality standards in irrigating saline resistance crops such as wheat and soya. The study will extend over a total of 60Ha of both rehabilitated pits and nearby unmined land. The study will take place over 5 years to assess the longer term impact of irrigation on the local groundwater quality.

The *Green Engine* is an exciting project that, if successful, will change the way mine closure is viewed. It is aimed at demonstrating the viability of an integrated land stewardship model where mine owned land, renewable energy and treated mined water will work together in an integrated system to develop various business opportunities that will benefit local communities.

Regional Post-closure Economic Study for the Coalfields. Before regional closure can be successfully planned and implemented it is important to first understand what the potential economic opportunities for the region exist.

This study will investigate these opportunities, research implementing partners as well as ensure that government planning at national, provincial and local levels is integrated in the closure planning process. The study will identify sustainable projects which will in turn guide mining organisations with their rehabilitation and water management planning.

