



water affairs

Department:
Water Affairs
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SUSTAINABLE WATER SUPPLY FROM THE VAAL RIVER SYSTEM

Efforts to bring the Acid mine drainage (AMD) problem in the Witwatersrand under control are gaining momentum with the short term project currently being implemented while a detailed feasibility study is underway to develop long-term AMD strategies to address it in the long run.

This was among the key issues discussed at the meeting of the Strategy Steering Committee (SSC) of the Vaal River System (VRS) aimed at assessing progress made toward the implementation of the Reconciliation Strategy developed for this System.

The strategic actions needed to sustain supply from the Vaal River System are:

- Eradicate unlawful irrigation water use by the year 2013;
- Continue with the implementation of Water Conservation and Water Demand Management (WC/WDM) to achieve further targeted savings by 2015;
- Implement Phase 2 of the Lesotho Highlands Water Project (LHWP) to deliver water to the VRS by the year 2020; and
- Treat the mine effluent to potable standard and re-use in the Rand Water supply area and optimise the re-use of return flows over the longer term; and
- Implement the Integrated Water Quality Management Plan for the Vaal River.

Eradication of unlawful irrigation water use

The unlawful use of water by irrigation farmers has been identified as a practice which is putting the VRS water supply balance at significant risk.

Good progress has been made with the validation and verification of water use in all three of the Vaal Water Management Areas (WMAs). The eradication of unlawful irrigation water use in the VRS will, however, not be met as planned by the end of 2012, but the aim is to address two thirds of possible unlawful use by May 2013 and the remainder soon thereafter.

Water Conservation and Water Demand Management

Curbing water losses from municipal water supply systems remains a key strategic action. To drive this intervention the Department has set a target saving total of 15% by 2015 (Project 15%) based on individual targets that was set for all the municipalities.

Each of the four municipalities presented at the SSC meeting the strategies and plans that are being implemented to reduce water use. The efforts of the four biggest municipalities are commendable, however, the fact that no saving is shown on the total Rand Water supply is still a major concern. The

most important factor hampering achievement of the targets is a lack of sufficient budget allocations for WC/WDM implementation.

The Minister has requested a meeting with the Big 4: the three Gauteng Metros (Tshwane, Johannesburg and Ekurhuleni) and Emfuleni Local Municipality to discuss the pollution in the Upper Vaal and Crocodile (West) Marico Water Management Area and also to discuss water conservation and water demand management (WC/WDM).

Lesotho Highlands Water Project Phase 2

South Africa and Lesotho signed an agreement in Maseru in August 2011 for the implementation of the second phase of the Lesotho Highlands Water Project (LHWP). The project will consist of the building of the Polihali Dam and a water delivery system to supplement the water in the VRS. The project is still on schedule and the project should deliver water by 2020.

Acid mine drainage and water quality

Acid Mine Drainage (AMD) on the Rand mining areas has become a major environmental challenge, necessitating various short term interventions and a lasting long term solution.

In April 2011 the Minister of Water Affairs directed the TCTA to undertake emergency works as a part of short term interventions to deal with the problem of Acid Mine Drainage on the Witwatersrand.

The main objectives of these works are:

- Treating the current uncontrolled AMD decant on the Western Basin (this intervention is known as “the immediate intervention”.
- Drawing down the Acid Mine Drainage in the Western Basin by pumping to what it is known as the Environmental Critical Level (ECL), (this is the highest water level in the mine void which can be allowed without the mine water negatively impacting on the shallow ground water aquifers and the surface water resources).
- Preventing the rising water levels in the mine voids from exceeding the ECL’s in the Central and Eastern Basins.
- Treating the current uncontrolled AMD decant occurring on the Western Basin involves upgrading the Rand Uranium treatment plant. This plant consists of four parallel treatment process units, of which only one unit is operational and is currently being used to treat mine water at a peak rate of 12 million litres per day.

DWA appointed Aurecon SA, as lead consultant, and SRK Consulting and Turner Townsend, as main sub-consultants, on 30 January 2012 to investigate and recommend a feasible long-term solution to the AMD problem emerging in the study area, in order to ensure long term water supply security and continuous fitness for use of Vaal River water.

The removal of salts is driven by the reduced assurance of supply in the VRS that will be caused by excess releases from Vaal Dam for dilution purposes. Should the underground mine water induced salt-loading not be eliminated timeously, water supply security can be compromised. Because there is a substantial risk of delays if conventional project implementation processes are followed after the completion of the Feasibility Study, alternate fast-tracked implementation methods are being considered.

Implementation of the Integrated Water Quality Management Plan for the Vaal River

The Integrated Water Quality Management (IWQM) Strategy is facing some obstacles, but plans are being put in place to addresses them.

The recent algal blooms that occurred in the Vaal River highlight the need for intensified nutrient reduction measures as is underlined by the recommendation in the IWQMP. The control of phosphate concentrations, particularly from municipal wastewater treatment works, is being targeted as a key intervention. The first Vaal River Integrated Water Quality Management Strategy Steering Committee meeting is scheduled for July 2012.

Detail progress reports on the water resource management strategies can be found at the following link:
www.dwa.gov.za/Projects/VaalWRMS/documents.aspx

Membership of the Strategy Steering Committee includes representatives of agriculture, local authorities, water service providers, mines, energy and industry sectors, national departments and provincial government, representing a wide variety of stakeholder groups in the Vaal River System. The Committee meets twice a year.

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