

DEVELOPMENT OF A PROACTIVE ACID MINE DRAINAGE STRATEGY BY THE INKOMATI CATCHMENT MANAGEMENT AGENCY

Although mining is known to be one of the sectors that contribute a huge percentage to the Gross Domestic Product (GDP) through foreign direct investment, it also has a high negative externality through pollution of water resources. The decant of acid mine drainage in the West Rand as well as potential for decant in the central and Eastern compartments of the Witwatersrand where polluted groundwater has been predicted to rise to critical levels bears testimony to this. The decant of highly acidic mine water to the receiving water bodies is known to cause widespread pollution as well as impact negatively on the aquatic ecosystem or health of the river.

To avoid a similar situation from happening in the Inkomati Water Management Area, the Inkomati Catchment Management Agency (ICMA) has initiated a study to develop a pro-active acid mine drainage strategy. The purpose of this study is to determine the extent and number of abandoned mines as well as establish the measures that are currently implemented by operational mines to prevent the migration of acid mine water to the environment through decant. Where shortcomings or gaps are identified, the strategy will propose measures that need to be taken to plug such gaps. The importance of this strategy is that it is pro-active and not reactive. In other words it anticipates possible future decants and problems associated with acid mine drainage and proposes measures that need to be implemented to avoid that eventuality from materialising.

It is envisaged that operational mines will be able to buy in to the study and implement the proposed measures, which will be discussed with them. Where co-operation is lacking, such measures can be instructed through notices and directives for mines to implement. The biggest headache is the abandoned mines, which are the liability of government to rehabilitate and implement measures to prevent or minimise impacts to the environment and more specifically impact to the water resources. The Department of Mineral Resources (DMR) is responsible for this function in co-operation with the Department of Water Affairs. It must be mentioned that DMR is looking at abandoned mines in the whole country and not just in the Inkomati Water Management Area. This makes the prioritisation of abandoned mines for rehabilitation a rather complex process to deal with since it is a national competency.

This strategy will play a critical role in prioritising hotspots for purposes of rehabilitation. It will also assist in structuring and focussing the attention of the ICMA on the prevention of acid mine drainage now through inspections, rather than at a later stage. This strategy is mostly applicable to abandoned and existing mines, but for new mines, the ICMA has taken an approach that acknowledges the sensitivity of the water management area. The sensitivity of the area results from the fact that Eskom, a strategic water user depends on this system for its water for power generation as well as the fact that the catchment has international obligations. Consequently, all new mines in the upper reaches of the Komati River, which have a potential to impact on the Nooitgedacht and Vygeboom dams, are expected to have a financial provision set aside upfront before their licenses are issued for the construction of treatment plants during the operation of the mine or after closure depending on when the need arise. The need is dependent on the period during which decant is expected or predicted to occur.

The development of the strategy is at an advanced stage. The first draft has already been submitted by the service provider to the ICMA for review. The review has been completed and the final draft is expected by the end of the financial year or beginning of the new financial year.