



TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

KEY STRATEGIC AREA	KSA 3: Water Use and Waste Management
THRUST	5: Mine Water Treatment and Management
PROGRAMME	2: Regulatory, management and institutional arrangements
TITLE	Guidance for attaining regulatory approval of irrigation as a large scale, sustainable use of mine water

Objectives:

General:

To review the policy and regulatory framework to provide guidance for the establishment of irrigation of agricultural land as a large scale, sustainable use of mine water, during mine operation and especially post-closure.

NOTE: This project excludes any aspects of irrigation (e.g. soil water balances, water chemistry) which have already been assessed in previous WRC funded projects. Its focus is **exclusively** on overcoming real or perceived regulatory barriers to widespread implementation of irrigation with mine water.

Specific Aims:

1. Critically assess the current relevant laws, regulations, and policies in place governing the use of mine water for irrigation, both during mine operation and especially post-closure.
2. Critically evaluate and document the processes to be followed to attain regulatory approval of irrigation as a beneficial use for mine water.
3. Include community and occupational safety, both for farming leased land and for staff during the set-up phase.
4. Provide recommendations on the best practice for this industry, including:
 - a. how to implement irrigation
 - b. societal, economic, or regulatory conditions under which it will be a viable option
 - c. societal, economic, or regulatory conditions under which it will NOT be a viable option
 - d. a checklist of the set of conditions needed, including but not limited to types of soils, water quality, crop selections, geohydrology, water volume, resource water quality objectives, etc.

Rationale:

The WRC has a long and solid track record of technical research into the productive use of mining-impacted water for agriculture. Several research projects have been completed investigating the soils science and

technical agricultural aspects of sustainably applying mining-impacted water to agricultural land (for examples, see WRC research reports SP69, TT628/15, 2233/1/14, 1149/1/07, 858/1/02, 582/1/98).

The current regulations surrounding closure certification and water use licence applications do not prevent irrigation with mining-impacted water, but there is an absence of guidance informing both mining companies and regulator sufficiently for informed decisions regarding irrigation in the post-mining landscape to be made. Long term agricultural use of water is the primary concern, and NOT disposal of waste water.

This directed project is therefore focused on the policy or regulatory framework within which irrigation with mine water can (or can not) occur.

Deliverables:

1. Critique of current relevant laws, regulations, and policies as per specific objectives
2. Critique and description of the processes to be followed to attain regulatory approval of irrigation as per specific objectives
3. Workshop/s with key stakeholders: rehabilitation practitioners, agriculturalists, regulators, miners, NGOs, etc.
4. Draft final report comprising guidance on best practice for implementation of irrigation using mine water as per specific objectives
5. Corrected final guidelines, following review by the Reference Group

Lighthouse:

- Water Energy Food Nexus

Knowledge Tree

- Sustainable Development Solutions

Time Frame: 2 years

Total Funds Available: R 1,000,000 inclusive of VAT (R400,000 available in year 1).