

Standard**E10 - Water use and quality control**

December 2008

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Contents page

Scope	3
Programme design	4
Revision history	6

E10 - Water use and quality control

Scope

This standard is applicable to all Rio Tinto business units and managed operations from exploration and development through to closure. It includes corporate/admin offices and laboratory facilities situated off site. It covers all water management activities for all types and sources of water.

Intent: The intent of this standard is to ensure efficient, safe and sustainable management and protection of water resources and ecosystems in and around Rio Tinto operations. This requires an understanding of the water resources, their spatial and temporal interrelationships, their ownership in the region and the needs of catchment stakeholders. This provides the basis for the development of an integrated and strategic approach to water management including social, environmental, operational and economic aspects.

Other relevant documents:

- HSEQ management system (or standard E1 EMS for non ABS operations)
- Water use and quality control guidance note
- Rio Tinto water strategy
- Acid rock drainage prediction and control standard
- Hazardous materials and contamination control standard
- Mineral waste management standard
- Rio Tinto closure standard
- Surface mining standard design and management of slopes; and related guidance
- Surface mining standard design and management of dumps; and related guidance
- Legionnaires disease guidance note
- Annual S & E survey guidelines

Programme design

1. Planning

- 1.1 Deleted (requirements incorporated into 1.2).
- 1.2 Develop and maintain an appropriate understanding of the cumulative demands and impacts being placed on water resources and ecosystems in the catchments in which the operation works. This must include understanding the current and future water requirements of key upstream and downstream users and stakeholders, and the flow regime and quality required to maintain ecosystem integrity.
- 1.3 Develop and maintain a site water balance that is appropriate to manage the site's water risks and that predicts future water requirements, includes climate variability and identifies opportunities for water management improvements. Where there is significant risk, a solute balance for key contaminants must also be implemented.
- 1.4 Implement a change management process to ensure that new developments, expansions, modifications or replacement of existing facilities do not degrade the catchment quality, function, use and integrity of surface and subsurface aquatic ecosystems and water resources.
- 1.5 Develop and implement criteria on water abstraction, dewatering, effluent/discharge or water quality when government regulations are absent, insufficiently protective or ambiguous to ensure protection of surface water and ground water resources. The criteria must have formal approval from the operation's managing director (MD) and be consistent with internationally accepted limits, thresholds, guidelines and methodologies.
- 1.6 Develop site specific targets for operational areas that drive improvements in site specific risks associated with water management. Progress towards the targets must be supported by appropriate actions as part of the site business plan.
- 1.7 Develop and implement a Water management plan that describes the operational aspects for water management to comply with the intent of this standard and with regulations and requirements of the pertinent authorities. This plan must be integrated with the site business plan and be updated at least every four years or more frequently when operational, social or environmental conditions so dictate.

2. Implementation and operation

- 2.1 Assign clear responsibilities and accountabilities for water management considering representation from across the organisational structure. Responsibilities must include tracking and reviewing progress in implementing the Water management plan.
- 2.2 Design, construct and operate water withdrawal, storage, treatment and discharge facilities in accordance with appropriate practices and:

- a) ensure the design includes a risk assessment to identify and correct any potential failure scenarios and facilities will be able to handle expected flows and quality, including significant storm events;
- b) ensure that construction meets relevant standards and regulatory requirements and addresses all the identified significant risks; and
- c) ensure that operation of the facility conforms to approved design criteria and operational procedures and includes trigger and response criteria to protect aquatic ecosystems and aquifers.

2.3 Prepare emergency and contingency plans for:

- a) drought;
- b) flood;
- c) failures of large water retention structures; and
- d) unplanned effluent discharges.

This must be coordinated and compatible with the similar requirements for large waste storage facilities as contained in the Mineral waste management standard.

3. Performance measurement

3.1 Maintain safety inspection procedures, including the detailed verification of all identified hazards, for major water storage facilities. These requirements must be compatible with the major waste storage facilities inspection and signoff requirements detailed in the Mineral waste management standard.

3.2 Implement a monitoring, checking and corrective action program to:

- a) support operational control;
- b) verify compliance with targets and regulatory requirements;
- c) compare actual and predicted water balances;
- d) update water and solute balances, and catchment and ground water models;
- e) compare actual and predicted ground water and surface water impacts;
- f) assess impact on the environment;
- g) assess, where appropriate, cumulative impacts of the operation on the catchment and other users;
- h) meet reporting requirements; and

- i) meter flows and measure storages that are significant to the site water balance including recycle and reuse streams.

The frequency of monitoring must be based on site water risk or when there are significant changes in the process, operations or the environment impacting water usage and/or quality.

4. Revision history

Version no.	Effective date	Prepared by	Authorised by	
1	June 2005	Adelino Taboada	ExCo	
Version no.	Revision date	Revised by	Authorised by	Reason for change
2	December 2008	Adrian van Tonder	Bruce Kelley	Incorporation of suggested changes from operations and alignment with HSEQ management system.