

## Standard

# E11 – Water quality protection and water management

November 2017

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| Group <b>Standard</b>   | Title: <b>Water quality protection and water management</b> |   | Document number: <b>HSEC-B-02</b>   |  |
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| Owner:<br><b>Group Executive Health, Safety &amp; Environment</b>   |   | Approver:<br><b>Executive Committee</b> | Target audience:<br><b>All Rio Tinto staff and each Rio Tinto Group business and function</b> |  |
| Direct linkages to other relevant policies, standards, procedures or guidance notes:<br><b>Rio Tinto management system standard, E13 – Chemically reactive mineral waste management standard, D5 – Tailings and water storage standard. E11 - Water quality protection and water management guidance note</b> |   |   |   |  |
| Document purpose:<br><b>To support the implementation of the Group HSEC policy. This standard defines the minimum acceptable requirements for behaviours and/or conditions in respect of managing water, which if not met, could materially impact the Group.</b>   |   |   |   |  |

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# E11 – Water quality protection and water management

## Intent and Scope

Business units and operations are accountable to manage impacts associated with our operations to ensure risk is managed in accordance with regulatory commitments, Rio Tinto values as outlined in *The way we work*, and the HSEC policy. Rio Tinto is committed to protecting the environmental value of the regions where we operate and maintaining good stewardship for the long term. The intent of the standard and the requirements herein, is to prevent, or otherwise minimise, mitigate and remediate the effects that our business' operations have on communities and environments.

This standard is applicable to all Rio Tinto business units and managed operations across all phases of their life cycle from exploration through post-closure. It covers all infrastructure and management activities associated with water withdrawal, use, storage, treatment and discharge. It is applicable to any impacts or risks associated with abstraction and discharge, including changes in water level, flow and quality or any other potential loss of use.

## Performance requirements

- 1.1 Mitigate water-related impacts to the environment and/or community health and livelihoods within the operational footprint by preferentially avoiding or minimising disturbance or degradation of high value water resources.
- 1.2 Control discharge water quality to ensure operations do not contribute to a loss of beneficial use or cause harm to the environment and/or community health and livelihoods outside of the operational footprint.
- 1.3 Manage dewatering, withdrawal and discharges to preserve water levels and flows needed to prevent harm to the environment, and/or community health and livelihoods outside of the operational footprint.
- 1.4 Understand and plan for any constraints that cumulative impacts on water resources may pose for current or future operations.
- 1.5 Optimise water use efficiency in the design and management of infrastructure and operations, accounting for the climatic setting, demands on local water resources, sensitivity of water-dependent environments, and reasonably foreseeable changes in these parameters due to climatic shifts and extreme events.
- 1.6 Design and operate water management systems to manage the predicted variability in flows and volumes and avoid unauthorised release.

## Control requirements

Requirements in this standard apply in addition to any requirements defined in the *Rio Tinto Management System* standard, and those of the *Tailings and water storage* standard, the *Community and social performance* standard, and the other environmental standards. Materiality thresholds, described in guidance to this standard, determine the level of effort required to meet subsequent clauses herein.

## **Hazard identification and risk management**

- 2.1. Develop internal performance criteria when government regulations are absent, or insufficient to ensure protection of the environment and/or community health and livelihoods. Any performance criteria that are more stringent than government regulations must have formal approval from the business' Managing Director.
- 2.2. Develop and maintain a site water balance that is appropriate to the site's water related impacts and risks, and that uses scenario modelling to consider both present and future water management. Develop a solute balance for key contaminants of concern where there is significant water quality impact or risk.
- 2.3. Identify, characterise and document water resources and baseline conditions within watersheds that could be affected by the operation. Include an assessment of quality, quantity and the requirements of the environment, and/or community health and livelihoods.
- 2.4. Characterise and predict current and future uses and impacts to water resources within affected watersheds associated with water withdrawal, use or discharge.
- 2.5. Develop an appropriate mitigation strategy to address known past and current impacts and predict future impacts to the environment, and/or community health and livelihoods.
- 2.6. Evaluate and document all potential impacts to water resources. Develop appropriate mitigation strategies for all significant risks and impacts as part of the technical and financial preparation and evaluation of capital projects.

## **Management of change**

- 2.7. Evaluate and document any change to infrastructure and operations that could impact water quality and quantity as part of a formal management of change process that documents opportunities to avoid and/or reduce impacts.

## **Monitoring, measuring and reporting**

- 2.8. Design and implement a monitoring programme to confirm impact predictions, and determine if performance criteria are being met to validate the success of mitigation strategies.
- 2.9. Implement surveillance and monitoring systems that allow for early detection of failures on infrastructure and systems.
- 2.10. Investigate and take appropriate actions when material deviations from impact predictions are identified or when internal performance criteria are not met.
- 2.11. Develop participatory monitoring programmes with affected communities, as appropriate.