



Global Industry Standard on Tailings Management

GISTM tailings facility disclosure for QIT Madagascar Minerals (QMM) – Mandena

5 August 2026

Guidance on interpretation of this GISTM tailings facility disclosure:

The following provides the information required under Requirement 15.1.B of the GISTM.

The information provided in this Global Industry Standard on Tailings Management (GISTM) tailings facility disclosure should be read in conjunction with the information relating to Rio Tinto's approach to tailings management that is available on the Rio Tinto website, and the Group-level tailings management information supporting the GISTM tailings facility disclosures that is included in the Appendix to this document.

Where Rio Tinto considers a Rio Tinto internal process, standard, procedure and/or plan gives rise to a materially similar outcome to a requirement of GISTM, Rio Tinto has adopted the relevant defined term from GISTM for the purpose of reporting under Requirement 15.1.B of GISTM, even though the relevant Rio Tinto process may have a different name or achieve a materially similar outcome by different methods.

The information provided in this disclosure contains forward-looking statements (within the meaning of the US Private Securities Litigation Reform Act of 1995) concerning the financial condition, operations and businesses of Rio Tinto. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements.

Readers should not place undue reliance on these forward-looking statements, including with regard to future investment decisions. This is because forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance of, or events affecting Rio Tinto, or the industry, to differ materially from those expressed or implied in these statements.

Refer to the end of this GISTM tailings facility disclosure for further information on the content of this document and on forward-looking statements.

GISTM conformance status

Tailings facility name: QIT Madagascar Minerals (QMM) – Mandena

GISTM consequence classification: High

GISTM conformance status: Full Conformance

Tailings facility status: Active

QIT Madagascar Minerals (QMM) – Mandena is managed under the Rio Tinto *Tailings and Water Storage Facilities Standard*, which is focused on ensuring safe operation of all our tailings facilities, and the Rio Tinto *Management of Slope Geotechnical Hazards Standard*.

All relevant requirements of the GISTM have been implemented for QMM – Mandena.

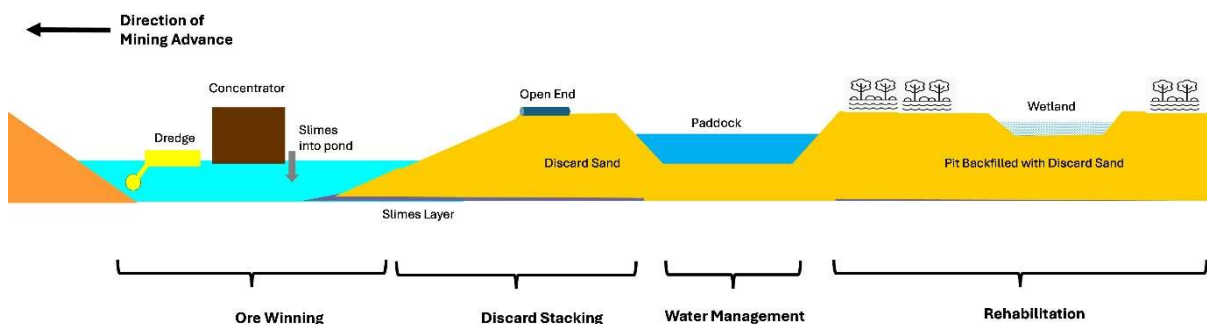
With safety and transparency being core principles for Rio Tinto and the GISTM, we have engaged with local representatives and emergency response groups and will continue to share relevant information and seek inputs as engagement continues. We have an Emergency Preparedness and Response Plan in place, developed with involvement from local responders and community stakeholders where relevant.

1. Description of the tailings facility

The GISTM definition of Tailings and Tailings Facilities is broader than many other international standards on Tailings Management, and it encompasses the discarded sand produced at a Mineral Sands mining operations, such as the QIT Madagascar Minerals (QMM) mine.

The mineral sand mine is a continuous process. The in-situ ore is mechanically excavated by a dredger. The ore then undergoes washing and centrifugal separation to extract heavy mineral concentrate (HMC) from the non-mineralised sands. The discard non-mineralised sand is pumped to backfill the mined-out void, creating a landscape similar to the pre-mining landform of dunes and valleys. Some of this backfilled area is used temporarily for mining infrastructure; however, most of the backfilled area is rehabilitated with vegetation and actively managed. The mineral sand mining process does not create a conventional pit or waste dump, nor a typical tailings facility, yet it involves temporary mining slopes, processing, transporting of soils with water, and the deposited discard sand creates dunes and valleys.

The GISTM provides a framework for safe tailings management while allowing the operator flexibility as to how best to achieve this goal. QMM have used an international expert independent advisory panel to assure that the approach for safe tailings management suits the specific characteristics of this mining method used at QMM and meets the intent of the GISTM.

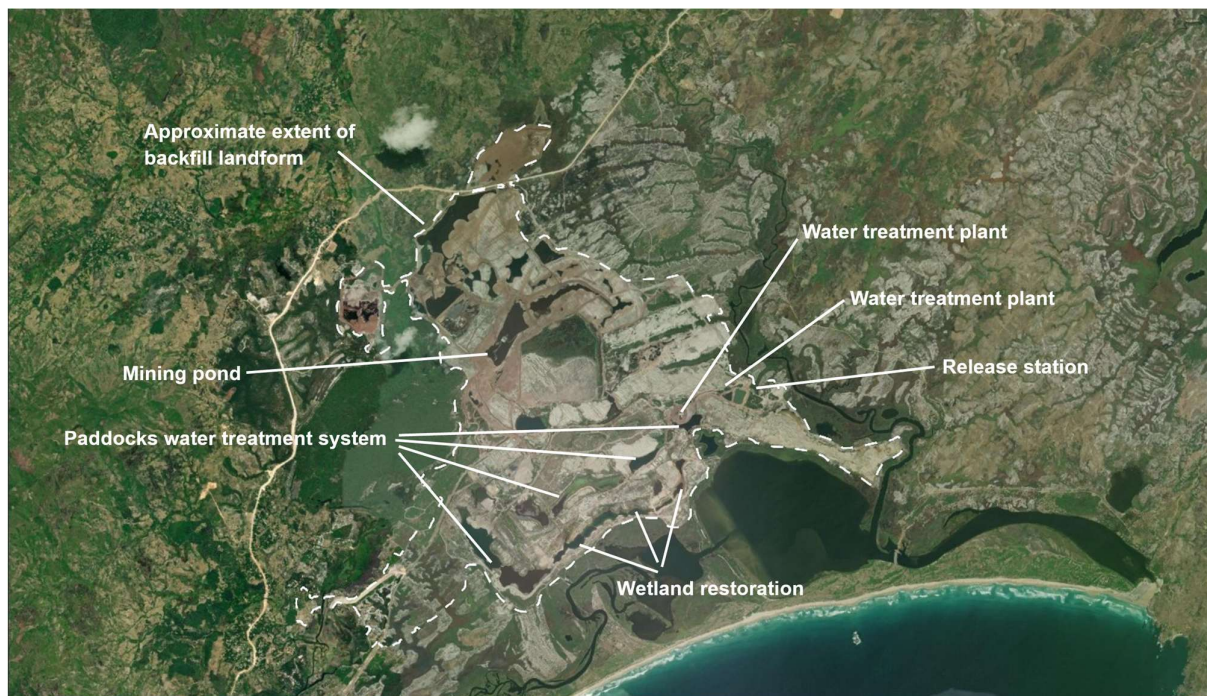


The QIT Madagascar Minerals (QMM) Mandena mine is located about 10 kilometres from Fort-Dauphin in the Anosy region of southeastern Madagascar. The mine mainly produces ilmenite, with zircon and monazite as secondary products.

Mandena has been operational since November 2008. Production comes from a dredge mining pond, supplemented by dry mining. As the dredge mining pond advances, the mining pit is backfilled by pumping the discard sand tailings to the back of the dredge pond, where it is deposited directly out of the pipe to form a shallow beach. The dry mining pit is backfilled by trucking discard sand tailings.

The backfill is designed to recreate a landform similar to the pre-mining undulating terrain, with wetlands in the valleys. The backfilled area is progressively rehabilitated. Some of the backfilled area is used for the water management system, which consists of a series of paddocks that direct water to the water treatment plant and release station. Sand embankments have been constructed in parts of the paddocks to ensure that the water flows towards the water treatment system. A peak flow spillway is acting as an operational spillway as part of the water management system.

The area backfilled with discard sand is known as the Mandena Backfill Landform. As of March 2026, QMM has backfilled approximately 900 hectares.



2. Consequence classification

Credible failure modes for the Mandena Backfill Landform have been identified, and modelling has been undertaken of downstream flooding resulting from potential dam break scenarios at selected locations along the water management system. The dam failure consequence classification was assessed in accordance with the GISTM Consequence Classification Matrix. Incremental losses linked to potential population at risk and potential loss of life, environment, health, social, cultural, infrastructure and economic impacts were considered.

The overall GISTM consequence classification for the Mandena Backfill Landform is 'High', due to the potential impacts of a water management system failure to personnel and the local community, environmental and business disruption for local communities.

In addition, Principle 2 of the GISTM supports the use of credible and recognized alternative methodologies in place of, or in addition to, the standard methodologies provided within the GISTM framework, provided they meet or exceed the same levels of technical rigour, transparency, and effectiveness. The Canadian Dam Association (CDA) guidance on Environmental Consequence Classification (ECC) provides further detailed and quantitative guidelines for the assessment of consequences of dam failure while also considering the intrinsic hazard of tailings (CDA, 2023), and so was adopted to address the Environmental Pillar of the GISTM classification system.

The CDA ECC is based on three variables, as follows:

1. Ecological impact – the estimation of impact is focused on damage to the habitat of species of special interest from physical effects;
2. Intrinsic hazard of contents – this variable focuses on the geochemistry, toxicity, and radioactivity of materials stored in a tailings facility that may be released to the environment; and
3. Duration of impact – this is a modifying variable that reflects potential residual effects after mitigation is applied.

Therefore, for QMM, a comprehensive, expert-led assessment was undertaken. The CDA ECC is 'Significant', before duration of impact is factored in. It is expected that restoration of the impacted habitat is feasible within five years in the event of a facility failure, reducing the consequence classification to 'Low'.

3. Risk assessment summary

Rio Tinto assesses risks in a manner consistent with the International Standards Organisation's *Risk Management – Guidelines* (ISO 31000) using the Rio Tinto *Risk Management Standard*. Assessments of risks related to the construction, operation and closure of Mandena Backfill Landform are undertaken by a multi-disciplinary team of specialists. Risks are evaluated regarding potential consequences related to a range of aspects including but not limited to health and safety, social, human rights, environment, infrastructure and local economics. The material risks that have been identified for Mandena Backfill Landform and their associated mitigation measures are summarised in the table below.

Material risk	Control measure(s)	Status
Embankment failure of water management system.	1. Establishment of a water treatment plant and polishing pond. 2. Water management strategy and vision update 3. Management of Peak flow, institution and installation of a passive flood evacuation system. 4. Alignment of Stability analysis with facility design basis, internal erosion control, operational management and Trigger Action Response Plan implementation.	1. Established. 2. Presented in Water Report first published in December 2023. 3. Peak flow spillway constructed, progressive removal and restoration of parts of the water management system to wetlands ongoing. 4. Established. 5. Study completed in 2025 and will run over several monitoring cycles.
Actual or perceived water management gaps with internationally accepted best practices impacting license to operate and reputation.	5. Receiving environment assessment and social surveys. 6. Improvements in data integrity and capability in testing controls. 7. Host community engagement in water management. 8. Improvement of transparency, disclosure of water report and water dashboard.	6. Ongoing. Water quality sample analyses conducted with external accredited laboratories and working to upgrade QMM on-site laboratory capability and processes. 7. Established routinely. 8. Established and the GISTM disclosure process enhances transparency.
Closure cost may be underestimated.	Regular review of the Closure planning for Mandena Backfill Landform in accordance with Rio Tinto's Our approach to closure and supporting processes, including review of the Mandena Backfill Landform life of facility and closure designs and closure cost estimate.	The closure cost estimate is independently audited. Closure cost estimates for the business are included in Rio Tinto's Annual Report.

Material risks are formally reviewed on a quarterly basis. All other risks are reviewed annually by a multidisciplinary team. Risk assessments are reviewed by the Senior Independent Technical Reviewer and are updated regularly to reflect an accurate current state of the risks and to ensure the controls for the risks remain relevant and effective.

A detailed study of tailings related risks and risk reduction measures was conducted in February 2025 to ensure that the risks associated with Mandena Backfill Landform are effectively managed to a level as low as reasonably practicable (ALARP), and that all reasonable steps have been taken to reduce both the probability and consequences of a tailings facility failure.

4. Impact assessment summary

A Dam Break Study (DBS) modelling of downstream flooding resulting from credible dam failure scenarios has been undertaken.

An independent advisor was engaged to assess the potential social and economic impacts of key failure scenarios of the DBS. This included assessing human exposure and vulnerability, the identification of impacts to people (including loss of life), livelihoods, property, community health and wellbeing, cultural heritage, infrastructure and access to services in the downstream areas likely to be exposed in such scenarios.

This was informed by the DBS and the Social and Economic Knowledge Base built by compiling relevant information from currently available data (e.g. in public literature) and data from a qualitative social survey including the GISTM indicators and was used by the advisor conducting the social impact assessment.

In alignment with the United Nations *Guiding Principles on Business and Human Rights* and Rio Tinto's *Human Rights Policy*, a human rights risk self-assessment was undertaken to identify and address potential human rights consequences from a facility failure at Mandena Backfill Landform. These included consequences linked to people's rights around workplace and community health and safety, community rights, land access and use, labour rights, inclusion and diversity, and climate change.

This information has been shared and discussed with the relevant authorities, Bureau National de Gestion des Risques et des Catastrophes (BNGRC) and their regional organisation, the Force de l'ordre, and Fire and Emergency Services, and the communities. The BNGRC has had input into and approved the development of the Emergency Preparedness and Response Plan, which forms part of the overarching emergency preparedness and response for the site.

Potential environmental impacts were also assessed including water quality, sensitive terrestrial and aquatic ecosystems, threatened species, and designated areas of conservation significance. In addition, potential impacts on health, social, culturally sensitive sites, and the local economy, together with potential impacts on property, roads and infrastructure within the inundation zone were evaluated.

5. Description of the tailings facility design

The discard sand backfilled landform is designed to achieve a final landform that is similar to the pre-mining landscape of gently undulating dunes and valleys. In the valleys are wetlands that drain water to the neighbouring rivers. The design features gentle terrain and slopes that are resilient against climate change and earthquake motion.

The mining and discard sand management process for the dredge pond comprises of four zones: Ore Winning, Discard Stacking, Water Management, and Rehabilitation.

The Ore Winning zone consists of the dredge pond, and floating on the pond is the dredger and concentrator. The dredger mechanically excavates the ore at the mining face and pumps the ore to the concentrator. The height of the mining face varies, but is less than 25 m. The concentrator separates the heavy mineral concentrate (HMC) from the non-mineralised sands. The fine (<45 micron) non-mineralised sand is deposited into the dredge pond where it settles to the bottom. The coarse discard sand is pumped to the Discard Stacking zone.

The discard sand tailings are pumped to the back of the dredge pond, where they are deposited directly out of the pipe, called an open-end, to form a shallow beach. Procedures are in place for machinery and workers approaching the open-end area. No embankments are required for this deposition. The satellite dry mining pits are backfilled by trucking the discard sand.

A water management system is required to restore the pre-mining drainage of water and to store water to sustain operations through seasonal dry periods. Depressions are left in the backfill to create a series of water retaining paddocks that direct the water towards the water treatment plant, where excess water is treated and released through the licenced release point. Along portions of the paddocks, embankments have

been constructed from discard sand to ensure that water is contained and flows to the water treatment plant. Those embankments are designed to meet specific stability objectives and hydraulic gradients. At the release point there is a peak flow spillway which is designed to maintain water levels in the paddocks and preserve the integrity of the structures during peak flow.

Most of the backfilled area is progressively rehabilitated by planting vegetation on the dunes. For closure, the paddocks will either be backfilled or restored as wetlands. QMM has committed to restoring 300 hectares of wetlands in the valleys over the life of the Mandena mine.

6. Review findings summary

The material findings from the most recent independent operational review and their associated mitigation measures are summarised in the table below.

Material review finding	Mitigation measure(s)	Status
Concern on impact on localised stability zone of low strength organic or poor consolidated fine slurry material in places in the paddock and ponds.	- Investigation to better characterize this material. - Review of design and stability based on new information.	- Completed. - Ongoing.

The review confirmed that Mandena Backfill Landform is operated and constructed in accordance with the Rio Tinto *Management of Tailings and Water Storage Facilities Standard*, that provides a framework for the identification, assessment and management of hazards and to minimise risks associated with tailings and water storage facilities. The next independent operational review for Mandena Backfill Landform is scheduled for the second half of 2026.

An independent inspection is also conducted by the Engineer of Record three times a year to review monitoring instrumentation and data, and geotechnical and operational performance. The most recent independent performance review was in February 2026, and the findings are described in the table below.

Material review finding	Mitigation measure(s)	Status
Excess water on site could threaten integrity of embankments.	- Release of water until all freeboards are restored. - Pumping of water between paddocks as necessary to manage water level within the assigned freeboards of individual paddocks. - Maintenance of trenches between paddocks and other passive water management systems. - Completion of the peak flow spillway construction. - Design and construction of a passive flood evacuation system.	- Completed. - Established. - Established. - Completed. - In progress.

7. Environmental and social monitoring programmes

Monitoring programmes form part of Rio Tinto's Health, Safety, Environment and Communities management system, that acts as the environmental social management system under the GISTM.

QMM conducts an extensive monitoring program on water quality within the mine lease area and around Mandena, in compliance with regulatory requirements. This includes monitoring and sampling of groundwater and surface water. In respect to other environment parameters, QMM undertakes ongoing monitoring at regular intervals, including monitoring for radiation and aquatic health parameters.

An annual Environmental and Social Report is submitted to Madagascar's environmental regulator, ONE (Office National pour l'Environnement), including reporting of key performance indicators (KPIs) and surface water data. Additionally, ONE coordinates two annual field audits through the Comité Technique d'Évaluation (CTE) / Comité de Suivi et Évaluation Régionale (CSER) to assess Sectorial Environment Management Plan (SEMP) compliance. The site is also ISO 14001 certified (Environmental Management System), with regular surveillance and recertification audits conducted to ensure compliance with the standard's requirements.

In its commitment to transparency, QMM publishes an annual Water Report, a monthly water dashboard, and radiation study on its website. In response to concerns raised in relation to radiation associated with the site, an independent three-year community study was conducted with results published in 2023. The study demonstrated that local food sources, water, air, and dust are safe from a radiological perspective. As part of the ongoing monitoring program, JBS&G conducted a monitoring event in 2024. The results confirmed that QMM's contribution to radiation levels within the community remains consistent with the conclusions of 2023.

QMM also engages local communities through awareness campaigns, site visits, and community kiosks to foster understanding of its operations, including tailings management, and to listen and respond to community questions. A grievance mechanism is in place and actively promoted to ensure community concerns are heard and addressed.

Material findings from the monitoring programs and grievances are listed in the tables below.

Monitoring program finding	Mitigation measure(s)	Status
Emergency release of partially treated water non-compliant with pH and aluminium.	- Establishment of a water treatment plant and polishing pond. - Management of peak flow. - Assessment of receiving environment.	- Completed. - Completed. - Ongoing.

Allegations/Grievances	Mitigation measure(s)	Status
Allegations of water contamination⁽¹⁾: - Effluent from the mine has contaminated local lakes and waterways due to ineffective waste and wastewater treatment, and ineffective design and management of the berm / tailings. - The contaminant has in turn caused risks to human health, fish and impacted livelihoods of local residents. - The mine has not effectively monitored the impact of water contaminants.	- Establishment of a water treatment plant and polishing pond. - Update of water management strategy. - Institution and installation of a peak flow management and a passive flood evacuation system. - Alignment of Stability analysis with facility design basis, internal erosion control, operational management and TARP implementation. - Receiving environment assessment and social surveys. - Improvement of data integrity and upgrade of testing controls. - Engagement of Host community in water management.	- Established. - Established. - Peak flow spillway constructed, passive flood evacuation system under engineering. - Established. - Study completed in 2025 and will run over several monitoring cycles. - Ongoing. Use of external accredited laboratories to conduct water quality analyses. Also working to upgrade on-site laboratory capability and processes. - Ongoing (continuous improvement – refer to Section 7 above). - Completed – and will continue, available on our website⁽²⁾.

	8. Improvement of transparency and disclosure through water report and water dashboard, and river water monitoring process.	
Allegation of radiation.	1. Continuation of radiation monitoring at appropriate intervals aligned with international guidelines and local requirements.	1. Completed, Monitoring will continue.

Notes:

(1) Concerns about water quality and water management were raised by UK law firm Leigh Day in a letter sent to Rio Tinto plc in 2024.

(2) www.riotinto.com/en/operations/madagascar/qit-madagascar-minerals/qmm-water-management

8. Emergency preparedness and response

A Tailings Response Plan (TRP) has been prepared for the water management system as part of overall emergency preparedness and response planning for QMM.

The TRP is based on credible water flow failure scenarios and the assessment of potential consequences. The emergency preparedness and response planning includes:

- Equipment and personnel resources required to respond to an emergency;
- The chain of command in the event of an actual or potential Water Management System failure;
- Roles and responsibilities of personnel both within the site boundary and externally;
- Personnel competencies and training need analysis;
- Training exercises;
- A graduated TARP, where actions are based on how imminent a failure may be, or where actions are based on a failure that has occurred;
- Communications during an emergency (to employees, contractors, site visitors, Bureau National de Gestion de Crise (BNGRC), Organisme Mixte de Conception (OMC), local authorities, community);
- Evacuation decision making, co-ordination, and planning requirements; and
- Recovery from a Water Management System failure.

The Tailings Response Plan has been developed in consultation with the BNGRC and the Local Disaster Management Group OMC.

In an emergency, QMM has responsibility for evacuation orders within the site boundary. The BNGRC and OMC Group has responsibility for advising the need to evacuate within the community. The BNGRC has overall responsibility to order a mandatory evacuation of the affected community.

9. Independent review timing

The most recent independent operational review of Mandena Backfill Landform was conducted in June 2023. The next review is scheduled for the second half of 2026.

The Engineer of Record for QMM – Mandena carries out independent inspections three times annually to review monitoring systems and evaluate geotechnical and operational performance.

10. Financial capacity for closure

QMM – Mandena is 80% owned by Rio Tinto and 20% owned by the State of Madagascar. Rio Tinto confirms it has adequate financial capacity to cover the estimated costs of planned closure, early closure, reclamation, and post-closure monitoring and maintenance of QMM – Mandena.

IMPORTANT NOTICE**Content of document**

This document includes figures, classifications, assessments and other information regarding tailings and Rio Tinto's systems. Some of the information provided relies upon judgment based on internal or external reviews of information. Unless otherwise stated the information in the document is based on data available as at the date of this document, and judgments or assessments in the document may be based on data which predates the date of this document. The information and views may change based on new or different information, circumstances or events and should not be relied upon as a forecast or recommendation.

Forward looking statements

The information presented contains forward-looking statements (within the meaning of the US Private Securities Litigation Reform Act of 1995) concerning the financial condition, operations and businesses of Rio Tinto. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements.

Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance of, or events affecting Rio Tinto, or the industry, to differ materially from those expressed or implied in these statements. Such forward-looking statements involve subjective judgements and determinations based on available geological, technical, contractual and economic information. These could change because of new information from production or mining activities, or changes in economic factors, including changes in market prices and operating costs, changes in the regulatory policies of host governments, or other events. The statements could also be altered by acquisitions and divestments, new discoveries, and extensions or closure of existing mines, as well as the application of improved recovery and tailings techniques. Published statements could also be subject to correction due to errors in the application of internal assurance or published rules or guidance, and changes in that assurance, rules or guidance. Please also refer to further factors and risks as identified in Rio Tinto's most recent Annual Report and Accounts in Australia and the United Kingdom and the most recent Annual Report on Form 20-F filed with the United States Securities and Exchange Commission ("SEC") or Forms 6-K furnished to, or filed with, the SEC.

As such, readers should not place undue reliance on these forward-looking statements, including with regard to future investment decisions.

Rio Tinto undertakes no obligation to publicly update, or revise, any information in the document, including forward-looking statements, as a result of new information, future events or other information.

Appendix A: Group-level tailings management information supporting the GISTM tailings facility disclosures

5 August 2026

Guidance on interpretation of this Appendix to the GISTM tailings facility disclosures:

The following provides Rio Tinto Group-level information relating to tailings management that supports the GISTM tailings facility disclosures. The processes implemented at individual sites may differ slightly from those described here.

The information provided in this Appendix to the Global Industry Standard on Tailings Management (GISTM) tailings facility disclosures should be read in conjunction with the information relating to Rio Tinto's approach to tailings management that is available on the Rio Tinto website.

Where Rio Tinto considers a Rio Tinto internal process, standard, procedure and/or plan gives rise to a materially similar outcome to a requirement of GISTM, Rio Tinto has adopted the relevant defined term from GISTM for the purpose of reporting under Requirement 15.1.B of GISTM, even though the relevant Rio Tinto process may have a different name or achieve a materially similar outcome by different methods.

The information provided in this disclosure contains forward-looking statements (within the meaning of the US Private Securities Litigation Reform Act of 1995) concerning the financial condition, operations and businesses of Rio Tinto. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements.

Readers should not place undue reliance on these forward-looking statements, including with regard to future investment decisions. This is because forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance of, or events affecting Rio Tinto, or the industry, to differ materially from those expressed or implied in these statements.

Refer to the end of this Appendix to the GISTM tailings facility disclosures for further information on the content of this document and on forward-looking statements.

Appendix A: Group-level tailings management information supporting the GISTM tailings facility disclosures

A.1. Rio Tinto's tailings facilities

Key points:

- *Information for the tailings facilities that Rio Tinto operates are included in our interactive tailings disclosure map on the Rio Tinto website.*
- *New tailings facilities at our operations are in various stages of studies and construction; these will be added to the interactive tailings disclosure map over time.*
- *Rio Tinto also has an interest in tailings facilities at non-managed and non-operated sites.*

Rio Tinto operates a diverse portfolio of tailings facilities at various stages of the tailings facility lifecycle, including tailings contained within engineered earthen embankments and tailings deposited into previously mined open pits. Some tailings facilities consist of embankments constructed in a single phase; others have been raised several times over their active life to increase tailings storage capacity.

For each of our tailings facilities where GISTM implementation is either completed or mostly completed, we have published a tailings facility disclosure statement under Principle 15 of the GISTM that provides information on implementation status. In addition, the tailings information published in response to the request for public disclosure on tailings by the Investor Mining and Tailings Safety Initiative (IMTSI) is available for these facilities.

We periodically update the list of tailings facilities to reflect operational and ownership changes, including changes relating to closure or remediation obligations for legacy assets and reclassification of tailing facilities as these develop over the life of operations.

Rio Tinto also has an interest in other mining operations through joint ventures and other business entities, and through our connection to legacy assets. Sites with tailings facilities in which Rio Tinto has an interest include: Alumar, Blackbird, Escondida, Gladstone Power Station, Mineração Rio do Norte, Olette, Ranger, and Saint Cyr. Refer to the operator or owner for further information on these tailings facilities.

A.2. Consequence classification

Key points:

- *Each tailings facility has been assessed against the five potential loss categories defined in the GISTM and assigned a dam failure consequence classification based on the highest consequence classification across the five categories.*
- *Consequence classifications for Rio Tinto's tailings facilities are a result of assessment by qualified and experienced multi-disciplinary teams following consideration of credible failure modes and impact assessments.*
- *Consequence classifications can change over time.*

Annex 2 of the GISTM includes the Consequence Classification Matrix, as shown below. Using this matrix, potential failures of a tailings facility are assessed against five potential loss categories and assigned a dam failure consequence classification. The overall GISTM consequence classification for a tailings facility is the highest classification across the five categories.

It is important to note that consequence classifications are not ratings of the safety condition of a tailings facility or the likelihood of failure; instead, they rate the potential consequence if the tailings facility were to fail.

Dam Failure Consequence Classification	Incremental Losses				
	Potential Population at Risk	Potential Loss of Life	Environment	Health, Social and Cultural	Infrastructure and Economics
Low	None	None expected	Minimal short-term loss or deterioration of habitat or rare and endangered species.	Minimal effects and disruption of business and livelihoods. No measurable effect on human health. No disruption of heritage, recreation, community or cultural assets.	Low economic losses: area contains limited infrastructure or services. <US\$1M.
Significant	1–10	Unspecified	No significant loss or deterioration of habitat. Potential contamination of livestock/fauna water supply with no health effects. Process water low potential toxicity. Tailings not potentially acid generating and have low neutral leaching potential. Restoration possible within 1 to 5 years.	Significant disruption of business, service or social dislocation. Low likelihood of loss of regional heritage, recreation, community or cultural assets. Low likelihood of health effects.	Losses to recreational facilities, seasonal workplaces, and infrequently used transportation routes. <US\$10M.
High	10–100	Possible (1–10)	Significant loss or deterioration of critical habitat or rare and endangered species. Potential contamination of livestock/fauna water supply with no health effects. Process water moderately toxic. Low potential for acid rock drainage or metal leaching effects of released tailings. Potential area of impact 10 km ² – 20 km ² . Restoration possible but difficult and could take > 5 years.	500–1,000 people affected by disruption of business, services or social dislocation. Disruption of regional heritage, recreation, community or cultural assets. Potential for short term human health effects.	High economic losses affecting infrastructure, public transportation, and commercial facilities, or employment. Moderate relocation/compensation to communities. <US\$100M.
Very High	100–1,000	Likely (10 – 100)	Major loss or deterioration of critical habitat or rare and endangered species. Process water highly toxic. High potential for acid rock drainage or metal leaching effects from released tailings. Potential area of impact > 20 km ² . Restoration or compensation possible but very difficult and requires a long time (5 years to 20 years).	1,000 people affected by disruption of business, services or social dislocation for more than one year. Significant loss of national heritage, community or cultural assets. Potential for significant long-term human health effects.	Very high economic losses affecting important infrastructure or services (e.g., highway, industrial facility, storage facilities, for dangerous substances), or employment. High relocation/compensation to communities. < US\$1B.
Extreme	> 1,000	Many (> 100)	Catastrophic loss of critical habitat or rare and endangered species. Process water highly toxic. Very high potential for acid rock drainage or metal leaching effects from released tailings. Potential area of impact > 20 km ² . Restoration or compensation in kind impossible or requires a very long time (> 20 years).	5,000 people affected by disruption of business, services or social dislocation for years. Significant National heritage or community facilities or cultural assets destroyed. Potential for severe and/or long-term human health effects.	Extreme economic losses affecting critical infrastructure or services (e.g., hospital, major industrial complex, major storage facilities for dangerous substances) or employment. Very high relocation/compensation to communities and very high social readjustment costs. >US\$1B.

Rio Tinto has assigned a GISTM consequence classification to each tailings facility that we operate following assessment of credible failure modes, impact assessments and consideration of downstream conditions. These assessments are conducted by multi-disciplinary teams and use in-house and external expertise. The current GISTM consequence classification for each tailings facility is shown in our interactive tailings disclosure map and in our IMTSI tailings disclosure.

There are other consequence classification schemes in use for tailings facilities, and Rio Tinto has previously published the consequence classifications for our tailings facilities based on the relevant local or international scheme. There may be differences in classification ratings between schemes, depending on the criteria used to assign the classifications.

The consequence classification of a tailings facility can change over time for various reasons, including changes to the operational status of the tailings facility, additional construction that changes the configuration of the tailings facility, the completion of engineering works or implementation of other controls that reduce the potential consequences, or when new information is obtained about the tailings facility, or about the social, environmental and local economic context where the tailings facility is situated.

Consequently, Rio Tinto may, from time to time, amend the consequence classification of a tailings facility. Given the nature of the work required to assess if an amendment to a consequence classification is required, there may be a delay between the change in circumstances that leads to the assessment and amending the consequence classification in our GISTM and IMTSI disclosures and in our interactive tailings disclosure map.

A.3. Risk assessments

Key points:

- *Rio Tinto's Risk Management Standard describes our approach to identifying, assessing, managing and mitigating risk.*
- *Tailings risk assessments consider risk scenarios based on credible failure modes.*
- *Risk assessments are conducted by qualified and experienced multi-disciplinary teams.*
- *Identified risks are managed using a 'three lines of defence' approach.*

All of Rio Tinto's tailings facilities have undergone a detailed risk assessment in alignment with Rio Tinto's *Risk Management Standard* and, where relevant, following our internal guidance on risk analysis for dam safety. Using these processes, potential risk scenarios are listed, risk controls and their effectiveness are assessed, and additional controls are identified. The outcome of these risk assessments is a risk classification using Rio Tinto's internal risk classification scheme which determines the materiality of the risks and the approach to mitigating them.

For tailings facilities, the risk analysis is based on credible failure modes. While credible failure modes are possible ways that a tailings facility could fail, the GISTM notes that *"credible catastrophic failure modes do not exist for all tailings facilities"* and *"the term 'credible failure mode' is not associated with a probability of this event occurring and having credible failure modes is not a reflection of facility safety"*.

Credible failure modes can vary over the lifecycle of a tailings facility as the operating conditions change; the risk assessment process takes into account these changes, and risk assessments can be done at different stages in the life cycle (for example, a risk assessment will occur for the operating phase of the tailings facility and will subsequently be reviewed and updated when the tailings facility moves into the closure phase).

Tailings facility risk assessments are conducted by multi-disciplinary teams to consider the potential causes and impacts of a tailings facility failure including to communities and the environment. Rio Tinto has qualified and experienced personnel who participate in these risk assessments, and we also use the expertise and knowledge of external consultants at various times to contribute to and review the outcomes.

We have a structured approach to managing risks associated with tailings facilities, underpinned by our *Management of Tailings and Water Storage Facilities Standard*. We apply a 'three lines of defence' approach to assurance activities to ensure risks are appropriately managed over the lifecycle of the facility.

A.4. Impact assessment, and human exposure and vulnerability

Key points:

- *Impact assessments have been used to inform and identify potential environmental impacts, and potential human exposure and vulnerability to a tailings facility failure.*
- *Human exposure and vulnerability assessments are used to inform the social impact assessments and other social studies that consider social, environmental and local economic contexts relevant to the tailings facility.*
- *A human rights risk self-assessment is used to identify, assess, manage and mitigate any potential impacts to project-affected people's salient human rights, in alignment with the United Nations Guiding Principles on Business and Human Rights and Rio Tinto's Human Rights Policy.*

Rio Tinto's environment Group Standards outline the minimum performance requirements for the management of water quality, air quality, mineral waste (including tailings), land disturbance and rehabilitation, hazardous materials and non-mineral waste as well as biodiversity and natural resource management. Our Health, Safety, Environment and Communities management system ensures that our environment standards are considered collectively with health, safety, and social performance standards as part of the hazard identification and risk management process to identify and control risks associated with business activities.

Regulations in the jurisdictions where we operate require Rio Tinto to conduct environmental impact assessments (EIAs) or social and environmental impact assessments (SEIAs) as part of any new mine development and, where required, expansions to existing operations. Additionally, risk assessments are required to be undertaken that consider climate change, water management and any hazards associated with physiochemical properties and biogeochemistry of tailings. To understand the potential risks associated with climate change affecting the stability of tailings facilities, assessments have been undertaken in line with Rio Tinto's approach to climate risk and resilience assessment for new, operating and closed tailings facilities.

Environmental baseline information and supporting monitoring information for each tailings facility has been incorporated into the integrated knowledge base. Additional environmental assessments have been undertaken as required to supplement the knowledge base to support tailings management risk mitigation approaches.

The intent of Rio Tinto's *Communities and Social Performance Standard* is to prevent, or otherwise minimise, mitigate and remediate adverse effects of Rio Tinto's operations on people, communities and environments, and strengthen positive outcomes. The Standard sets out minimum mandatory requirements, relating to social and human rights risks and impacts, community engagement and Indigenous Peoples.

To assess potential human exposure, and vulnerability, together with social risks and impacts from a tailings facility failure, assessments have been conducted in alignment with international standards, guidelines and best practice approaches, linked to:

- Social knowledge base, community baselines, socio-economic data and local context considerations;
- Social risks resulting from a potential tailings facility failure being considered through the formal, multidisciplinary risk assessment process using Rio Tinto's risk evaluation framework to quantify the potential consequences to people, health and safety, human rights, license to operate, the environment, business integrity, and legal and regulatory compliance;
- Human exposure and vulnerability assessments conducted for each tailings facility to identify induced and inherent vulnerabilities from a failure scenario identified as part of the dam break study, and how this information is used to support emergency response preparedness;
- Social impact assessments being updated to reflect current social contexts, baselines, stakeholders, and dependencies in response to a tailings facility failure event; and
- In alignment with the United Nations *Guiding Principles on Business and Human Rights* and Rio Tinto's *Human Rights Policy*, a targeted human rights risk self-assessment tool is used to consider and manage salient human rights risks resulting from a tailings facility failure. The tool provides a framework for identifying, assessing, mitigating, managing and monitoring human rights risks in alignment with Rio Tinto's *Risk Management Standard* and *Communities and Social Performance Standard*.

A.5. Tailings facility design

Key points:

- *The design of each tailings facility is unique, based on the type of tailings and the location in which the tailings facility is situated.*
- *Our tailings facilities are designed and reviewed by qualified and experienced consultants.*
- *Designs are undertaken to industry standards and leading practice guidance.*

Tailings storage is a substantial design decision when developing a mine, and there are many factors that need to be considered in selecting the site and construction method to safely contain the tailings. Site conditions such as topography, foundation conditions, rainfall, seismic activity, mineral characteristics and proximity to people and communities dictate appropriate siting of tailings facility locations, technology and storage solutions. As a result, each tailings facility is unique.

Depending on the environment and the chemical characteristics of the tailings, the tailings facility may be lined, using a variety of lining systems which are designed to prevent impacts to surface and groundwater systems. In other cases, lining may not be required and storage behind an engineered earthen embankment or within a mined-out open pit may be sufficient. Back-filling of mined-out pits may have advantages for overall risk reduction and will generally be considered as an option for tailings storage where practicable.

As the tailings slurry is collected in the tailings facility, the water separates from the heavier sand and silt particles and is collected at the surface. The water in the tailings facility may then be recycled back to the process plant for reuse to minimise the impacts to the environment.

In addition to the design requirements specified by the GISTM, our *Management of Tailings and Water Storage Facilities Standard* has specific requirements relating to the design of tailings facilities. The design of our tailings facilities is carried out to industry accepted design standards and design criteria by qualified and experienced personnel employed by engineering consulting companies. The designs are also reviewed by independent tailings facility specialists. For our 'Very High' or 'Extreme' consequence classification tailings facilities, oversight and review of the technical aspects of the design is within the remit of the Independent Tailings Review Board.

A.6. Annual performance reviews and dam safety reviews

Key points:

- *Annual performance reviews are undertaken by the Engineer of Record, and findings are reported back to Rio Tinto.*
- *Dam Safety Reviews comprise of independent reviews conducted in alignment with our Management of Tailings and Water Storage Facilities Standard, together with reviews of our As Low As Reasonably Practicable (ALARP) risk assessments.*
- *ALARP demonstration is an ongoing process for the lifecycle of the tailings facility and is a driver for improvements to the management of our tailings facilities.*

Supporting the performance requirements specified by the GISTM, the Rio Tinto *Management of Tailings and Water Storage Facilities Standard* has specific requirements relating to monitoring and design verification. The key requirements are:

- All personnel conducting monitoring, survey and other design verifications must be suitably trained and familiar with the tailings facility performance objectives;
- Reports must be prepared that outline tailings facility performance at specified intervals;
- The Engineer of Record must inspect the tailings facility at least annually and review the operational documentation to confirm that operation of the tailings facility conforms to the intent of the design; and
- Monitoring reports must be reviewed by the Engineer of Record and must confirm that the tailings facility is operating within the design constraints.

To meet these requirements, an annual performance review is undertaken by the Engineer of Record to assess performance of the operation to design, and a review report is then provided to Rio Tinto.

Rio Tinto addresses the GISTM requirements of a Dam Safety Review by undertaking independent reviews and risk analyses processes to demonstrate that risks have been reduced, including to an As Low As Reasonably Practicable (ALARP) level where required.

Design reviews are conducted at various stages of the design process. The independent design review includes detailed technical review of all aspects of the design with emphasis on the design basis analysis including site and material characterisations, water balance, and stability modelling.

The life-of-facility design is reviewed by an independent tailings facility specialist prior to the implementation of the design. Each detailed stage design, including final closure design, is also reviewed by an independent tailings facility specialist prior to start of construction. The independent specialist evaluates the technical aspects of the design including construction drawings and technical specifications and ensures that the stage designs align with the life-of-facility design.

Independent operational reviews are planned for and completed through the tailings facility lifecycle, including closure and post-closure phases, to identify physical hazards associated with geotechnical, hydrological, hydrogeological and performance aspects of the tailings facility. Reviews are conducted at a frequency of not less than once every two years. Following implementation of the GISTM for a tailings facility, the independent reviewer will make a statement on the safety of the tailings facility, in accordance with the requirements of the GISTM.

ALARP demonstration is undertaken predominantly through a formalised quantitative risk assessment process. ALARP demonstration activities are documented, including actions and timing for completion, and associated commentary is provided on the rationale behind the design decisions. We then subsequently confirm that all actions have been implemented to mitigate risks.

The Engineer of Record reviews the ALARP assessment results, followed by an additional review by the Independent Tailings Review Board or senior independent technical reviewer. The Accountable Executive may then take the decision to confirm that the tailings facility is at ALARP level, or direct further works to be undertaken to demonstrate ALARP.

ALARP demonstration is not a one-off event; it is an iterative process through the tailings facility lifecycle, including closure. The Rio Tinto processes listed above align with the GISTM ALARP requirements to:

- Conduct and update risk assessments with a qualified multi-disciplinary team using best practice methodologies at a minimum every three years and more frequently whenever there is a material change either to the tailings facility or to the social, environmental and local economic context; and
- Conduct a review of ALARP at the time of every Dam Safety Review or at least every five years for an existing tailings facility classified as 'High', 'Very High' or 'Extreme'.

A.7. Environmental and social monitoring

Key points:

- *Effective and integrated management of the tailings facility is governed through our Environmental and Social Management System (ESMS).*
- *The business monitors local communities, in terms of social contexts, impacts, dependencies, public perceptions, trust and acceptance, feedback, complaints and grievances through the collection and analysis of data to inform decision making.*
- *Engagement with local authorities and stakeholders is ongoing, with the intent to continue to raise awareness and maintain a shared state of preparedness in the event of tailings facility failure.*
- *Environmental monitoring activities in support of our tailings facilities is ongoing.*

Rio Tinto's Health, Safety, Environment and Communities (HSEC) management system is reflective of the 'plan, do, check, act' concept that integrates procedures and objectives to manage environmental and social risks and impacts in a structured and meaningful way. The HSEC system meets the requirements of the environmental social management system (ESMS) under GISTM, in that it supports sustainable environmental and social performance, reflects clearly defined and repeatable processes, is dynamic, promotes continuous improvements and is integrated with other management systems, including the tailings management system.

Environmental and social monitoring activities are in place to support the management system. Environmental monitoring programs are established based on environmental impact assessments to determine actual and potential impacts from mining projects, which are compared against predicted or modelled impacts as part of the assessment process.

As part of the environmental impact assessment process, Rio Tinto is also required to undertake monitoring of impacts to the receiving environment to satisfy conditions and commitments outlined in statutory approvals and to conform to the requirements of our environment standards.

Monitoring can include, but is not limited to, assessment of impacts of the tailings facility to local and/or regional groundwater quality, surface water quality and local air quality. In most jurisdictions, reporting of environmental performance is through provision of monitoring results to the local regulators, as well as nominated affected stakeholders, and is required on at least an annual basis for the life of the tailings facility, including the closure and post-closure phases.

Our approach to social monitoring involves the collection and monitoring of data linked to socio-economic contexts of local communities, risk and impact assessments, stakeholder feedback, community perception surveys, complaints and grievances, and requests for information. The information gathered is used to manage social risks and impacts, measure performance against targets, and to inform decision making.

Engagement with local communities is used to increase awareness of each tailings facility and our approach to safe tailings management, to build an integrated knowledge base for each tailings facility and local surroundings, collectively develop plans to monitor performance, and to support a maintained shared state of preparedness in the event of a tailings facility failure. A variety of engagement tools and resources have been developed to support local engagement activities.

With safety and transparency being core principles for Rio Tinto and the GISTM, we are engaging with local communities about the tailings facilities located in the areas where we operate and we will continue to share relevant information, seek input and ensure communities are prepared in the unlikely event of a failure.

Community grievances are managed through a mechanism that outlines processes for obtaining, handling, responding to, and remedying complaints and grievances. Our *Communities and Social Performance Standard* requires that each site has a mechanism that has been designed in consultation with communities

and stakeholders, is publicly available, easily accessible, and allows for an appeal process for resolution of complex complaints or grievances.

To date, there have been a small number of reported complaints and requests for additional information in relation to tailings management from local communities across our global footprint. The complaints have been managed in accordance with our internal standards and procedures and responses provided to stakeholders as appropriate. As engagement continues, local communities will have more opportunity to raise questions, seek clarification, express concerns and request information.

A.8. Emergency preparedness and response

Key points:

- *Rio Tinto has a well-established Business Resilience and Recovery Programme, which applies to all emergency situations including tailings-related events.*
- *Immediate emergency response is provided by our emergency response teams, in collaboration with local emergency response groups as required.*
- *We engage with local communities and agencies on emergency response planning and considerations for longer-term recovery.*

Principles 13 and 14 of the GISTM include the requirement for a site-specific tailings facility Emergency Preparedness and Response Plan which includes specific actions to both prepare for and manage an escalating event, and deliver long-term business, social and environmental recovery following a catastrophic failure.

The Business Resilience and Recovery Programme (BRRP) is Rio Tinto's emergency and crisis management framework, ensuring enterprise-wide preparedness to respond to actual and potential incidents and/or events that may impact local communities, the environment, or our business objectives.

Our sites leverage the BRRP framework to address the GISTM requirements. Each site has an emergency response team that acts as first responders to any emergency on site. These teams are trained in rescue, medical aid and evacuations, and regularly practice emergency response scenarios. The role of the public sector or civil emergency response would be significant in the event of a catastrophic tailings facility failure, with their role likely to extend to the assumption of overall incident command in accordance with legislative requirements. In this situation, the site will comply with the directions of the lead response agency and cooperate with their response efforts.

In alignment with the BRRP and to meet the requirements of the GISTM for an Emergency Preparedness and Response Plan, a Tailings Response Plan has been prepared for each tailings facility as part of the overall emergency preparedness and response planning for local communities. The Tailings Response Plan is based on credible flow failure scenarios and the assessment of potential consequences. The plan includes details on roles and responsibilities, chain of command, training competencies, action responses, evacuation procedures and considerations for recovery.

To prepare for long term recovery in the event of a tailings facility failure, we will engage with public sector agencies and other organisations to consider social and environmental response strategies that may be relevant to reconstruction, restoration and recovery activities, tailored to the failure scenario and local context. In the event of a failure, a long-term recovery plan would then be developed and implemented in partnership with all relevant stakeholders supporting the recovery efforts.

A.9. Frequency of independent reviews

Key points:

- *Independent reviews of tailings facility designs are conducted at key stages of the design phase for each of our tailings facilities.*
- *Independent reviews of tailings facility operation are conducted at a frequency of not less than once every two years.*
- *Rio Tinto has a process for appointing Independent Tailings Review Boards for tailings facilities with 'Very High' and 'Extreme' consequence classifications.*

As detailed in Section A.6, the independent reviews undertaken by Rio Tinto include reviews of tailings facility designs, and reviews of tailings facility operation. Independent design reviews will be conducted as required at multiple stages of the design process as it progresses and typically occur at each project stage through pre-feasibility, feasibility, and other check points of the detailed design phase. Independent operational reviews, where an assessment on the performance of the tailings facility is conducted, are conducted at least every three to five years with the frequency determined by the potential consequence.

In addition to these independent reviews, Rio Tinto undertakes Independent Tailings Review Board reviews for tailings facilities with a GISTM consequence classification of 'Very High' and 'Extreme'. The Independent Tailings Review Board's role is to provide the Accountable Executive and senior management with independent, objective, expert advice in identifying, understanding, and managing the risks and opportunities associated with the relevant tailings facility. The Independent Tailings Review Board procedures require:

- A minimum of three members to constitute the Board;
- Additional members to be appointed depending upon the risks associated with, and the complexity of, the tailings facility; and
- A minimum of two internationally recognised expert board members who are independent and external to the business.

A.10. Financial capacity for closure

Key points:

- *Rio Tinto has processes in place for estimating closure costs.*
- *Closure provisions for close-down, restoration and environmental obligations are included in the financial statements described in Rio Tinto's Annual Report.*
- *Rio Tinto's financial statements are audited by an independent auditor.*

The financial provisions and estimated closure costs for sites are included in Rio Tinto's consolidated financial statements in Rio Tinto's *Annual Report*. A copy of the latest *Annual Report* can be downloaded from Rio Tinto's website.

The financial provisions for close-down and restoration costs include the dismantling and demolition of infrastructure, the removal of residual materials, and the remediation of disturbed areas for mines and refineries and smelters. The provision excludes the impact of future disturbance which is planned to occur during the life of mine, so that it represents only incurred disturbance as at the balance sheet date.

Close-down and restoration costs are a normal consequence of mining or production, and the majority of close-down and restoration expenditure is incurred in the years following closure of the mine, refinery or smelter. Although the ultimate cost to be incurred is uncertain, the Group's businesses estimate their costs using current restoration standards, techniques and expected climate conditions. The costs are estimated on the basis of a closure plan and are reviewed at each reporting period during the life of the operation to reflect known developments. The estimates are also subject to formal review, with appropriate external support, at regular intervals.

We use our judgment and experience to determine the potential scope of closure rehabilitation work required to meet the Group's legal, statutory and constructive obligations, and any other commitments made to stakeholders, and the options and techniques available to meet those obligations and estimate the associated costs and the likely timing of those costs. Further details can be found under the heading 'Provision for closure costs' in the Financial Review section of the *Annual Report*.

The financial statements included in the Annual Report are audited by an independent auditor who provides an opinion that the financial statements give a true and fair view of the state of Rio Tinto's affairs, and that the statements have been properly prepared in accordance with international accounting standards. Evaluation of specific provisions for close-down, restoration and environmental obligations ('closure provisions') at certain sites is a recurring Key Audit Matter (KAM) noted in the independent auditors' report. For further information, refer to the Independent Auditor's Reports section of the *Annual Report*.

IMPORTANT NOTICE**Content of document**

This document includes figures, classifications, assessments and other information regarding tailings and Rio Tinto's systems. Some of the information provided relies upon judgment based on internal or external reviews of information. Unless otherwise stated the information in the document is based on data available as at the date of this document, and judgments or assessments in the document may be based on data which predates the date of this document. The information and views may change based on new or different information, circumstances or events and should not be relied upon as a forecast or recommendation.

Forward looking statements

The information presented contains forward-looking statements (within the meaning of the US Private Securities Litigation Reform Act of 1995) concerning the financial condition, operations and businesses of Rio Tinto. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements.

Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance of, or events affecting Rio Tinto, or the industry, to differ materially from those expressed or implied in these statements. Such forward-looking statements involve subjective judgements and determinations based on available geological, technical, contractual and economic information. These could change because of new information from production or mining activities, or changes in economic factors, including changes in market prices and operating costs, changes in the regulatory policies of host governments, or other events. The statements could also be altered by acquisitions and divestments, new discoveries, and extensions or closure of existing mines, as well as the application of improved recovery and tailings techniques. Published statements could also be subject to correction due to errors in the application of internal assurance or published rules or guidance, and changes in that assurance, rules or guidance. Please also refer to further factors and risks as identified in Rio Tinto's most recent Annual Report and Accounts in Australia and the United Kingdom and the most recent Annual Report on Form 20-F filed with the United States Securities and Exchange Commission ("SEC") or Forms 6-K furnished to, or filed with, the SEC.

As such, readers should not place undue reliance on these forward-looking statements, including with regard to future investment decisions.

Rio Tinto undertakes no obligation to publicly update, or revise, any information in the document, including forward-looking statements, as a result of new information, future events or other information.