

# TSF Independent Panel for McArthur River Mine - Terms of Reference

## 1. Background

McArthur River Mine is an open pit zinc, lead and silver mining operation in the Northern Territory (NT), located approximately 700 kilometres (km) south-east of Darwin, and approximately 45 km south-west of the township of Borroloola. McArthur River Mining Pty Ltd (MRM) is the authorised operator of McArthur River Mine, and is a wholly owned subsidiary of Glencore Plc.

The Tailings Storage Facility (TSF) at McArthur River Mine is the key infrastructure for deposition of tailings from the processing circuit. The TSF is divided into Cell 1 and Cell 2, wherein tailings are deposited using a spigot discharge system around each cell perimeter.

The environmental objective against which the performance of the TSF is measured is the protection of the health of the McArthur River along its entire length from mine related impacts<sup>1</sup>.

In 2020 MRM submitted to the department for approval under the *Mining Management Act 2001* (MMA) TSF designs to support the safe and effective deposition of tailings material until the end of mining when the tailings would be re-processed and disposed of in the Open Pit void.

The documents informing the approved Mining Management Plan presented three significant actions to address identified risks in relation to:

1. **Combining TSF Cells 1 and 2** to increase the total capacity of the TSF without increasing the overall footprint of the facility
2. **Undertaking a series of raises on the TSF embankment** to allow for increased deposition capacity
3. **Implementing a TSF interception scheme** in order to limit the contaminant loads, particularly sulfate, reaching Surprise Creek.

The TSF Panel is a requirement of regulatory approvals to which McArthur River Mine is subject under the NT MMA. Other regulatory approvals of relevance to operation of McArthur River Mine have been issued under the NT *Water Act 1992* and *Environment Protection Act 2019*, and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The importance of the TSF Panel lies in providing external and transparent oversight and reporting, to advise the government and the community on the performance of the TSF.

## 2. Purpose

The purpose of the TSF Panel is to provide the MMA regulator (the Minister for Mining and Industry) with robust, independent advice regarding the effectiveness of TSF management- i.e. to provide the regulator with a reasonable level of confidence that the TSF is securely storing tailings so that the overarching environmental objective can be achieved.

To achieve this purpose, the TSF Panel will undertake a triennial technical review (once every three years) focused on the:

1. outcomes of MRM's approved management program for the TSF

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<sup>1</sup> NT EPA Assessment Report 86, July 2018, (Executive Summary, page xii) accessible at: [https://ntepa.nt.gov.au/\\_\\_data/assets/pdf\\_file/0004/553081/mrm\\_overburden\\_assessment\\_report.pdf](https://ntepa.nt.gov.au/__data/assets/pdf_file/0004/553081/mrm_overburden_assessment_report.pdf)

2. seepage monitoring results and the appropriateness of the seepage system with respect to abating environmental risks to the McArthur River.

### 3. Scope

The TSF Panel is not a decision making body.

The TSF Panel is an independent advisory body, limited to providing technical assessment and advice regarding the performance of the TSF.

Aspects of the TSF for the TSF Panel to consider in preparing their advice to the regulator are outlined in **Appendix A**.

In the conduct of its duties TSF Panels members will review relevant management plans, monitoring data and reports, the *TSF Operations, Maintenance and Surveillance Manual* and undertake an independent assessment of the performance of the TSF.

At completion of each review, the TSF Panel will submit to MRM and the Department a report detailing the findings of their technical review of the performance of the TSF addressing at a minimum '*berm stability, risk of overtopping, seepage and other aspects of the TSF that could impact on site water quality and the McArthur River, including the risk of catastrophic failure of any component of the TSF, to ensure that the overarching environmental outcome can be met.*'<sup>2</sup>

The TSF Panel will not undertake any contractual review or reporting regarding MRM operations between triennial review and reporting periods. It is acknowledged that members of the TSF Panel may engage with the project between reviews for the purpose of maintaining a contemporary understanding of matters of importance. Such interactions will be recorded and provided to the department consistent with the Communication Protocol at Section 9.

Any review by the TSF Panel of reports or methodology prepared by MRM would take place as part of the TSF Panel's triennial review and reporting.

The TSF Panel is to report on whether:

1. the design of the TSF is consistent with best available practice
2. the design is suited to the particular circumstances of the site and operations
3. construction of the TSF is proceeding in accordance with the approved design
4. the environmental outcomes as indicated by monitoring are in line with predictions and expectations
5. there are any significant issues affecting performance or future closure
6. the overarching environmental outcome of protecting the health of the McArthur River from mining related impacts attributable to the TSF continue to be met
7. there are any other matters relating to the TSF that require attention as deemed appropriate by the TSF Panel in consultation with the regulator.

### 4. Panel Membership

The TSF Panel will be chaired by an independent technical expert appointed by the NT Minister for Mining and Industry in consultation with the NT Minister for Environment.

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<sup>2</sup> NT EPA Assessment Report 86, July 2018, Recommendation 11, as reproduced in Excerpt 1.

The TSF Panel will comprise members who are recognised experts in their respective scientific field.

TSF Panel members will be appointed by the Minister for Mining and Industry for each triennial review. Where appropriate, past panel members may be reappointed. The members appointed will bring a diversity of skills, experience and views from a range of scientific backgrounds of relevance to undertake an independent technical assessment of the performance of the TSF. At a minimum, the TSF Panel will include hydrogeological, geotechnical and water quality data assessment skills and experience.

While membership of the TSF Panel will be subject to change between three yearly reviews, the panel will be convened triennially for the life of the project, including during any period of care and maintenance.

To ensure independence is maintained, the intention is that members have:

- no pecuniary interest in McArthur River Mine
- had no professional involvement with MRM during the 3 year period under review other than in a peer review capacity.

It is acknowledged there are very few recognised experts with the required specialist knowledge able to fulfil the TSF Panel requirements.

Should members have any (i.e. past/present/proposed) association with McArthur River Mine, the conflict of interest must be declared and reported to the Chairperson. The Chairperson will then make a recommendation to the department. The department will consider the recommendation and, based on available evidence and natural justice, take appropriate action.

The names and credentials of the TSF Panel members will be published on an appropriate NT Government website.

## 5. Role of Chairperson

The Chairperson is to provide leadership to the TSF Panel, including:

- advising members of their roles and responsibilities as members of the TSF Panel
- developing the scope, content, assessment criteria and timeline for the review (for approval by the department)
- overseeing the preparation and submission of the draft and final reports
- overseeing the receipt of feedback provided by MRM and the department on the draft report and amendment of the report to the extent required to correct factual inaccuracies
- convening and running meetings as required, including overseeing that appropriate meeting records (e.g. minutes) and correspondence are kept
- arranging information requests and discussion with the department, and with other relevant groups through the department (see Section 6)
- being the point of contact for the TSF Panel.

The Chairperson is to be a technical expert in their own right, performing the additional functions as outlined above.

## 6. Reporting Obligations and Process

The TSF Panel must submit a report to MRM and the department within 12 months of establishment (or otherwise, as agreed with the department); and subsequently on a triennial basis from the date of the first report submission.

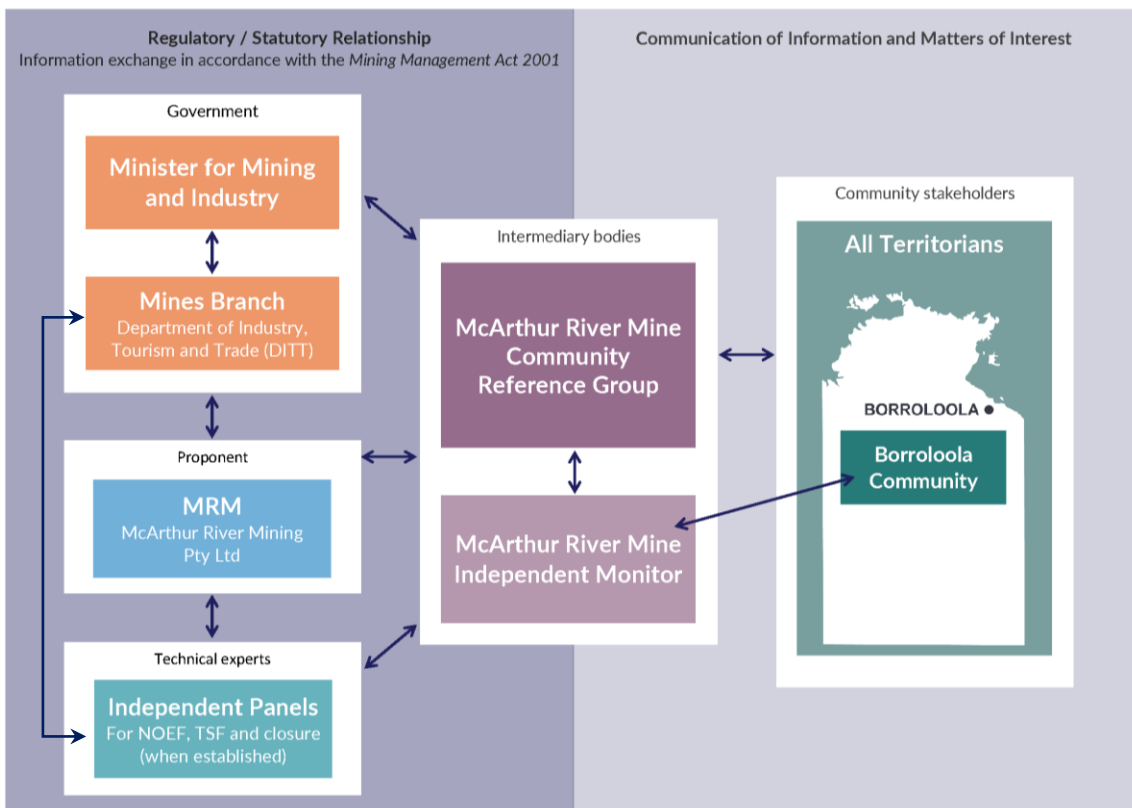
The report must detail the review assessment criteria and methodology; and the Panel’s conclusions regarding the performance of the TSF and its effectiveness in achieving the overarching environmental objective.

A draft report is to be submitted to MRM and the department for factual review two months prior to its final submission. The department will coordinate expert advice from relevant agencies as appropriate.

Should the TSF Panel need to meet with other independent bodies for the Mine (e.g. the Mine Closure Panel) or government agencies (e.g. the Department of Environment, Parks and Water Security, DEPWS) to discuss findings, this should be arranged in consultation with the department and MRM in accordance with the communication protocol outlined in Section 9, to ensure transparency and accountability.

The department will provide a copy of the final report to other regulators, the Community Reference Group and the Independent Monitor; and publish the report on the department’s website.

The relationships between the TSF Panel and various parties relative to regulatory requirements are depicted in Figure 1.



**Figure 1: Relationships between governance bodies for the McArthur River Mine**

## 7. Period of Review

The structure of the TSF Panel and its Terms of Reference shall be reviewed every six years<sup>3</sup> from the date the Terms of Reference are finalised, or sooner, if required. Reviews are to be conducted by the NT Minister for Mining and Industry, in consultation with the NT Minister for Environment.

If the Chairperson has concerns about the effectiveness of the TSF Panel, they may refer the matter to the department. The department will consider the concerns raised and determine what action should be taken.

## 8. Obligations of the Operator

MRM is required to:

1. assist as necessary with the establishment and operation of the TSF Panel
2. fund reasonable costs for the TSF Panel
3. organise site visits for the TSF Panel as required to fulfil its role
4. provide the TSF Panel with timely, accurate and comprehensive reports (including supporting data relevant to the TSF) such as the:
  - annual Environmental Monitoring Report<sup>4</sup>
  - TSF construction reports and monitoring data
  - approved Mining Management Plan and other relevant plans (including the Adaptive Management Plan).
5. provide the TSF Panel with timely and accurate monitoring data relevant to TSF performance (as deemed by the TSF Panel) as soon as practicable in light of the request made, and in any event no later than 28 days of receiving the request
6. respond to questions asked or advice given by the TSF Panel about MRM's environmental performance within 28 days of receiving the request.

## 9. Communication Protocol

Table 1 outlines a protocol for any communication that takes place between MRM, the TSF Panel and other relevant bodies. The intent of the communication protocol is to ensure a transparent process is followed and the TSF Panel can be seen to operate independently.

**Table 1: Communication Protocol**

Relevant Matter	Approved Communication Method	Other Requirements
Request from Panel for reports and data from MRM	Chairperson to contact MRM directly via email	Copy to be sent to the department
Provision of reports and data from MRM by Panel	MRM to provide directly to Chairperson via email	Copy to be sent to the department

<sup>3</sup> NT EPA Recommendation 11, as reproduced in Excerpt 1.

<sup>4</sup> A requirement under section 37(3)(e) of the *Mining Management Act 2001*.

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Relevant Matter	Approved Communication Method	Other Requirements
Clarification/discussions	Direct discussion between Panel and MRM to address issues raised by Panel Direct discussion between Panel and the department Department to facilitate discussion between Panel and other agencies, panels and the IM (as required)	The department to be informed of engagement where it relates to report findings/conclusions
Provision of draft reports/findings by Panel	Chairperson to issue directly to MRM	Copy to be sent to the department (and circulated by the department to the Independent Monitor and Community Reference Group as appropriate)
Provision of comments on draft reports/findings by MRM	MRM to issue to Chairperson	Copy to be sent to the department
Provision of final report by Panel	Chairperson to issue to MRM and the department	The department to distribute report to DEPWS, Independent Monitor and Community Reference Group and publish the report on the department's website
Panel site visits/other meetings	Chairperson to inform the department of proposed site visits/meetings and arrange with MRM directly	The department to be offered opportunity to participate in site visits/meetings

Other communication methods not outlined in this protocol may be used upon endorsement by the department.

## Relevant Excerpts

### Excerpt 1 – NT EPA Assessment Report 86 Recommendation 11<sup>5</sup>

*Approvals and decisions in relation to the proposal will include conditions requiring the Proponent<sup>6</sup> to provide funding to establish and operate a panel of independent experts to:*

- i. review every three years the outcomes of the Proponent's management program for the TSF including the berm stability, risk of overtopping, seepage and other aspects of the TSF that could impact on site water quality and the McArthur River, including the risk of catastrophic failure of any component of the TSF, to ensure that the overarching environmental outcome can be met*
- ii. review TSF seepage monitoring results and the appropriateness of the monitoring program.*

*The panel shall provide a report every three years to the relevant regulator and the Independent Monitor and is made available to the Proponent, government agencies, the Community Reference Group and the public.*

*The panel shall be formed:*

- iii. With an independent chair, appointed by the responsible Minister in consultation with the Minister for Environment and Natural Resources.*
- iv. on the advice of the Department of Environment and Natural Resources, the Department of Primary Industry and Resources, and the Proponent.*

*Terms of Reference for the panel shall set out the terms for roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and transparency and accountability. The Terms of Reference shall be finalised by the responsible Minister, in consultation with the Minister for Environment and Natural Resources acting on advice from the NT EPA, within six months of authorisation of the Proposal.*

*The structure of the panel and its Terms of Reference shall be reviewed by the Responsible Minister, in consultation with the Minister for Environment and Natural Resources every six years from the date the Terms of Reference are finalised.*

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<sup>5</sup> NT EPA Assessment Report 86, July 2018 - Executive Summary page xvii - accessible at: [https://ntepa.nt.gov.au/\\_\\_data/assets/pdf\\_file/0004/553081/mrm\\_overburden\\_assessment\\_report.pdf](https://ntepa.nt.gov.au/__data/assets/pdf_file/0004/553081/mrm_overburden_assessment_report.pdf)

<sup>6</sup> NT EPA documentation refers to the Proponent. Under the *Mining Management Act 2001*, MRM is the operator authorised to undertake the mining activities proposed in the approved Mining Management Plan.

## Appendix A: Matters for consideration by the TSF Panel

Key aspects for consideration by the TSF Panel in their review of the performance of the TSF against the objective of protecting the health of the McArthur River from mining related impacts:

1. **Construction:** Review TSF Life of Mine (LOM) Plan and TSF Raising – General Specification for Design and Construction documents addressing construction/engineering matters relating to:
  - a. Structural stability, by reference to approved designs and construction specifications with consideration given to the appropriateness of the TSF:
    - i. design Philosophy, Standards and Criteria
    - ii. Consequence Category Assessment, as detailed in ANCOLD, 2012<sup>7</sup>
    - iii. embankment geotechnical stability and embankment raises, including combined Cell 1 and 2
    - iv. decant pond
    - v. spillway
    - vi. engineering and geochemical suitability of materials used
    - vii. seepage interception trench and ancillary structures including dams and sumps
  - b. Risk assessment, management and controls
  - c. Independent oversight:
    - i. Independent Certifying Engineer<sup>8</sup> signoff records for hold points
    - ii. Independent Tailings Review Board<sup>9</sup> review
    - iii. Annual observation approach review
2. **Performance:** Review TSF performance by reference to TSF Operations, Maintenance and Surveillance (OMS) Manual and Adaptive Management Plan documents including:
  - a. observational approach philosophy
  - b. Critical Operating Parameters (COPs) for dam safety management, such as overtopping risks
  - c. Quarterly Monitoring Reports with respect to:
    - i. seepage and the overarching objective of protecting the health of McArthur River from mine related impacts
    - ii. embankment stability
  - d. audits of the TSF consistent with LOM Plan
  - e. annual Environmental Mining Report<sup>10</sup>
3. **Rehabilitation:** Review of TSF LOM Plan, Unplanned Closure Plan, Planned Closure Plan and Adaptive Management Plan documents with respect to:
  - a. Unplanned Closure:

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<sup>7</sup> [ANCOLD Guidelines on tailings dams 2012](#)

<sup>8</sup> Condition 48 of Authorisation 0059

<sup>9</sup> Condition 50 of Authorisation 0059

<sup>10</sup> Submitted in accordance with Section 37(3) of the MMA



- i. appropriate management of tailings to achieve the overarching objective of protecting the health of McArthur River from mine related impacts
  - ii. any site-specific trials required to address knowledge gaps
  - iii. demonstration that the structure is safe, stable and non-polluting
  - iv. adequacy of maintenance and monitoring
- b. Planned Closure:
- i. Confirmation, as appropriate, that hydraulic mining, re-processing and disposal of the tailings in the pit lake and submersion within the anoxic zone will achieve the environmental objective
  - ii. any site-specific trials required to address knowledge gaps
  - iii. ability to meet closure objectives in the context of the current status of the mining project.