MATAKANUI GOLD LIMITED

Tailings Management Plan

22 June 2026

Revision History

Review and Approval

FUNCTION	POSITION /Company	NAME	SIGNATURE	DATE
Prepared by	Engineering Geology	A. Hope		
Reviewed by	Environmental Manager	C. Low		24/07/2025
Approved by	Environmental Manager	C. Low		2
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1		Draft	Updated with input from expert conferencing
2	22/06/2026		

1. INTRODUCTION

1.1. Purpose and Objectives

The purpose of the Bendigo-Ophir Gold Project (BOGP) Tailings Management Plan (TMP) is to establish a comprehensive framework for the responsible planning, design, construction, operation, and closure of the Shepherds Tailings Storage Facility (Shepherds TSF) required by the project. Its overarching objective is to ensure the protection of people, the environment, and the integrity of the Shepherds TSF.

This plan is a *living document* that evolves over the life of the TSF, and reflects the changing nature of risk, design assumptions, and operational knowledge.

1.1. Scope of Tailings Management Plan

This TMP applies to all phases of the Shepherds TSF lifecycle including design, construction, operation, closure, and post-closure. This revision of the TMP sets out the management requirements established at the resource consent stage.

1.2. Description of Facilities

The BOGP site is located approximately 20 km northeast of Cromwell. The Rise and Shine and Come in Time gold deposits are located within a ridge between Shepherds Creek to the northeast and Rise and Shine Creek to the southwest. The Srex gold deposit is located on the southern slopes of Rise and Shine Valley. Watercourses in both valleys flow from a divide in the southeast to outlets in the northwest. The general location of the proposed site is shown in Figure 1.

The BOGP involves mining the identified gold deposits at Rise and Shine ("RAS"), Come in Time ("CIT"), Srex ("SRX") and Srex East ("SRE"). Both open pit and underground mining methods will be utilised within the project site to access the gold deposits. Infrastructure to support the project will be constructed in the lower Shepherds Creek Valley. The proposed site layout is shown in Figure 2.

Matakanui Gold Limited (MGL) is the owner of the proposed BOGP which includes a single TSF referred to as Shepherds TSF. Shepherds TSF is to be formed using an embankment dam within the Shepherds Creek valley. The layout of the Shepherds TSF is shown in Figures 3 and 4.

The impoundment will be created between the embankment and the valley head to the west. Shepherds TSF will be constructed primarily from the overburden material that is

excavated as part of the process of obtaining ore from the RAS-Pit. The proposed crest height for the embankment is 690m RL, forming a 108m high embankment above the existing ground at the downstream toe (582m RL).

The 690m RL crest height provides a total impoundment storage volume of approximately 21,500,000m3. Allowance will be made to safely manage surface water from extreme storm events on top of the tailings. The volume available for tailings storage is estimated at approximately 18,00,000m3.

2. REGULATORY CONTEXT AND ALIGNMENT WITH INDUSTRY GUIDELINES

2.1. Applicable Legislation and Regulations

The Shepherds TSF will be formed by a dam and will present a risk to people and the environment downstream of the dam. To manage risk, Shepherds TSFs shall be designed, constructed, operated, maintained, monitored, and reviewed to meet the requirements of the Resource Management Act 1991(Ref. 1), Building Act 2004(Ref. 2), and the Building (Dam Safety) Regulations 2022(Ref. 3) and amendments (2023, 2024) (Ref. 4, 5).

All necessary resource consents for the Shepherds TSF will be applied for under the Fast-track Approvals Act 2024 (Ref. 6).

2.2. Compliance with Resource Consent Conditions

The Consent Holder shall ensure compliance with resource consent conditions including approved management plans.

2.3. Building Consent Requirements

Building consent is required by the Building Act 2004 (Ref. 2) for TSFs meeting the definition of a Large Dam (Ref. 7).

A Large Dam is defined as a dam that has a height of 4 or more metres and holds a volume of 20 000 or more cubic metres of water or other fluid. The height of a dam is the vertical distance from the crest of the dam to the lowest elevation at the outside limit of the dam. The volume of water held is the volume from the lowest elevation of the outside limit of the dam to the crest of the dam (Ref. 7).

The Shepherds TSF will meet the definition of a Large Dam and will require a Building Consent.

2.4. Alignment with Industry Standards and Guidelines

The Shepherds TSF shall be designed, constructed, operated, maintained, monitored, and reviewed in general accordance with the latest version of the New Zealand Dam Safety Guidelines (Ref. 7), unless otherwise defined in this management plan.

The Global Industry Standard on Tailings Management (GISTM) sets a global benchmark for achieving social, environmental and technical outcomes for tailings management. Underpinned by an integrated approach, the GISTM aims to enhance the safety of tailings storage facilities (TSFs) and prevent catastrophic failure of TSFs. MGL intends to generally align the management of Shepherds TSF with the principles set out in GISTM.

3. ROLES AND RESPONSIBILITIES

The responsibility for TSFs lies with the Owner and Consent Holder.

Key roles and responsibilities that are required for the management of Shepherds TSF are summarized in Table 1.

Table 1: Key roles and responsibilities for the management of TSF

Role	Responsibilities
General Manager/Accountable Executive	A senior-level executive (otherwise known as the Accountable Executive) within the owning or operating organisation who holds ultimate accountability for the safety of the TSF. **Key Responsibilities:** • Establishing a clear governance structure and effective oversight. • Accountable for the safety of the tailings facility and for environmental and social performance. • Approval of the adopted design criteria and measures to reduce the risk of failure of existing facilities to be as low as reasonably practicable. • Accountable for tailings management training, emergency preparedness and response. • Providing necessary resources (personnel, funding, infrastructure, training) for safe TSF operation and management. • Establish a process and accountable for addressing on recommendations from independent reviews, internal risk assessments or other concerns. • Ensuring transparent communication with stakeholders, including reporting to the board and external parties regarding TSF risks and performance. • Selection of the Responsible Tailings Facility Engineer (RTFE) and the Engineer of Record (EoR). • Appointment of the Senior Independent Technical Reviewer.

Role	Responsibilities
Responsible Tailings Facility Engineer (RTFE)	The RTFE is directly responsible for day-to-day operational management of the TSF. **Key Responsibilities:** • Ensuring TSF operations comply with the design intent, safety criteria, and operational procedures. • Liaison with the EOR and internal teams such as operations, technical services and environmental management teams, and who has regular communication with the Accountable Executive. • The RTFE must be familiar with the Design Basis Report, the Design Report, Construction Documents, the Construction, and performance of the TSF. • Managing and responding promptly to identified deficiencies and operational issues. • Escalating risks or non-conformances to the Engineer of Record (EoR) and senior management
Environmental Manager	**Key Responsibilities:** • Obtaining resource consents • Compliance with resource consent conditions • Environmental monitoring • Environmental reporting

Role	Responsibilities
Technical Services Manager	**Key Responsibilities:** • TSF Management Plan updates • TSF Management Plan compliance • Register and location plan of all dams forming TSFs onsite. • Compliance with the Building Act 2004 • Obtaining building consents (as required) • Compliance with building consent conditions • Design and documentation • Construction monitoring • Construction completion documentation and certification (as required) • Dam commissioning documentation (as required) • Operation, maintenance, and surveillance documentation • Emergency planning and documentation • Routine dam surveillance • Intermediate Dam Safety Reviews (IDSR) • Comprehensive Dam Safety Reviews (CDSR) • Compliance with the Building (Dam Safety) Regulations 2022

Role	Responsibilities
Engineer of Record (EoR)	An individual engineer (or engineering firm) who maintains ongoing responsibility for the technical integrity of the TSF throughout its lifecycle. **Key Responsibilities:** • Professional engineering services, responsible for dam design construction, commissioning, operation, maintenance, surveillance, emergency planning, and IDSRs. • Reviewing and approving all critical changes to design, operations, and monitoring protocols. • Responsible for the Design Basis report. • Responsible for providing regular technical inspections (IDSRs) and reports on TSF performance. • Responsible for construction and performance reviews. • Responsible for the deviance Accountability Report. • Alongside the RTFE/Technical Services Manager, responsible for the Construction Records Report. • Support the RTFE/Technical Services Manager on the OMS Manual. • Advising the RTFE, Technical Services Manager and Accountable Executive on technical risks, design intent adherence, and necessary corrective actions. • Producer Statement (PS1) Design required for Large Dams defined by the Building Act 2004 • Producer Statement (PS4) Construction Review required for Large Dams defined by the Building Act 2004
Recognised Engineer (PIC)	• Review and Certification of Potential Impact Classification (PIC) under the Building (Dam Safety) Regulations 2022 for all classifiable dams.

Role	Responsibilities
Recognised Engineer (DSAP)	• Review and Certification of Dam Safety Assurance Programme (DSAP) under the Building (Dam Safety) Regulations 2022 for all classifiable Medium and High PIC dams. • Review of compliance with the DSAP annually and issue of Annual Dam Compliance Certificate where compliant for all classifiable Medium and High PIC dams.
Peer Reviewer Design Chartered Professional Engineer (CPEng)	• Producer Statement (PS2) Design Review for Medium or High PIC dams. • This role may be undertaken by the Senior Independent Technical Reviewer.
Independent Reviewer - Dam Safety	Comprehensive Dam Safety Reviews for Medium and High PIC dams.

Role	Responsibilities
Senior Independent Technical Reviewer	An external expert independent of the design and operation team, responsible for providing unbiased, expert review and oversight. **Key Responsibilities:** • Conducting independent review of TSF designs, construction, risk assessments, governance systems and other risk management manners, operations, and closure plans that can affect the tailings facility, ensuring that the required expertise and skill sets are involved. • Review of the adopted external loading design criteria and measures to reduce the risk of failure of existing facilities to as low as reasonably practicable. • Review of the alternatives analysis, design, construction, risk assessments, governance systems and other risk management matters that can affect a tailings facility. • Review of the design basis report. • Determine the frequency of Dam Safety Review, in line with the relevant New Zealand Dam Safety requirements. • Assessing compliance with industry best practices, and regulatory requirements. • Identifying deficiencies or risks that might not be apparent to the operating team. • Providing clear, actionable recommendations for improvement. • Reporting directly to the Accountable Executive to ensure impartiality and independence.

Role	Responsibilities
Independent Peer Review Panel	• The purpose of the Peer Review Panel (PRP) is to review performance monitoring results (environmental) and check compliance with consent conditions and provide recommendations on measures that can be taken to achieve the ultimate closure outcomes. • There will be an annual meeting with the PRP, ORC and MGL after the provision of annual reports, • The Peer Review Pannel will report to ORC.
Contractor or Constructor	An entity that is responsible for the construction of the TSF **Key Responsibilities:** • Experience in dam construction • Construction as per the design • Producer Statement (PS3) Construction for Large Dams defined by the Building Act 2004
Building Consent Authority for Dams (Environment Canterbury)	• Issue of building consents for dams at the BOGP • Issue of code compliance certificates
Regional Authority (Otago Regional Authority)	• Acceptance of PIC Certification for classifiable dams • Acceptance of DSAP for Medium and High PIC dams • Acceptance of Annual Dam Compliance Certificate for Medium and High PIC dams

4. DESIGN MANAGEMENT

4.1. Design Philosophy and Objectives

The Shepherds TSF will be formed by a zoned downstream construction embankment to 690m RL. The proposed embankment layout is shown in Figure 03 and 04.

The conceptual design of the facility shall be recorded in the Design Basis Report and Detailed Design Report.

4.1. Tailings Storage Development Strategy

The Shepherds TSF will provide the required tailings storage for the BOGP. The storage at 690m RL is approximately 21,500,000 m3. Of this volume approximately 18,00,000 m3 will be available for tailings storage, with the rest required for freeboard and storage of supernatant water and extreme rainfall.

The initial (starter) embankment with a crest of 643m RL is located over the upstream half of the main embankment footprint and provides the initial tailings storage capacity for the facility. It will be constructed using a combination of loess, colluvium, and weathered schist from local borrow pits within the impoundment and from mine waste rock obtained from RAS pit. The final embankment will be constructed predominantly from mine waste rock obtained from RAS pit.

The detailed raise sequence above the starter embankment will be developed during the Detailed Design and Operational phases of the project. This management plan will be updated to capture detailed development strategy where required.

4.1. Potential Impact Classification (PIC)

Dams forming TSFs (greater than 4 m height and 20,000 m^3) meeting the definition of a classifiable dam are required to comply with the Building (Dam Safety) Regulations 2022 (Ref. 3).

The height of a dam is the vertical distance from the crest of the dam to the lowest elevation at the outside limit of the dam (Ref. 2). The volume of water held is the volume from the lowest elevation of the outside limit of the dam to the crest of the dam.

Compliance with the Building (Dam Safety) Regulations 2022 (Ref. 3) is the responsibility of the dam owner MGL.

The Shepherds TSF is a classifiable dam and has been assessed as a High PIC dam.

Classifiable Dams require a Dam Classification Certificate to be submitted to the Regional Authority within 3 months after the dam is commissioned.

A Recognised Engineer (PIC) is required to certify the PIC.

MGL must review the Shepherds TSF PIC within 5 years after the Regional Authority approves the classification or if building work on the dam requires a building consent or could result in a change to the PIC.

4.1. Design Standards and Criteria

The Shepherds TSF Design shall include a design basis report, design report, construction drawings, and specifications developed in general accordance with the New Zealand Dam Safety Guidelines (Ref. 7) unless otherwise defined in this management plan.

4.2. Tailings Properties and Deposition Strategy

The tailings will be pumped from the Process Plant using high density polyethylene pipes and discharged sub-aerially from the embankment. The main tailings pipeline will be laid along the embankment with multiple spigots discharging on the upstream side of the embankment. Tailings discharge via the spigots will be regulated to maintain the required beach profile and to keep the ponding water in the required location for the return pump.

Towards the end of the life of the TSF, discharge at the south-east end of the facility will be required to achieve the required profile of the tailings for closure.

Tailings properties shall be investigated and established as part of the development of the detailed design and as an ongoing activity during the operation of the facility where required to appropriately manage risk.

4.3. Tailings Discharge System

The tailings discharge system shall be designed and maintained to safely and efficiently convey tailings from the process plant to the TSF. This system shall:

- Be designed to accommodate the full range of expected slurry densities and flow rates
- Include appropriate flow control structures and distribution headers to manage the deposition strategy (e.g., spigotting or central discharge)
- Be constructed using durable, corrosionand abrasion-resistant materials

- Provide operational flexibility to adjust deposition points to optimise beach development and water management.

The tailings discharge system is to be developed as part of the detailed design of the facility and tailings deposition plan.

4.4. Water Balance Model

A comprehensive and up-to-date water balance model shall be maintained for the TSF throughout its operational life. The water balance shall be reviewed and updated regularly, considering the following inputs and outputs:

Inputs:

- Direct rainfall onto the TSF and catchment areas
- Tailings slurry water content
- Surface runoff from upstream catchment areas
- Groundwater inflows.

Outputs:

- Evaporation losses
- Seepage from the TSF
- Water reclaimed for reuse or discharge

The water balance model must incorporate local climatic data, historical weather patterns, and predicted climate scenarios. Regular updates must account for observed site-specific conditions and operational changes. The model shall be used to inform operational decisions, ensuring adequate freeboard, spillway capacity, and effective management of ponded water.

The water balance shall be reviewed annually or following significant changes in operation or climatic conditions. Findings and updates shall be documented and communicated to relevant stakeholders and regulators.

4.5. Water Reclaim System

A water reclaim system shall be designed and installed to return water from the supernatant pond decant structure back to the process plant or water treatment plant. This system will:

- Include a floating structure located within the TSF pond
- Be designed to operate across a range of pond levels and seasonal water balance scenarios
- Be monitored for flow rate and quality and regularly maintained to prevent siltation or mechanical failure.

The TSF shall incorporate operational and emergency overflow systems to protect the structural integrity of the embankments and minimise environmental impacts. These systems shall:

- Include a defined emergency spillway or controlled overflow structure

The operation, maintenance, and inspection of the water reclaim system and emergency spillway location shall form part of the TSF's Operation, Maintenance, and Surveillance (OMS) Manual.

4.6. Independent Peer Review and Design Verification

The design of Shepherds TSF will require a Producer Statement 1 for Design (PS1) provided by a Chartered Professional Engineer experienced in dam design and construction.

An independent peer review will be required to be completed and a Producer Statement 2 Design Review (PS2) provided by a Chartered Professional Engineer experienced in dam design and construction. An international reviewer acceptable to the BCA may provide a letter in favour of the design in lieu of the ability to provide PS2 as a Chartered Professional Engineer.

The design documentation for building consent shall define the level of construction monitoring and inspections required and any hold points.

5. CONSTRUCTION MANAGEMENT

TSFs shall be constructed to the design report, drawings and specification and in general accordance with the New Zealand Dam Safety Guidelines (Ref. 7).

5.1. Construction Methodology, Staging, and Sequencing

A construction plan shall be developed for each stage of the development of the TSF. This plan will:

- Outline the construction method (e.g., downstream, centreline, upstream)
- Define staging aligned with the tailings production schedule
- Detail the sequencing of embankment raises and related infrastructure.

The construction plan shall be consistent with the approved design.

5.2. Construct Dams using an Experienced Contractor or Staff

The TSFs shall be constructed by a Contractor or MGL staff experienced in the construction of similar facilities.

5.3. Instrumentation Installation

All geotechnical and hydrogeological instrumentation shall be installed in accordance with the Design Drawings and Commissioning Plan. This may include:

- Piezometers, inclinometers, vibrating wire piezometers, survey monuments, and flow meters
- Installation logs and baseline data collection upon installation
- Verification of instrument calibration and integrity.

5.4. Quality Assurance and Quality Control (QA/QC)

A QA/QC programme will be implemented that includes:

- Independent testing regimes for construction materials (e.g., fill compaction, filter gradation)
- Verification procedures for each construction activity
- Daily and milestone quality records maintained on site and submitted as part of construction documentation.

5.5. Supervision and Inspections

Large Dams require building consent and will require construction monitoring by the Technical Services Manager and construction review by the Chartered Professional Engineer (CPEng) and associated Dam Design Firm.

Construction of the TSF shall be monitored and documented by the Technical Services Manager. They will be responsible for:

- Overseeing day-to-day construction activities
- Conducting inspections at hold points defined in the Design
- Confirming compliance with the Design and regulatory requirements
- Documenting any deviations from approved plans

The Designer will complete inspections and hold points defined in the design to meet the construction supervision requirements defined in the Design.

5.6. Commissioning of TSF

A commissioning plan shall be defined by the dam designer. The commissioning plan shall be in general accordance New Zealand Dam Safety Guidelines (Ref. 7) and be appropriate for the PIC of the dam.

5.7. Change Management During Construction

Changes to the design or execution of works during construction will follow a formal change control process. This will include:

- Review and sign-off by the EoR
- Documentation of design variations and rationale
- Notification to the Building Consent Authority and Regional Authority where required.

5.8. Documentation, Certification, and As-Builts

Comprehensive records of construction shall be maintained, including:

- Daily logs and photographic records
- Test certificates and material conformance reports
- As-built drawings verified by the design engineer
- Certification from the Constructor (PS3), and construction reviewer (PS4) as required under the Building Act 2004

These records will form part of the Construction Completion Report to be submitted to the BCA for code of compliance certification. It is intended that this certification will be undertaken on a progressive basis.

Construction monitoring records and as-built records shall be maintained and kept on record.

Large Dams with building consent will require a construction completion report and application for code compliance certificate. The application for a code compliance certificate will need to be supported by a Producer Statement (PS3) Construction from the Constructor and Producer Statement (PS4) Construction Review from the engineering firm reviewing the construction monitoring.

6. OPERATIONAL MANAGEMENT

This section sets out the operational requirements for the safe, effective, and compliant operation of the TSF throughout its active service life. Operational activities must preserve structural integrity, manage environmental impacts, and support long-term closure objectives.

6.1. Tailings Deposition Planning

Tailings production and deposition shall be planned and regularly reviewed as the life of mine changes. The tailings delivery system shall be designed to achieve the tailings deposition strategy and TSF operational objectives.

6.2. Pond and Water Management

The operational water will be managed in accordance with a site-specific water balance and associated infrastructure layout. Water management activities will include:

- Monitoring and always maintaining minimum freeboard based on design flood criteria
- Control decant pumps
- Be supported by routine monitoring of pond volumes, rainfall, and runoff.

Operational freeboard and emergency spillway controls are to be monitored and maintained. This includes:

- Implementing contingency plans for high rainfall events to manage excess water and ensure system integrity
- Maintaining emergency spillway locations clear of obstructions
- Ensuring plant is available to construct emergency spillways should they be required.

6.3. TSF access and trafficability

Safe and reliable access for inspections, maintenance, and control of tailings deposition and water management systems shall be maintained. This will include:

- Establishing and maintaining perimeter access tracks around the TSF
- Ensuring vehicle access for emergency response and monitoring
- Prohibit heavy vehicle loading on embankment crests unless specifically designed for.

6.4. Maintenance

A planned maintenance programme shall be implemented to ensure the ongoing integrity and reliability of the TSF and its associated infrastructure. Maintenance activities shall be scheduled in accordance with the OMS Manual and documented in a site maintenance log.

6.5. Monitoring and Surveillance

All operational activities shall be supported by a monitoring and surveillance programme described in the OMS Manual. This includes:

- Instrumentation (e.g., piezometers, deformation markers, drain flow gauges, etc.)
- Visual inspections
- Photographic and survey records
- Key performance indicators (alert and alarm levels).

Daily and weekly visual inspections will be conducted by trained operational personnel. These will include:

- Embankment crests and slopes
- Impoundment slopes
- Uphill clean water diversion channels
- Tailings delivery system and discharge locations
- Pond location and water management systems (decant, pumps, and water return lines)
- Access and security.

6.5.1. Tailings Samples

Weekly samples of the tailings solid fraction are collected and tested by traditional acid-base accounting (ABA) techniques to validate the geochemistry assumptions and predictions, as being non-acid forming, once operations commence.

- ABA testing should include total S, ANC (acid neutralisation capacity), NAG (net acid generation), pH
- The frequency of sampling:
    - Weekly for the first three months
    - Decreasing to monthly thereafter to reflect confidence in the data set as it evolves
- The sample should also be tested for total arsenic to quantify the source hazard for this contaminant.

- Frequency of this monitoring could also decrease with the increased knowledge and confidence in the material properties.
- Data will be maintained in an appropriate database and will be used to classify samples regarding their acid generation potential. Data will be provided within annual reports to the ORC.
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6.6. Dam Register

The Shepherds TSFs shall be identified and recorded on a register and location plan showing all Dams on the site. The register shall include a unique identification, coordinates, normal operating volume, stored volume, dam height, spillway design criteria, large dam status, classifiable dam status, and PIC. The register and location plan shall be kept on file and be provided to the Regional Authority annually as a record of compliance with this management plan.

6.7. Operations, Maintenance and Surveillance Manual (OMS)

The Shepherds TSF shall have an OMSManual in general accordance with New Zealand Dam Safety Guidelines (Ref. 7).

7. CLOSURE AND POST-CLOSURE MANAGEMENT

7.1. Closure Objectives and Philosophy

The objectives of the rehabilitation and closure of the tailings impoundment are:

- Developing an acceptable and functional landform which integrates within the landscape
- Providing acceptable, stable, post-closure landforms
- Ensuring the secure storage of the tailings in a manner which minimises the risk of release of potential contaminants into the environment in the longer term
- Allow the eventual termination of all monitoring and maintenance procedures when environmental risks are assessed to be negligible.

7.2. Integration with Mine Closure Plan

Closure of the TSF shall be integrated into the overall mine closure plan to ensure alignment of environmental, social, and land use outcomes. This integration shall:

- Reflect the sequencing and dependencies between tailings and broader site rehabilitation
- Ensure consistency of closure assumptions, design criteria, and post-closure objectives
- Support the development of a single, cohesive post-mining landform
- Facilitate efficient use of monitoring, maintenance, and stakeholder engagement resources.

A cross-disciplinary closure planning team shall coordinate TSF and mine-wide closure design, budgeting, stakeholder consultation, and regulatory engagement.

7.3. Final Landform Design and Cover System

The rehabilitation strategy shall include:

- Regrading and contouring of the TSF surface
- Installation of a stable cover
- Revegetation with appropriate species for erosion control
- Integration with surrounding topography and land use plans
- Management of legacy seepage pathways or infrastructure remnants.

Progressive rehabilitation shall be undertaken where feasible to reduce long-term closure liabilities and environmental exposure.

7.4. Long-Term Water Management

The surface of the Shepherds TSF will be shaped as necessary to avoid ponding of surface water and to slope down to the north-west where the closure wetland, outlet, and auxiliary spillway will be located. The outlet channel off the surface will drain along the edge of the Shepherds Creek ELF and discharge into the Shepherds Creek.

The diversion channels will be decommissioned, and runoff will be allowed to flow into the impoundment. Surface drains will be constructed on the outside shoulder of the Shepherds TSF embankment depending on the final profile. The outlet off the TSF will be designed to throttle back flood flows to pass the final close perimeter channel. Flows less than 1 in 1000 years will be retained on the TSF below the level of the auxiliary spillway.

7.5. Post-Closure Monitoring and Maintenance

Post-closure activities will include ongoing monitoring of:

- Pore water pressures and seepage flows
- Surface erosion and vegetation establishment
- Water quality in surrounding receptors
- Structural integrity of the TSF and associated infrastructure.

Monitoring will be performed on a schedule agreed with regulators, and data will inform the need for any adaptive management. A maintenance plan will be developed to address:

- Access maintenance
- Drainage system performance
- Vegetation management
- Repair of erosion, slumping, or other instability indicators.

7.6. Closure Manual

Following the granting of resource consents under the Fast-track Approvals Act 2024 for the construction and operation of the Shepherds TSF, a Closure Manual will be prepared by MGL. The objective of the Closure Manual will be to set out practical measures which will allow the facility to be maintained in accordance with the conditions of the consents and the rehabilitation and closure principles outlined in this section.

8. EMERGENCY PREPAREDNESS AND RESPONSE

8.1. Emergency Action Plan (EAP)

An Emergency Action Plan (EAP) shall be prepared for the Shepherds TSF. The EAP shall be in general accordance New Zealand Dam Safety Guidelines (Ref. 7):

8.2. Trigger Action Response Plans (TARPs)

Trigger Action Response Plans ("TARPs") shall be developed and implemented to provide early warnings and define pre-planned actions when monitoring data or visual inspections indicate abnormal conditions. TARPs shall:

- Include defined triggers based on instrument readings, water levels, deformation, or other key indicators
- Outline escalation steps for operational and emergency response levels
- Be cross-referenced with routine monitoring protocols and the EAP.

8.3. Emergency Response Training and Drills

Training and emergency simulation exercises shall be completed for all personnel with TSF responsibilities on an annual basis. These drills shall:

- Test the effectiveness and clarity of the EAP
- Periodically include coordination with external emergency responders (e.g., fire service, civil defence)
- Be reviewed and updated based on lessons learned from each exercise.

8.4. Communications and Notifications Protocols

The owner shall ensure that timely and accurate communication protocols are in place during emergencies. These shall:

- Be defined within the EAP
- Include contact lists for internal and external stakeholders (e.g., downstream landowners, iwi, emergency services, regional authorities)
- Ensure that communication tools are functional and tested regularly.

8.5. Interface with civil defence and downstream stakeholders

The EAP and broader emergency preparedness system shall align with New Zealand's Civil Defence and Emergency Management (CDEM) framework. The owner shall:

- Engage proactively with the Otago Regional Council and local CDEM groups
- Integrate TSF emergency planning into site-wide and district-level emergency response systems.

9. RISK MANAGEMENT

9.1. Purpose

The purpose of the risk management framework is to identify, assess, manage, and monitor risks associated with the design, construction, operation, and closure of the TSF.

9.2. Risk Management Requirements

The owner shall establish a TSF risk management process that includes:

- Identification of potential failure modes
- Assessment of likelihood and consequence
- Risk classification (e.g., High, Medium, Low)
- Documentation of existing controls and mitigation strategies
- Implementation of additional controls where risk levels are deemed unacceptable.

9.3. Failure Modes and Effects Analysis (FMEA)

An FMEA shall be carried out during design, reviewed after construction, and updated regularly through operation and closure. The FMEA shall:

- Identify potential failure modes
- Document causes, effects, and consequences
- Support prioritisation of monitoring and control measures.

9.4. Risk Register

The owner shall maintain a live risk register for the TSF. This register shall:

- Be updated at least annually or after significant changes to the TSF or downstream environment
- Include a summary of each risk, associated controls, and residual risk rating
- Be reviewed as part of the annual Dam Safety Review process.

9.5. Critical Controls

Each high-priority risk shall have defined critical controls. The owner shall:

- Establish performance standards and monitoring methods for critical controls
- Implement a verification process to confirm that controls are effective
- Develop TARPs where exceedance of critical control performance triggers specific actions.

9.6. Integration with Site-Wide Risk Systems

The TSF risk management process shall be integrated into the broader site and corporate risk management frameworks. This ensures that:

- TSF risks are visible to senior management and the Board
- Duplication of controls is minimised
- Lessons learned from other facilities are incorporated into local risk management.

10. DAM SAFETY MANAGEMENT SYSTEM

The Dam Safety Management System (DSMS) is a formal, systematic approach that ensures dam owners identify, manage, and mitigate risks throughout the dam's lifecycle. It promotes continuous improvement in dam safety through structured processes, defined responsibilities, and integration with broader organisational management systems.

The NZDSG outlines the objectives of dam safety management and includes:

- A framework for the management of dam safety management activities, decision making, and supporting processes.
- Recommended competencies and training for personnel with responsibilities for dam safety management.
- Recommended practices for the development and implementation of an appropriate DSMS.
- Recommended practices for the ongoing review of a DSMS.

The NZDSG differentiates a DSMS from the minimum requirements of a Dam Safety Assurance Programme (DSAP) defined in the Building (Dam Safety) Regulations (2022).

The Shepherds TSF will require a DSAP to be certified and submitted to the Regional Authority one year after the date on which the Regional Authority approves the PIC.

A Recognised Engineer (DSAP) is required to certify the DSAP.

The DSAP is required to be reviewed within 5 years after the date on which the Regional Authority approves the DSAP.

The DSAP must be kept on the dam or in another building in the region of the Regional Authority or in some other place agreed on by the Owner and Regional Authority and is available for inspection by the Regional Authority or any person or organisation who or that has a right to inspect the dam under the Building Act (2004).

An owner of a dam for which a DSAP has been approved, or is deemed to have been approved, must supply to the regional authority a dam compliance certificate on the annual anniversary of the approval of the DSAP.

The certificate must be signed by the Owner and state that, except for the identified, minor items of non-compliance, all procedures in the DSAP have been fully complied with during the previous 12 months.

It also requires a certificate from a Recognised Engineer (DSAP) confirming that the engineer has reviewed the owner's reports and other documents relating to the procedures in the DSAP that the owner has followed in the previous 12 months, and except for the identified minor items of non-compliance, all procedures in the DSAP have been complied with during the previous 12 months.

11. INDEPENDENT REVIEW AND AUDIT

11.1. Annual Compliance and Dam Safety Reporting

Annual reports documenting compliance with regulations shall be submitted to the Regional Authority.

11.2. Independent Dam Safety Review Requirements

Reviews must be conducted at intervals specified by NZSOLD Dam Safety Guidelines and regulatory requirements.

11.3. Regulatory Audits and Inspection Protocols

Regulatory audits are to be scheduled and executed accordingly.

12. PUBLIC DISCLOSURE

MGL will ensure that information about the tailings facility is publicly disclosed to support public accountability. These will align with the requirements of the GISTM:

- Publish and regularly update information on MGL's commitment to safe tailings facility management, implementation of its tailings governance framework, its organization-wide policies, standards or approaches to the design, construction, monitoring and closure of tailings facilities.
- When the tailings facility is established, as a new facility, MGL will publish and update: a plain language summary of the rationale for the basis of the design and site selection as per the multi-criteria alternatives analysis, impact assessments and mitigation plans and the consequence classification.
- At least on an annual basis MGL shall publish:
    - A description of the tailings facility
    - The consequence classification
    - A summary of risk assessment findings relevant to the tailings facility

  - A summary of impact assessments and of human exposure and vulnerability to tailings facility credible flow failure scenarios.
  - A description of the design for all phases of the tailings facility lifecycle including the current and final height
  - A summary of material findings of annual performance reviews and DSR, including implementation of mitigation measures to reduce risk to as low as reasonably practicable.
  - A summary of material findings of the environmental and social monitoring programme including implementation of mitigation measures
  - A summary version of the tailings facility emergency preparedness and response plan (EPRP) for facilities that have a credible failure mode(s) that could lead to a flow failure event that: (i) is informed by credible flow failure scenarios from the tailings facility breach analysis; (ii) includes emergency response measures that apply to project affected people as identified through the tailings facility breach analysis and involve cooperation with public sector agencies; (iii) excludes details of emergency preparedness measures that apply to MGL's assets or confidential information.
  - Dates of most recent and next independent reviews, and
  - Annual confirmation that MGL has adequate financial capacity (including insurance to the extent commercially reasonable) to cover estimated costs of planned closure, early closure, reclamation and post-closure of the tailings facility and its appurtenant structures.
- Provide local authorities and emergency services with sufficient information derived from the breach analysis to enable effective disaster management planning.
- Respond in a systematic and timely manner to requests from interested and affected stakeholders from additional information material to the public safety and integrity of the tailings facility. When the request for information is denied, provide an explanation to the requesting stakeholder.
- Commit to cooperate in credible global transparency initiatives to create standardized, independent, industry-wide and publicly accessible databases, inventories or other information repositories about the safety and integrity of tailings facilities.

13. CONTINUOUS IMPROVEMENT

Regular review and update of key elements of the dam safety and tailings management systems shall be completed, including:

- The Dam Safety Management System (DSMS)
- Dam Safety Assurance Programme (DSAP)
- The Operation, Maintenance, and Surveillance (OMS) Manual
- Risk registers, FMEAs, and TARPs
- Emergency Action Plans (EAPs)

Each of these documents shall be reviewed following:

- A material change to TSF design, operation, or hazard classification
- Findings from audits or inspections
- Recommendations from the Engineer of Record or independent reviewers

14. CHANGE MANAGEMENT

Review of This Plan will be undertaken by SQEP's that have experience in the assessment and management of tailings and dams. The SQEPs will be part of a Peer Review Panel (PRP) that will be appointed by the Otago Regional Council (ORC). The members of the PRP must be fully independent of the planning, design, and operations of BOGP. Such independence will be confirmed by the ORC.

14.1. Peer Review Panel Purpose

The purpose of the PRP is to:

- Ensure that work is being undertaken in accordance with industry's best practice.
- Provide independent advice to the ORC, as to whether the approved resource consent conditions relating to the design, construction, operation, maintenance, rehabilitation and closure of water quality objectives are being satisfied.
- Identify risks and make recommendations on how those risks will be addressed.
- Provide peer review of key reports prepared for MGL for the ORC.
- Attend an annual meeting at site to discuss progress and understand project developments.

14.2. Review Requirements

This Plan and all associated training materials and deliverables will be reviewed where there has been a defined outcome of an investigation due to an incident or significant non-compliance occurring.

The Plan and associated procedures will be periodically reviewed and revised to reflect updated operational data, modelling predictions, monitoring data, through the PDCA cycle or investigations due to incidents or at the request of a relevant regulatory authority.

The timing of This Plan review and approval will occur within three months of the following:

- The planned date for the internal annual review.
- The submission of an incident report relating to tailings or the TSF where an investigation outcome dictates a change to management practices.
- The submission of an external audit with additional or changed management measures.
- Any direction by a relevant regulatory authority to update This Plan or the Peer Review Panel (PRP).
- A change to either the outputs for the Annual Work Plan or the Annual Monitoring Report that necessitates changes herein or vice versa.
- A change in the following interrelated management plans that may impact on This Plan and vice versa:
  - Erosion and Sediment Control Management Plan (ESCMP)
  - Site Specific Erosion and Sediment Control Plan (SSESCP)
  - Engineer Land Form Management Plan (ELFMP)
  - Soil Management Plan (SMP)
  - Water Management Plan
  - Landscape and Ecological Rehabilitation Plan (LERMP)

14.3. Change Management Process and Approvals

A formal change management process is required to evaluate and document any modifications to the TSF design, operation, or monitoring systems. This ensures that changes do not compromise the integrity and safety of the facility.

Changes shall be assessed against the resource consent granted by the Regional Authority and the approved building consent. Changes may require recertification. If the proposed changes extend beyond the scope of the original resource consent or building consent, amendments to those consents may need to be sought.

Changes within this TMP shall be recorded in Table 2.

Table 2: TMP Change Management Record

Item	Section	Summary of change	Reason for change	Complexity of change	Date
1.				☐ Minor ☐ Moderate ☐ Major	
2.				☐ Minor ☐ Moderate ☐ Major	
3.				☐ Minor ☐ Moderate ☐ Major	
4.				☐ Minor ☐ Moderate ☐ Major	

15. AUDIT AND REVIEW OF THIS DOCUMENT

This document shall be reviewed every year, or upon a major change to the operation such as a new or variation to the design of the facility. The management plan will only be updated and submitted for approval where there is a major change identified in the review.

16. REFERENCES

1 Resource Management Act 1991. (1991). *Public Act 1991 No. 69*. New Zealand Government.

2 Building Act 2004. (2004). *Public Act 2004 No. 72*. New Zealand Government.

3 Building (Dam Safety) Regulations 2022. (2022). *LI 2022/133*. New Zealand Government.

4 Building (Dam Safety) Amendment Regulations 2023. (2023). *LI 2023/60*. New Zealand Government.

5 Building (Dam Safety) Amendment Regulations 2024. (2024). *LI 2024/58*. New Zealand Government.

6 Fast-track Approvals Act 2024. (2024). *Government Bill 31-2*. New Zealand Government.

7 New Zealand Society on Large Dams (NZSOLD). (2024). *New Zealand Dam Safety Guidelines*. Wellington, New Zealand.