

Guidelines for preparing an Environmental Impact Statement for

*2/5 Dam TSF – subaerial
deposition and closure*

MMG Ltd

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ENVIRONMENT PROTECTION AUTHORITY

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Information for the Proponent

Purpose

The *Environmental Management and Pollution Control Act 1994* (the EMPC Act) requires the Board of the Environment Protection Authority (the Board) to provide guidance to the proponent about what should be included in the case for assessment (the Environmental Impact Statement).

The Board will assess environmental aspects of the proposal. The relevant Planning Authority (Council) will assess planning aspects if the *Land Use Planning and Approvals Act 1993* (the LUPA Act) applies. The Board has authorised EPA Tasmania to undertake administrative tasks and establish the information base to inform decision making on its behalf.

These guidelines provide information on preparing an Environmental Impact Statement (EIS) for an activity being assessed by the Board under the EMPC Act. They have been prepared based on the Notice of Intent for the proposed 2/5 Dam Tailings Storage Facility by MMG Ltd dated 28 June 2021.

Information solely for the purpose of assessment under the relevant Planning Scheme should be supplied to the Planning Authority either:

- as required under s54 of the LUPA Act, where the planning application has commenced the environmental assessment process; or
- where it is intended to submit an EIS (draft or final) with the planning application, a combined planning and environmental report can be prepared. However, the information required for the Board's assessment must be distinguished from that supplied for the purposes of LUPA Act.

Risk Based Assessment

The EIS should be prepared using a risk based approach. Not all issues nominated in these guidelines will have the same degree of relevance to all proposed activities. Depending on the nature of the proposed activity and its location, some of the issues may be more relevant than others, and some may not be applicable at all. The level of detail provided on each issue should be appropriate to the level of significance of that environmental issue to the proposal.

As well as the issues identified in the guidelines, other significant matters may emerge during preparation of the EIS from environmental studies, public comments or other sources, which will need to be factored into the EIS. The assessment process may also change the understanding of the level of risk associated with some of the issues. This may in turn change the level of detail needed in the EIS to reflect the level of significance of that environmental issue to the proposal.

After the public consultation phase, additional information may be requested from the proponent in response to public and government agency submissions. This generally takes the form of a supplement to the EIS.

Objectives of the EIS

The EIS should provide:

- Information for individuals and groups to gain an understanding of the proposal, the need for the proposal, the alternatives, the environment that it could affect, the positive and negative environmental impacts that may occur and the measures that will be taken to maximise positive outcomes, and minimise any adverse environmental impacts, including specific management measures.
- A basis for public consultation and informed comment on the proposal.

- A framework against which decision makers, particularly the Board, and sometimes the relevant Planning Authority, can consider the proposal and determine the conditions under which any approval might be given.
- A demonstration that the proposal is consistent with the objectives of the relevant laws and policies, including the Tasmanian Resource Management and Planning System (RMPS) and the Environmental Management and Pollution Control System (EMPCS).

How the Board uses the EIS

The EIS is the basis on which the Board makes its assessment. The Board considers the EIS, as well as other relevant information, against the objectives of the RMPS and EMPCS objectives. These objectives focus on the concept of sustainable development, which requires consideration of the economic and social needs of people now and in the future, while sustaining the environment and avoiding or mitigating adverse effects. The Board will consider the objectives and endeavour to make the decision which best furthers them, when considered together. That decision may be to approve the proposal with conditions, or in some cases, the Board may decide the objectives cannot be upheld and the proposal is rejected.

Structure and Formatting of the EIS

The following points should be considered when writing the EIS:

- The title page should include the proponent's name, the activity name, the proposal address or location, the EIS version number (where relevant) and the month and year of publication.
- The main text of the EIS should be written in a clear and concise style that is easily understood by the general reader.
- Assertions and assumptions should be supported by adequate argument and/or evidence, and evidence relied upon should be referenced.
- Technical terminology should be avoided as far as possible. The detailed technical data and supplementary reports necessary to support the main text should be included in appendices.
- All sources of information should be referenced and the style of referencing should be consistent throughout. An indication should also be given about how current the information is and how its reliability was tested. In particular, the degree of confidence attached to any predictions should be indicated.
- Where necessary, to enhance understanding of the proposal, information should be presented in maps, plans, diagrams and photographs. These must be of high quality and reproducible in monochrome with all text and relevant features clearly visible. Maps and plans should include a north arrow and scale.
- When spatial information (including maps, plans, grid coordinates and heights) are provided or referred to, the coordinate reference system must be specified. It is recommended that the following coordinate reference systems are used:
 - **Horizontal** – Geocentric Datum of Australia 2020, Map Grid of Australia Zone 55 (GDA94 MGA55)
 - **Vertical** – Australian Height Datum (Tasmania) (AHD83)

Information on coordinate reference systems used in Tasmania can be found on the DPIWWE website (<https://dpiwwe.tas.gov.au/land-tasmania/geospatial-infrastructure-surveying/geodetic-survey/coordinate-height-and-tide-datums-tasmania>).

Please note that although the Geocentric Datum of Australia 2020 (GDA2020) is the new official datum for recording the horizontal location of spatial information in Australia, implementation of this new datum in Tasmania is not yet complete and the Geocentric Datum of Australia 1994 (GDA1994) remains in use.

- Any sensitive information should be provided in a separate, confidential appendix. A comment should be made in the EIS that the information has been provided in this way.
- Specific management measures must be clearly identified in the text and included in the summary table referred to in Section 9 of these Guidelines.
- Where appropriate, information provided in other sections should be referenced to minimise duplication.
- The EIS should contain a summary table showing compliance with the guidelines.

Submission of draft and final document

Close consultation with the EPA while preparing the EIS is recommended. It is advisable for the proponent to submit a draft EIS to the EPA for review before it is finalised. Please note that a draft document may be rejected without detailed review if it is incomplete, contains significant formatting or typographical errors, or does not comply with the EIS Guidelines. More than one draft may be necessary before the document is considered suitable for public release.

The EIS is to be submitted in electronic format (such as Microsoft Word), and suitable for publishing on the internet (PDF format). Printed copies may also be required at public consultation stage.

Once the proposal is advertised for public comment, copies of the EIS must be made available to the public on request, in either printed or electronic format. The EIS will also be available on the EPA website.

Commonwealth environmental assessment

In addition to Tasmanian requirements, the Commonwealth Government may also have a role in the environmental assessment and approval of the proposal.

Approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is required for an action which has, will have, or is likely to have, a significant impact on a matter of national environmental significance or on Commonwealth land. The matters of national environmental significance are:

- World Heritage properties;
- National Heritage Places;
- wetlands of international importance (RAMSAR wetlands);
- nationally listed threatened species and communities;
- nationally listed migratory species;
- Commonwealth marine areas;
- nuclear actions; and
- large coal mines with water quality impacts.

Information on the EPBC Act can be obtained from the Commonwealth Department of Environment and Energy's website at www.environment.gov.au/epbc/ or by calling 1800 803 772.

False or misleading statements

Under section 43A of the EMPC Act, the EIS must not include information that is known to be false or misleading; and nothing should be omitted if it is known that without it the EIS would be false or misleading.

Contents of the EIS

Executive Summary

An executive summary of the EIS should be included to provide a clear and concise overview of the proposal, its environmental implications, the approvals process and the function of the EIS in the context of the approvals process.

For larger EISs, it is recommended that the executive summary be written as a stand-alone document, able to be provided on request to interested parties who may not wish to read or acquire the full EIS.

Table of Contents

A table of the contents of the report with reference to the relevant page numbers. It should also contain a list of figures and tables.

List of Abbreviations

A list of the abbreviations, acronyms and, if relevant, a glossary of terms used in the EIS.

Key Issues to be addressed

While the EIS should evaluate all potential effects of the proposal, it should be principally focused on the key issues identified in the table below. The level of detail provided on other issues should be appropriate to the level of significance of that issue for the proposal. Variables or assumptions made in the assessment must be clearly stated and discussed. The extent to which the limitations, if any, of available information may influence the conclusions of the environmental assessment should be discussed.

The key issues identified for this proposal, which should be the focus of the EIS, are:

Key Issues	
1	<i>Dust impacts on nearby residences during operation and on closure.</i>
2	<i>Potential impacts on water quality (surface, seepage and groundwater) arising from changes in operation of the facility and during and after closure.</i>
3	<i>Tailings storage facility closure.</i>

It should be noted that other matters deemed to be significant or matters that emerge as significant from environmental studies, public comments or otherwise during the course of the preparation of the EIS, should not be excluded from consideration.

Information to be provided

1. Introduction

Provide information on the following:

- Title of the proposal.
- Proponent details:
 - Name of proponent (legal entity)
 - Name of proponent (trading name)
 - Registered address of proponent
 - Postal address of proponent
 - ABN number
 - ACN number (where relevant)
- Contact person's details:
 - Name
 - Telephone
 - Email address
- Activity operator details (if the operator will be a different entity to the proponent).
- General background information on the proponent, such as relevant development and operational experience.
- General background information on the proposal, including the current status of the proposal, an overview of the principal components of the proposal, the proposal location, anticipated establishment costs, likely markets for the product, and the possibilities for future expansion.
- An examination of how the proposal relates to any other proposals that have been or are being developed, or that have been approved in the region affected by the proposal.
- Environmental legislation, standards and guidelines that will be applicable (such as policies, regulations and industry codes of practice).
- Other relevant Commonwealth, State and Local Government policies, strategies and management plans with which the proposal would be expected to comply.

2. Proposal Description

General note

Where the proposal is to be subject to a permit application under the LUPA Act, the proposal description and specification of the site must be consistent with the intended or current permit application. Any works or activity that are for the purpose of the proposal (e.g. access works) must be included.

Provide a full description of the proposal, including construction, commissioning, operational and decommissioning phases, as well as any infrastructure and off-site ancillary facilities required for the proposal.

A detailed description should be provided of key physical components of the proposal, including their function, composition, size, capacity, operational life, technical and performance requirements, inter-relationships and method of construction, operation and maintenance.

The information listed below should be provided.

2.1 General

- Describe the existing activity, describe any current approvals or regulatory conditions.
- The major items of equipment (including pollution control equipment) and on-site facilities should be described.
- The process should be described in a step-by-step manner using explanatory diagrams and flow charts, where appropriate, to compliment the text.
- Provide the proposed lifetime of the TFS with a description of all phases include closure.
- Any changes to the existing tailings delivery including discharge to the facility should be described.
- Any proposed changes to the existing seepage collection system or stormwater diversions should be described.
- Details of the location and extraction of any closure materials that form part of the proposal.
- Any raw materials required for the operation or closure of the proposal (including water) should be specified. Quantities and characteristics should be detailed.
- Any energy requirements for the proposal should be outlined and the means of meeting this demand described.
- The hours of operation for the proposal (hours per day and specific days per week) including any seasonal variations.
- The volume, composition, origin, destination and route for vehicle movements likely to be generated during the proposal (including closure).

2.2 Definition of the Land

A definition of the land on which the activity will take place must be provided. The land can be defined by:

- Cadastral boundaries (Title Reference, Property ID)
- Lease boundaries (Mining Lease, Crown Lease, Marine Farming Lease, etc.)
- Topographic features (roads, waterways, etc.)
- Surveyed grid coordinates
- Other boundary types

If the land is defined as the whole of an existing defined boundary, such as a title reference or lease, the definition of the land is simply the title reference or lease name (e.g. Title Reference 136529/1 or Mining Lease 901 IP/M). If not, it may be necessary to define the boundary by reference to specific topographic features and or surveyed grid coordinates. The boundary must be consistent with any intended or current permit application under the LUPA Act.

A plan is required clearly showing the boundary of the land in relation to cadastral boundaries and topographic features. The boundary of the land should also be provided to the Board in a geospatial vector format (shapefile or DXF). If a boundary survey is required to adequately identify the land boundary this may be requested during the assessment process.

2.3 General location map

A general location map (e.g. 1:25,000 scale or better as appropriate) which identifies the following is required:

- The regional location of the site
- Topographical features, aspect and direction of drainage
- Road access to and from the site

- Location of waterways and drains (including ephemeral)
- The distance(s) to any nearby sensitive uses (such as residences)
- Electricity transmission lines
- Boundaries of the property on which the proposal is located
- Surrounding land tenure
- Surrounding land use (identify areas of conservation or recreational significance)
- Surrounding land zoning in the local government planning scheme

2.4 Site plan

A site plan(s) is required which includes existing and proposed conditions and features of the site and surrounding area. Where relevant, this may include:

- Location of the TSF and supporting infrastructure including tailings delivery pipelines, seepage collection and stormwater management systems.
- Elevation contours and levels.
- The positions of topographic features including roads, tracks, waterways and drains.
- The location of raw materials storage areas.
- The locations of temporary and permanent storage areas for fuels, oils, reagents and other hazardous goods or chemicals.
- The locations of stormwater collection systems and details of drainage control measures such as cut-off drains and sediment settling ponds, including location of all discharge points (stormwater or other).
- Details of any screening vegetation or bund walls.
- The location(s) of air, noise, surface and groundwater monitoring sites.

Geospatial data included on the plan(s) should also be provided to the Board in a geospatial vector format (shapefile or DXF).

2.5 Off-site infrastructure

Any new infrastructure or off-site ancillary facilities required to allow the proposal to proceed should be described (for example water supply, electricity supply, roads or other transport infrastructure).

3. Project Alternatives

The rationale for the particular project proposed should be described and clear justification is required.

The assessment must compare alternatives according to clearly defined environmental, social, economic and technical considerations, and provide justification for the preferred project. The effect that any community consultation undertaken had on the selection process should be detailed.

A critique of other available tailings management strategies and the reason for the selection of the preferred strategy, including from an environmental perspective, must be included where relevant. Transparency around alternatives and the criteria on which decisions have been based is encouraged as it can lead to better outcomes.

For any part of the proposal where alternative technologies, materials, design options or management practices with different environmental consequences may exist, the alternatives

should be identified, their environmental performance evaluated and the reason for the proposed choice justified.

Alternatives should have regard to best practice environmental management, including those measures listed under section 4(2) of the EMPC Act.

4. Consultation

Details of the nature and results of public consultation undertaken (if any) by the proponent during project planning and preparation of the EIS, as well as any proposals for further public consultation during and beyond project implementation.

Early community engagement often leads to better outcomes for all and is strongly encouraged. The Board has produced a guide to community engagement which is available on the EPA website at: <http://epa.tas.gov.au/assessment/assessment-process/guidance-documents>

5. The Existing Environment

Describe the proposed site location and provide an overview of the existing environment, which may be affected by construction, and operation of the proposal, including areas associated with any ancillary activities.

Include details of salient features of the existing environment and, where appropriate, include maps, plans, photographs, diagrams or other descriptive detail.

The following details should be included.

5.1 Planning aspects

- If a permit is required for the proposal under the LUPA Act provide:
 - Use Class of the proposed activity under the applicable Planning Scheme.
 - Permissibility of the activity under the applicable Planning Scheme.
- Information on land tenure and property boundaries of the proposed site, with certificate of title details.
- Land zonings for the proposed site and surrounding areas.
- Any rights of way, easements and covenants affecting the site.
- Land use and planning history of the site, including the potential for site contamination¹, present use and any existing buildings and significant structures.
- A description of land use and ownership in the vicinity of the site and those areas which may be affected by the proposal, including:
 - The location and nature of industrial facilities.
 - Any sensitive uses² or residential zones within applicable attenuation distances including the location of individual residences, schools, hospitals, caravan parks and similar sensitive uses, and the location of any tourist or recreation facilities or routes (such as camping areas, picnic areas, walking tracks, historic routes).
 - Any proposed or potentially sensitive uses within this distance of the proposal site, which have been or are likely to be granted approval under the local planning scheme, should also be considered.

¹ Information on potentially contaminating activities and contaminated site assessment can be found online at <http://epa.tas.gov.au/regulation/contaminated-sites>.

² Defined in the State Planning Provisions as 'a residential use or a use involving the presence of people for extended periods except in the course of their employment such as a caravan park, childcare centre, dwelling, hospital or school.'

5.2 Environmental aspects

- A description of the general physical characteristics of the site and surrounding area, including topography, local climate, geology, geomorphology, soils (including erodibility), vegetation, fauna, groundwater and surface drainage (including waterways, lakes and wetlands).
- A description of natural processes of particular importance for the maintenance of the existing environment (e.g. fire, flooding, etc).
- Any existing conservation reserves located on or within 500 metres of the site.
- Any high quality wilderness areas identified in the *Tasmanian Regional Forest Agreement* in the vicinity of the site.
- Information on species, sites or areas of landscape, aesthetic, wilderness, scientific or otherwise special conservation significance which may be affected by the proposal. Relevant information resources include the LIST (www.thelist.tas.gov.au) and the Natural Values Atlas (<https://www.naturalvaluesatlas.tas.gov.au>).
- An assessment of the vulnerability of the site to natural hazards (e.g. flooding, seismic activity, fire, landslips or strong winds).
- Any available ambient monitoring results for the vicinity of the proposed development (in tabular or graphical form). The results may be summarised (e.g. as annual averages) if the summary will provide adequate information.
- If the proposal is associated with an existing activity, information on current regulatory approvals and licences should be provided.

5.3 Socio-economic aspects

Briefly describe the existing social and economic environment that may be affected by the proposal, which may include information on the following:

- A summary of the social or demographic characteristics of the population living in the vicinity of the proposal site, identifying any special characteristics which may make people more sensitive to impacts from the proposal than might otherwise be expected.
- A summary of the characteristics of the local and regional economy.

6. Potential Impacts and their Management

Guide to preparing this section

While some details of the proposal may not be finalised at the time the EIS is submitted, the information in the document should be as up to date as possible. Where information is unavailable or details have not yet been finalised, estimates and the range of alternative options should be provided. However, sufficient technical detail must be provided to enable an appropriate level of assessment. For each potential impact the following should be discussed.

Existing conditions

Outline the existing conditions relevant to the impact. In the case of a proposal which involves expansion or redevelopment of an existing activity, a summary of public complaints received in recent years and a discussion of the operator's response and how this may affect the current proposal.

Performance requirements

Identify the environmental performance requirements to be achieved for each environmental impact and provide evidence to demonstrate that these can be complied with. These may be standards or requirements specified in legislation, codes of practice, state policies, national guidelines or as determined by agreement with the assessing agencies. Industry best practice standards should be referred to where appropriate. **Unsupported assertions that performance requirements will be achieved will not be considered adequate.**

Potential impacts

Outline the potential environmental, social and economic impacts of the proposal (positive and negative) through all stages, including construction, operation and closure, in the absence of special control measures. Any foreseeable variations in impacts during the start-up and operational phases should be identified. Include an analysis of the significance of the relevant impacts.

The level of detail provided on each issue should be appropriate to the level of significance of that environmental issue to the proposal.

The evaluation of potential impacts should identify **plausible worst case consequences**, the vulnerability of the affected environment to the potential impacts, and the reversibility of the impacts. Potential cumulative impacts of this proposal in light of other activities underway or approved also need to be addressed. Interactions between biophysical, socio-economic and cultural impacts should be identified.

Predictions and evaluations of impacts should be based on scientifically supportable data (for existing operations this should include the results of monitoring of current emissions). The methodologies used or relied on should be referenced, together with the relevant research and investigations supporting them. Assumptions, simplifications and scientific judgements should be stated clearly, and the nature and magnitude of uncertainties should be clearly defined. Where relevant, the choice of a particular methodology over alternative methodologies should be explained. Where impacts are not quantifiable, they should be adequately described.

Where positive benefits are claimed it will generally be appropriate to explain what measures are to be taken to ensure that those positive outcomes are realised and sustained.

Avoidance and mitigation measures

Describe the measures proposed to avoid or mitigate potential adverse impacts (having regard to best practice environmental management as defined in EMPCA) in order to achieve the environmental performance requirements (such as through pollution control technology or

management practices). The extent to which they will overcome the anticipated impacts should be specified. Where there are clear, alternative avoidance or mitigation measures for a particular adverse environmental impact, the alternatives should be reviewed and the preferred option justified.

Where pollution control equipment and/or treatment processes are key factors in achieving satisfactory environmental performance, contingencies in the event of breakdown or malfunction of the equipment or processes should be discussed. It should be demonstrated that the maintenance of pollution control equipment can be provided for without causing performance requirements to be exceeded.

Where measures to control environmental impacts are necessary, but will not be undertaken by the proponent, the means by which the proponent will ensure that the necessary measures are implemented should be identified (e.g. lease conditions, trade waste agreement, contractual arrangement or other binding third party commitment). **Mitigation measures over which the proponent has no control will generally not be considered adequate.**

Specific measures can be presented in the form of a management plan, such as an Environmental Management Plan (EMP) that sets out the framework for management, mitigation and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing. The EMP needs to address the project phases (construction, operation, decommission) separately.

Assessment of net impacts

An assessment of the overall impacts of the development on the environment after allowing for the implementation of proposed avoidance and mitigation measures. This should include an evaluation of the significance of impacts, the potential for emissions to cause environmental and health impacts and comparison with current environmental conditions (for existing activities) and with state, national and international regulations and standards. Any net benefits likely to result from the proposal should be identified.

Discuss the impacts of the proposal in terms of the constraints or benefits it may place on the current or future use of land within the proposal site and surrounding area as a result of environmental impacts or emissions, including impacts on other uses, particularly sensitive uses.

Offsetting unavoidable adverse impacts

If adverse residual environmental impacts from the proposal are considered unavoidable despite the adoption of best practice environmental management avoidance and mitigation measures, then proposals to offset such impacts should be detailed. For example, if the loss of conservation values, community assets or amenities is considered unavoidable, measures to compensate for those losses should be proposed in proportion to the loss. Any offset actions proposed must be demonstrated to be 'real' actions. That is, **the offset actions must have a measurable and relevant benefit which would otherwise not have occurred.**

6.1 Key Issue 1: Air Quality

Discuss potential impacts of the proposal on the local and regional air environment, including:

- Discussion of climatology of the region including the seasonal effects on potential dust generation, movement and mitigation.
- Discussion of the potential for dust from subaerial deposition during operation and also from the TSF during and after closure, to impact the surrounding areas including sensitive receptors and the TasWater Stitt River offtake. The impacts from extraction of any borrow materials and closure construction activities must also be included.
- Characterisation of the dust that may be emitted from subaerial deposition of tailings including particle sizing and mineralogical and geochemical composition.
- Full description of dust mitigation management procedures to be used to prevent dust generation and movement off-site.
- A discussion of any contingency measures.
- A discussion about the off-site dust monitoring programs to be employed including instrumentation, location, and parameters to be monitored. The discussion should also address the management measures to be implemented if dust is detected moving off-site.

Legislative and policy requirements

Consideration should be given to the requirements of the Tasmanian *Environment Protection Policy (Air Quality)* (see <http://epa.tas.gov.au/policy-site/Pages/Air-Quality-EPP.aspx>).

6.2 Key Issue 2: Water quality (surface, seepage and groundwater)

This section needs to address the potential impacts of the proposal on water quality including any changes to the quality and quantity of surface water, seepage and groundwater on site as well as any potential changes to the water discharged off site (to other treatment facilities or to the environment).

The following are required:

- A description of the geochemical nature of tailings, including but not limited to ABA measures MPA, ANC, NAPP, NAG, AMD kinetics, identification of potential AMD pollutants of interest (currently and for future expected mining where ore chemistry may change), and description of mineralogy of both acid producing and acid consuming minerals within the tailings³.
- A discussion of the likely changes to oxidation of beached tailings in the facility as a result of changing from subaqueous to subaerial deposition and during closure.
- A discussion of the likely changes to decant water from the facility as a result of subaerial deposition, including whether changes in decant water quality or quantity is likely to impact the regulatory compliance at any other MMG Rosebery discharge locations.
- A discussion of water quality management and mitigation measures for any water discharged to other facilities or to the environment. The objective for minimum pH for both the tailings slurry pumped from the mill to the TSF and decant waters should be discussed.
- Details of the expected change in phreatic conditions within the TSF and any resultant changes to the quantity and quality of seepage water as a result of subaerial deposition and during closure.

³ Definitions should follow those outlined in <http://www.gardguide.com>

- A water balance for the facility (operations, during closure works and post closure) should be described. Details of decant and other methods to manage water levels should be provided (including during large rainfall events and during particularly wet periods).
- An assessment of the potential impact of aqueous emissions upon the receiving environment, including impact following closure. Discussion on surface water impacts must include the Stitt River and Lake Pieman.
- Discuss potential impacts of the proposal on groundwater (quality and quantity), including:
 - A map showing the location of any groundwater bores.
 - A conceptual groundwater model for regional and local aquifer flows including likely flows of groundwater into surface waters.
- Identification of any likely changes to groundwater interactions with the Stitt River as a result of the change in operations.

Legislative and policy requirements

It must be demonstrated that the proposal is consistent with the objectives and requirements of relevant water management policies and legislation including the *Water Management Act 1999*, the *State Policy on Water Quality Management 1997*, and the *Tasmanian State Coastal Policy 1996*.

In particular, it must be demonstrated that the proposal will not prejudice the achievement of any water quality objectives set for water bodies under the *State Policy on Water Quality Management 1997* (see <http://epa.tas.gov.au/policy-site/Pages/Water-Quality-Policy.aspx>). Where water quality objectives have not yet been set, EPA Tasmania should be consulted to identify the baseline water quality data required to enable the water quality objectives to be determined.

6.3 Key Issue 3: Tailings storage facility closure

The EIS must describe an on-going, staged approach to closure of the TSF both during operations and once deposition of tailings to the TSF has ended. The EIS must also address unanticipated early closure.

A conceptual closure plan must be provided. The plan must reference the results of any closure prefeasibility studies and include the following details:

- Identification of objectives and criteria for closure.
- Details of the proposed final closure strategy/ strategies for the TSF, including mechanisms to reduce the long-term potential for AMD formation and emissions, and any ongoing water quality management requirements.
- Outline how the change to subaerial deposition might affect the feasibility of any future potential TSF lifts and final closure options. Closure option constraints need to be discussed.
- An environmental risk analysis comparing the previously proposed 2-5 Dam TFS Stage 2 subaqueous cover and any alternative closure cover system required should subaerial tailings deposition be approved. The risk-based analysis must evaluate the geochemical and geotechnical aspects of closure and include the following:
 - expected pollutants formed within the TSF,
 - the rate and quality of pollutants released from the TSF (surface water, groundwater and seepage) post closure,

- the structural integrity of the TSF,
 - ongoing maintenance requirements post closure; and
 - any other risks identified for TSF closure.
- An independent third-party peer review of the environmental risk analysis is required. The review must be undertaken by a suitably qualified person/s, approved by the Director, EPA.
 - Details of strategies to manage the facility in the event of unanticipated early closure including mechanisms to reduce the long-term potential for AMD formation and emissions, and any ongoing water quality management requirements.
 - Details of the approximate quantities, types and sources of any cover materials required for TSF closure including clays, gravels, rock, organic materials or synthetic low permeability barriers.
 - Outline vegetation types for the post closure landform and how the cover conceptual design(s) encourage the desired vegetation.
 - A preliminary post closure water balance to demonstrate that proposed closure strategies are achievable. A range of climatic scenarios should be considered referencing appropriate data from <https://www.climatechangeinaustralia.gov.au/en/>
 - Details of the proposed final landform to support the post mining land use. Geotechnical stability of the structure in perpetuity must be considered.
 - Details of monitoring and maintenance required to ensure the long-term performance and integrity of the rehabilitated structure.
 - Provision of cost estimates to effectively close the TSF. Both unanticipated and planned closure scenarios must be costed.

6.4 Noise emissions

Discuss impacts of the proposal on ambient (surrounding) noise levels, including:

- Identifying and describing all major sources of noise.
- A map of the location of all major sources of noise.
- Considering the potential for noise emissions (during both the construction and operational phases) to cause nuisance for nearby land users, particularly at noise sensitive premises.⁴
- The potential for noise emissions to affect terrestrial, and freshwater wildlife.

Legislative and policy requirements

Consideration should be given to the requirements of the Tasmanian *Environment Protection Policy (Noise) 2009* (see <https://epa.tas.gov.au/policy/statutory-policies/state-policies-and-environment-protection-policies/environment-protection-policy-%28noise%29-2009>).

6.5 Waste Management

Discuss the impacts of waste generated by the proposal, including:

⁴ 'noise sensitive premise' is defined as: residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and similar land uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.

- Identify the source, nature and quantities of all wastes, (liquid, atmospheric or solid) including general refuse and by-products from the various stages of the process likely to be generated.
- Methods and facilities proposed to collect, store, reuse, treat or dispose of each waste stream should be identified. Maintenance requirements should be included.
- The source, nature, quantity, and method of treatment, storage and disposal for each controlled waste should be described. Note: controlled waste is defined in the EMPC Act and associated regulations. A non-exhaustive listing of categories of controlled waste can be found on the internet at <http://epa.tas.gov.au/regulation/waste-management/controlled-waste>.

Legislative and policy requirements

Waste management measures must be in accordance with the following hierarchy of waste management, arranged in decreasing order of desirability:

- avoidance
- recycling/reclamation
- re-use
- treatment to reduce potentially adverse impacts
- disposal

6.6 Dangerous goods and environmentally hazardous materials

Discuss impacts of the proposal in relation to dangerous goods and environmentally hazardous materials (any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, waste and chemicals), including:

- The nature, quantity and storage location of all environmentally hazardous materials including Dangerous Goods (as defined in the *Australian Code for the Transport of Dangerous Goods by Road and Rail*) that will be used during the construction and operation of the proposal.
- A map showing the location of temporary and permanent storage areas for fuels, oils, and other dangerous goods or chemicals.
- The measures (such as bunded areas or spill trays) to be adopted to prevent or control any accidental releases of dangerous goods and environmentally hazardous materials.
- Contingency plans for when control measures, equipment breakdowns or accidental releases to the environment occur, including proposed emergency and clean-up measures and notification procedures.
- Identify any safety management requirements for the protection of human health and safety affecting the community.

6.7 Biodiversity and Natural Values

Discuss impacts of the proposal on biodiversity and nature conservation values (terrestrial and aquatic) including:

- A map of existing vegetation types and threatened species.
- Areas proposed to be cleared for extraction of closure materials including any access tracks and laydown.
- Impacts on flora, vegetation communities and habitat, with particular reference to rare and threatened species, communities and habitats, including those listed under the relevant Schedules of the Commonwealth EPBC Act and the Tasmanian *Threatened Species Protection Act 1995*.

- Impacts on fauna, including impacts on species, communities and habitats, with particular reference to rare and threatened species, migratory species, communities and habitats, including those listed under the relevant Schedules of the Commonwealth EPBC Act and the Tasmanian *Threatened Species Protection Act 1995*. Assessment of impacts should not be limited to clearing or disturbance and may include noise, lights, vehicle movements etc.
- Identify any freshwater ecosystems of high conservation management priority using the Conservation of Freshwater Ecosystem Values (CFEV) database (accessible on the internet under <https://wrt.tas.gov.au/cfev>). The scope of investigation should encompass the vicinity of the proposed development where there is likelihood of alteration to the existing environment. The specific CFEV information used for EISs should be Conservation Management Priority Potential which is appropriate for development proposals.
- Impacts on other species, sites or areas of special conservation significance, including areas of wilderness, scientific, or geodiversity value.
- Clearing of native vegetation and habitat associated with the construction and maintenance of the proposal and the impact of any clearing on sites, species or ecological communities of special conservation significance, including any impact on the:
 - comprehensive, adequate and representative reserve system identified as part of the Tasmanian RFA;
 - maintenance of forest communities under the [Permanent Native Forest Estate Policy](#);
 - wildlife habitat strips under the *Tasmanian Forest Practices Code 2015* (<http://www.fpa.tas.gov.au>); and
 - non-forest communities.
- The potential for migration and/or introduction of pests, weeds and plant and animal diseases as a result of the proposal.
- Where impacts cannot be avoided, proposed measures to mitigate and/or compensate adverse impacts on biodiversity and nature conservation values should be presented.
- Rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity, including any proposed seed collection and progressive rehabilitation programme.

Requirements for surveys

Flora and fauna surveys must, as a minimum, comply with the requirements of the document [Guidelines for Natural Values Assessments](#) published by the Department of Primary Industries, Parks, Water and Environment (DPIPWE). The methodology for surveys should be developed in consultation with the Department.

It is noted that the site was previously surveyed in 2015. Due to the time elapsed, a re-survey of any proposed disturbance area is required. Although development has occurred since 2015 the potential for impact to the river club sedge (*Schoenoplectus tabernaemontani*) Tasmanian devil (*Sarcophilus harrisii*), Spotted-tailed Quoll (*Dasyurus maculatus subsp. maculatus*) and Azure Kingfisher (*Ceyx azureus subsp. diemenensis*), remain relevant and should be included in the assessment.

6.8 Greenhouse gases and ozone depleting substances

For proposals with the potential for significant release of greenhouse gas emissions or the release of ozone depleting substances, discuss impacts of the proposal in relation to Greenhouse Gases and ozone depleting substances including:

- A description of the direct and indirect effects of the proposal on greenhouse gas production and ozone depleting substances and any greenhouse benefits of the proposal discussed.

- Demonstration that the development will implement cost-effective greenhouse best practice measures to achieve on going minimisation of greenhouse gas emissions.
- Provision of a competent estimate for ‘whole of life’ greenhouse gas emissions for the proposed development. Details should also be provided of proposed measures to minimise emissions and the anticipated effectiveness of these measures. Where less emissions-intensive options are not adopted, justification should be provided and/or mechanisms to offset greenhouse gas emissions identified.

Legislative and policy requirements

Discuss impacts of the proposal in terms of the evolving national response to climate change and greenhouse gas emissions and the targets set in the Climate Change Action Plan 2017 – 2021. Proponents will need to determine whether they are required to report to the Commonwealth under the *National Greenhouse and Energy Reporting Act 2007*.

6.9 Socio-economic issues

Discuss the social and economic impacts of the proposal. Details may include the following:

- An estimate of total capital investment for the proposal and where that capital will be expended (particularly in relation to the source of large capital items of processing equipment).
- Operational expenditures and revenues.
- The impacts on local and State labour markets for both the construction and operational phases of the proposal. The number and nature of direct and indirect jobs arising from the proposal must be detailed. Skills and training opportunities should also be discussed.
- The impacts on upstream/downstream industries, both locally and for the State.
- The extent to which raw materials, equipment, goods and services will be sourced locally.
- A qualitative assessment of impacts on local social amenity and community infrastructure, including recreational, cultural, health and sporting facilities and services. Any proposals to enhance or provide additional community services or facilities should be described.
- Community demographic impacts (changes to cultural background, occupation, incomes).
- Impacts on land values, and demand for land and housing.
- Impacts on the local, regional, state and national economies.
- Any publicly funded subsidies or services to be relied upon for the construction or operation of the proposal.
- Any impacts on Local, State and Federal Government rate, taxation and royalty revenues.

The extent to which socio-economic considerations need to be described depends on the nature and extent of any negative impacts or risks to the environment from the proposal.

Modest proposals with relatively low level and localised environmental impacts or risks may only need details of intended capital expenditure, operational expenditures, revenues and employment (distinguishing between direct and indirect employment) and a qualitative discussion of other socio-economic aspects of particular relevance.

Proposals with higher level or broader scale environmental impacts will need a more comprehensive analysis of economic and social benefits to allow the Board to assess the benefits and adverse impacts of the proposal. This may include an explanation of the methods used to model impacts and describe the manner and results of engagement with the local community to determine their needs and aspirations in relation to the proposal.

6.10 Hazard analysis and risk assessment

If applicable, provide a preliminary analysis (appropriate to the scale of the project) of the potential for a major hazard event (such as an explosion) that may cause impacts to the environment to occur and proposed safeguards to prevent such an occurrence. The preliminary analysis should systematically identify all potential major environmental hazards (internal and external) to people and the environment associated with the construction, operation, maintenance and decommissioning of the proposal.

6.11 Fire risk

Discuss the potential fire risk associated with the proposal, including:

- Consideration of fire within the site, fire escaping from the site and the impact of wildfire originating outside the development and the environmental impacts that could result from such an event.
- The objectives and management principles to be adopted to prevent and respond to potential fire events.
- Where a fire response plan is appropriate, it should be fully integrated with other relevant documents, such as a Tasmania Fire Service Local Area Fire Management Plan, a Forestry Tasmania Fire Management Plan and a Parks and Wildlife Service Fire Action Plan for relevant districts.

6.12 Infrastructure and off-site ancillary facilities

Discuss potential environmental impacts of the proposal on any significant off-site infrastructure or facilities, identify measures to avoid and mitigate any possible adverse impacts and assess the overall impacts following implementation of the proposed avoidance and mitigation measures.

Identify roads and other infrastructure to be used by vehicles for the proposal (during both construction and operation). Potential environmental impacts associated with construction and use of such infrastructure should be assessed.

6.13 Cumulative and interactive impacts

Where relevant, this section should contain an assessment of the potential cumulative impacts of the proposal in the context of existing and approved developments in the region, if such impacts have not been addressed in previous sections.

Other proposals which have been formally proposed, and for which there is sufficient information available to the proponent to allow a meaningful assessment of their impacts, should also be considered in that assessment. Uncertainties about potential impacts in such cases should be identified.

Interactions between biophysical, socio-economic and cultural impacts of the proposal should be discussed.

7. Monitoring and review

This section should provide an outline of any monitoring, review and reporting programmes relating to the proposal. The programme should be designed to meet the following objectives:

- Monitoring of compliance with emission standards and other performance requirements identified in the EIS.
- Assessing the effectiveness of the performance requirements and environmental safeguards in achieving environmental quality objectives.
- Assessing the extent to which the predictions of environmental impacts in the EIS have eventuated.
- Assessing compliance with management measures defined in the EIS.

A map showing the location of all monitoring sites and a table of proposed monitoring including location, parameters and frequency should be included.

8. Management Measures

This section should contain a consolidated management measures table listing all of the management measures made throughout the EIS. Measures must be sequentially numbered, unambiguous statements of intent. For each measure, the table must specify when it is to be implemented and refer to the section of the EIS where the measure is detailed.

9. Conclusion

Describe the proposal and draw together the critical environmental, social and economic impacts of the proposal, both positive and negative; present a balanced overview of the net impacts of the proposal, and the extent to which any adverse impacts can be satisfactorily avoided, mitigated, remediated or compensated and positive impacts promoted and sustained. The conclusion should also describe how the proposal meets and furthers the objectives of relevant Commonwealth and State legislation, policies, plans and strategies. This should be done by itemising the RMPS and EMPCS objectives and providing a commentary about how the proposal addresses each of the objectives.

10. References

This section should provide details of authorities consulted, reference documents etc.

11. Appendices

As a means of improving readability of the EIS document, detailed technical information which supports the EIS should be included in appendices. The salient features of the appendices should be included in the main body of the EIS. Care should be taken to avoid inconsistencies between technical content of Appendices and the EIS itself, unless carefully explained.

12. Glossary

EIS	Environmental Impact Statement
EMPC	<i>Environmental Management and Pollution Control Act 1994</i>
EMPCS	Environmental Management and Pollution Control System objectives to be found in Schedule 1 of EMPCA
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i> JAMBA/CAMBA - Japan-Australia and China-Australia Migratory Bird Agreements

RMPS Resource Management and Planning System of Tasmania objectives to be found in
Schedule I of EMPCA

Tasmanian RFA Tasmanian Regional Forest Agreement

Appendix A: Other issues and agency contacts

In addition to a permit under the LUPA Act and the EMPC Act, there may be other legal requirements to allow your proposal to proceed. These may include other permits, licences or landowner consent. You may also need to contact other Government agencies to obtain information for the purpose of assessment under the LUPA Act or the EMPC Act. The following list identifies some of the key agencies you may need to contact:

Note: your proposal may be referred to other agencies in the process of preparing guidelines. Should assessments or approval outside of the Board's responsibilities be required, the respective agency will engage with you to progress them.

Natural values including flora, fauna, and geoconservation values, or permits to deal with threatened species:

Conservation Assessments, Environment Business Unit

Department of Natural Resources and Environment

Telephone: (03) 6165 4396

Email: conservationassessments@dpipwe.tas.gov.au

Website: www.dpipwe.tas.gov.au

Historic cultural heritage, including State-level site listings, impacts and permits as required under the Historic Cultural Heritage Act 1995:

Heritage Tasmania

Telephone: (03) 6165 3700

Email: enquiries@heritage.tas.gov.au

Website: www.heritage.tas.gov.au

Note: Where works are proposed in or in close proximity to a heritage place entered on the Tasmanian Heritage Register or likely to be of heritage significance to the whole of Tasmania, and a permit is required under the *Land Use Planning and Approvals Act 1993*, the proposal will be referred to Heritage Tasmania by the planning authority. There may also be additional sites listed under local planning schemes, impacts on which are assessed by the relevant planning authority.

Aboriginal heritage, including desktop assessment, artefact survey requirements, permits:

Aboriginal Heritage Tasmania

Department of Premier and Cabinet

Telephone: 1300 487 045

Email: aboriginal@dpac.tas.gov.au

Website: <http://www.aboriginalheritage.tas.gov.au>

Note: your proposal will be referred to Aboriginal Heritage Tasmania (AHT) on submission or referral to the Board. If Aboriginal Heritage matters are identified, AHT will engage directly with the proponent regarding relevant assessments and approvals.

Parks and reserves, including where any proposal may impact on land managed by Parks & Wildlife:

Parks and Wildlife Service

Telephone: 1300 827 727

Website: www.parks.tas.gov.au and www.thelist.tas.gov.au

Crown land, including where any proposal may impact on land owned by the Crown:

Property Services – Parks and Wildlife

Telephone: (03) 6169 9015

Email: PropertyServices@parks.tas.gov.au

Website: www.parks.tas.gov.au

State roads, including where any proposal requires works on or access from a State-managed road asset:

Department of State Growth

Telephone: (03) 6166 3369

Email: permits@stategrowth.tas.gov.au

Website: www.transport.tas.gov.au

Mining leases:

Mineral Resources Tasmania

Telephone: 03 6165 4800

Email: info@mrt.tas.gov.au

Website: www.mrt.tas.gov.au

Works impacting natural waterway flow, e.g. dams or fords:

Agriculture and Water Division

Telephone: (03) 6165 3222

Email: Water.Enquiries@dpipwe.tas.gov.au

Website: www.dpipwe.tas.gov.au/water



ENVIRONMENT PROTECTION AUTHORITY