

Draft Environmental Impact Statement Guidelines

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*Rentails Project, Renison Mine,
Murchison Highway, Renison Bell*

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ENVIRONMENT PROTECTION AUTHORITY

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Glossary and abbreviations

Term	Definition
ABA	Acid Base Accounting
AMD	Acid and Metalliferous Drainage
ANC	Acid Neutralisation Capacity
ASS	Acid Sulfate Soils
Board	Board of the Environment Protection Authority
Case for assessment	Information required for environmental impact assessment, prepared according to the Board's requirements.
Director	Means the Director, Environment Protection Authority holding office under Section 18 of <i>Environmental Management and Pollution Control Act 1994</i> and includes a delegate or person authorised in writing by the Director to exercise a power or function on the Director's behalf.
EIS	Environmental Impact Statement
EMPCA	<i>Environmental Management and Pollution Control Act 1994</i>
EMPCS	Environmental Management and Pollution Control System. Objectives found in Schedule 1 of EMPCA.
Environmentally hazardous material	Means 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 but excludes sewage.
EPA	Environment Protection Authority. Tasmania's independent principal environmental regulator which administers EMPCA and consists of a Board and a Director.
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
JAMBA/CAMBA	Japan-Australia and China-Australia Migratory Bird Agreements
LUPAA	<i>Land Use Planning and Approvals Act 1993</i>
MNES	Matters of National Environmental Significance
MPA	Maximum Potential Acidity
NAF	Non-Acid Forming
NAG	Net Acid Generation
NAPP	Net Acid Production Potential
NCA	<i>Nature Conservation Act 2002</i>

Term	Definition
Noise sensitive premises	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.
NNP	Net Neutralization Potential
NPR	Neutralisation Potential Ratio
PAF	Potentially Acid Forming
PASS	Potential Acid Sulfate Soils
PEVs	Protected Environmental Values
Planning Authority	Council for relevant local government area
RMPS	Resource Management and Planning System, Tasmania. Objectives found in Schedule 1 of EMPCA.
SD	Saline Drainage
Suitably qualified person	Means suitably qualified person in the opinion of the Director
RFA	<i>Tasmanian Regional Forest Agreement</i>
TSF	Tailings Storage Facility
TSPA	<i>Threatened Species Protection Act 1995</i>

Part A. Introduction

These Guidelines provide instructions for proponents on how to prepare an Environmental Impact Statement (EIS) for an activity being assessed in Tasmania by the Board of the Environment Protection Authority (the Board). The Board uses an EIS as a ‘case for assessment’, to assess the environmental impact of an activity, as required under the *Environmental Management and Pollution Control Act 1994* (EMPCA).

The role of the EIS

An EIS is generally required for larger scale developments, classed as requiring 2B or 2C assessments under EMPCA. It is a document that provides information about a proposal, its potential impacts and proposed mitigation measures. As a publicly available document, an EIS should facilitate public consultation and informed comment and should contain sufficient information to establish the conditions of approval by authorities, if approved.

The EIS should demonstrate that the proposal is consistent with the objectives of relevant laws and policies, including the Tasmanian Resource Management and Planning System (RMPS) and the Environmental Management and Pollution Control System (EMPCS). These systems are designed to facilitate sustainable development.

Further information on the EPA Assessment Process is available on the [EPA website](#).¹

Refer also to Appendix A *General principles for assessing environmental impacts*, for further information on EIS principles.

How the Board uses the EIS

The Board uses the EIS to inform decision making as part of the environmental impact assessment process. The EIS must be prepared in accordance with guidance provided by the Board under section 74(4) of EMPCA. The staff of the EPA support the Board during the assessment process.

The EIS will be advertised publicly to allow for public consultation. The proponent may then be required to supply additional information in response to public and government agency submissions. This information is generally supplied in the form of a supplement to the EIS.

The Board considers the EIS as well as other relevant information in the context of the objectives of the RMPS and EMPCS. These objectives aim to sustain the environment and avoid or mitigate adverse effects, while considering the economic and social needs of people now and in the future. The Board will endeavour to make the decision which best furthers the objectives of the RMPS and EMPCS. It may approve the proposal with conditions, or in some cases may decide to reject the proposal if the objectives cannot be upheld.

The Environmental Impact Statement Guidelines are adapted for each specific proposal. In general, more detailed studies and information will be required where issues are considered by the Board to involve a higher level of environmental risk.

Other significant matters may emerge while preparing the EIS, from environmental studies, public comments, or other sources. These must also be considered in the EIS. Information collected or generated during the assessment process may also change the understanding of the level of risk associated with some issues. This must also be reflected in the EIS.

¹ See <https://epa.tas.gov.au/Pages/Assessment-Process.aspx>

Planning information

The relevant Planning Authority (local Council) will assess planning information if the *Land Use Planning and Approvals Act 1993* (LUPAA) applies. Information solely for the purpose of assessment under the relevant Planning Scheme should be supplied to the Planning Authority either:

- as required under section 54 of LUPAA where the planning application has started the environmental assessment process; or
- as a combined planning and environmental report where it is intended to submit an EIS (draft or final) with the planning application. Where this option is selected, the information required for the Board's assessment must be clearly distinguished from that supplied for the purposes of LUPAA.

Australian Government environmental assessment

The Australian Government (Commonwealth) may have a role in the environmental assessment and approval of the proposal in addition to Tasmanian requirements. Approval under the Australian *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 (MNES).

The nine MNES are:

- world heritage properties
- national heritage places
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
- nationally threatened species and ecological communities
- migratory species
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mining)
- a water resource, in relation to coal seam gas development and large coal mining development.

The Australian and Tasmanian Governments have signed a bilateral agreement for environmental impact assessment under section 45 of the EPBC Act, which accredits the Board's assessment process. This allows a proposal that has been determined to be a controlled action under the EPBC Act to be assessed by the Board on behalf of the Australian Government.

If a proposal is to be assessed under the bilateral agreement, the EIS must specifically describe the implications of the proposal for the relevant EPBC Act controlling provisions. It must also contain a summary table showing that it addresses the matters specified in Schedule 4 of the [Commonwealth Environment Protection and Biodiversity Conservation Regulations 2000](#).²

Information on the EPBC Act can be obtained from the [Australian Government, Department of Climate Change, Energy, the Environment and Water \(DCCEEW\) website](#),³ or by calling 1800 803 772. It is the proponent's responsibility to consult DCCEEW to determine whether the EPBC Act and the bilateral agreement apply to the proposal.

² See http://www8.austlii.edu.au/cgi-bin/viewdoc/au/legis/cth/consol_reg/epabcr2000697/sch4.html

³ See <https://www.dcceew.gov.au/environment/epbc>

Part B. Instructions

The EIS must present information in a way that can be easily understood. It should provide summaries in non-technical language to give readers a general understanding of the proposal. It must also provide technical detail to allow analysis and understanding of impacts and mitigation measures by technical specialists, regulatory bodies, and people with an interest in specific matters arising from the proposal.

Section C of these Guidelines sets out the structure and **minimum** content requirements of the EIS.

Proponents are advised to consult the EPA during preparation of the EIS, including in the case of any uncertainty in relation to the requirements set out in these Guidelines.

General requirements

- Avoid technical terminology where possible in the main body of the EIS. It should be able to be read as an independent document which provides a general understanding of the proposal.
- Include any detailed technical data or supplementary reports as appendices.
- Consider document accessibility. The Australian Government Style Manual provides information about inclusion and accessibility.
- Use cross-referencing to prevent unnecessary duplication between sections.
- Reference all sources of information using a consistent style.
- Define all key terms and words used.
- Information in the EIS must be relevant.
 - Show reasoning for arguments. Support conclusions with referenced evidence.
 - Indicate how current information is, how reliability has been tested, and the degree of confidence attached to any predictions.
 - Sufficient technical detail must be provided to allow for environmental impact assessment, even when details are not final at the time of preparation.
 - If information is currently unavailable, estimates and alternative options should be provided, however the limitations of available information must be evaluated.
- Provide any sensitive commercial or corporate information in a confidential appendix. Provide a comment in the EIS if this has been done.

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 (section 43A of EMPCA).

Spatial and visual information requirements

- Present information in maps, plans, diagrams, and photographs where necessary, to enhance understanding.
- Images must be high quality and reproducible in monochrome, with all text and relevant features clearly visible.
- Maps and plans should include a north arrow and scale.

- Use a consistent base plan throughout the EIS where appropriate, to allow elements to be overlaid and compared. Ensure that detailed information is clear and visible, particularly when using satellite images as background layers. This is best achieved using a geographical information system (GIS).
- Specify the coordinate reference system when providing or referring to spatial information, including maps, plans, grid coordinates and heights. Further information on coordinate reference systems used in Tasmania can be found on the [Land Tasmania website](#)⁴.

Recommended systems are:

- Horizontal – Geocentric Datum of Australia 1994⁵ Map Grid of Australia Zone 55 (GDA94 MGA55)
- Vertical – Australian Height Datum (Tasmania) (AHD83).

Independent review

For large proposals, such as Class 2C activities, prior to submission to the EPA, the draft EIS should be independently reviewed by a suitably qualified person to confirm that it meets the requirements detailed in Guidelines issued for the proposal.

Submission

It is strongly recommended that proponents submit a draft EIS to the EPA for review prior to formal lodgement of the EIS with the Board. The draft EIS submitted for review must meet the requirements of these Guidelines and be in accordance with Appendix A; incomplete documents will not be accepted for review.

The EIS (and any drafts submitted for review) may be submitted via email to assessments@epa.tas.gov.au and your nominated contact officer. Proponents should contact the EPA if alternative submission methods are deemed necessary.

⁴ See <https://nre.tas.gov.au/land-tasmania/geospatial-infrastructure-surveying/geodetic-survey/coordinate-height-and-tide-datums-tasmania>

⁵ Geocentric Datum of Australia 2020 (GDA2020) is the new official datum for recording the horizontal location of spatial information in Australia, but is not yet fully implemented in Tasmania.

Part C. EIS structure and content

The EIS must follow the structure set out below and must address all requirements unless otherwise agreed following consultation with the EPA. For clarity, organise content with further headings and subheadings as appropriate.

Title page

The title page must include:

- Name of proponent (legal entity)
- Name of proposal (include “expansion” or “upgrade” where appropriate)
- Proposal address or location
- EIS version number
- Month and year of submission

Executive summary

The executive summary must provide a clear and concise overview of the proposal, its environmental implications, and the function of the EIS in the context of the assessment process. For a larger EIS, the executive summary must be written as a stand-alone document for people who may not wish to read or acquire the full EIS.

Table of contents

The EIS must include a table of contents and a list of figures and tables to allow the reader to easily locate information. The table of contents should include hyperlinks to allow documents to be navigated easily.

Glossary and abbreviations

Provide a list of abbreviations and acronyms and a glossary which clearly defines any technical terms used in the EIS.

Proponent information

Proponent details:

- Name of proponent (legal entity)
- Name of proponent (trading name)
- Registered address of proponent
- Postal address of proponent
- ABN
- ACN (where relevant)

Contact person’s details:

- Name
- Telephone
- Email address

Activity Operator details must be provided if the operator will be a different entity to the proponent.

1. Introduction

The introduction should provide:

- General background information on the proponent, including relevant development and operational experience.
- General background information on the proposal, including:
 - Current status of the proposal;
 - An overview of the principal components of the proposal;
 - The proposal location;
 - Likely markets for the product; and
 - Possibilities for future expansion.
- Information on current permits, regulatory approvals and/or licences in regards to the existing activity.
- A discussion about how the proposal relates to any other proposals that have been or are being developed in the same region as 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

- The scope of the proposal must be clearly described, and must include:
 - A summary table;
 - A comprehensive description of the proposal, including its interaction with existing activities and infrastructure at the wider Renison Mine site and any proposed changes to existing operations;
 - Definition of the activity area;
 - Maps, plans and visual information;
 - A summary of planning aspects;
 - Socio-economic context; and
 - Off-site infrastructure.
- Provide the following information in relation to the existing activity:
 - A summary of public complaints regarding the activity (received by the activity operator and by regulatory authorities) and a detailed history of complaints received in the last five years and their likely causes;
 - Details of breaches of conditions of current regulatory approvals (if any); and
 - Details of contraventions of environmental law (if any).
- Where a proposal will require a permit application under LUPAA, the proposal description and specification of the site must be consistent with the intended or current permit application.

2.1 Summary table

- Summary table providing an overview of the proposal, and identifying the key characteristics, including:
 - Location and planning context;
 - Existing site information, including topography, local climate, geology, geomorphology, soils (e.g. erodibility and acid sulfate soils), vegetation, fauna, groundwater, and surface drainage (e.g. waterways, lakes, wetlands, coastal areas);
 - Proposed infrastructure;
 - Proposed timeline; and

- Inputs (e.g. water, materials, energy) and outputs (e.g. products, wastes and emissions).

Refer to *Appendix C* for an example of a project description summary table.

2.2 Detailed description of proposal

This section should include information that has not been included in the summary table, or that requires further explanation. Provide comprehensive detail on the proposed construction, commissioning and operation of the activity, including any ancillary works that are for the purpose of the proposal (e.g. access works).

2.2.1 Project components

- Describe all of the physical components (i.e. infrastructure) required for the proposal to function up to closure.
- Detail the total footprint of all components of the proposal and provide a breakdown for sub components including the existing Tailings Storage Facilities (TSFs), proposed tailings reprocessing plant, pipeline(s), and TSF (E Dam).
- Describe the major items of equipment (including pollution control equipment) and onsite facilities. Include detailed technical information on major items of equipment as appendices.
- Describe the mineral resource, including the following detail:
 - A description of historical tailings sampling;
 - Outline the limitations of any tests and/or studies that have been conducted to characterise the chemical and physical characteristics of existing tailings; and
 - Detail any future proposed sampling and exploration work.
- Define the proposed hours within which activities will take place (hours per day and specific days per week) for all aspects of the proposal including construction and operational phases.
- Describe the volume, composition, origin, destination, and route for vehicle movements (road, rail, shipping, and air) for construction and operational phases of the proposal, including timing of traffic flows. Specify what proportion of road usage and vehicle movements will involve over dimension and heavy road vehicles. Compare the proposed vehicle movements with existing usage of relevant routes.

2.2.2 Construction

- Provide a step-by-step description of significant activities that will occur during the construction phase of the proposal.
- Provide an indicative timetable for completing major stages of the construction phase.
- Outline any raw materials (including water) required for construction. Describe any borrow areas required for construction.
- Provide a preliminary Construction Environmental Management Plan for the proposed TSF (E Dam), including pipeline(s) and associated infrastructure, and for the proposed processing plant.

2.2.3 Commissioning

- Provide a step-by-step description of significant commissioning activities for each of the key operations (i.e. tailings reclamation, mineral processing and TSF (E Dam)) that will occur following installation of equipment and infrastructure.
- Provide an indicative timetable for completing major stages of pre-commissioning and commissioning. Describe the point at which pre-commissioning and commissioning will be considered complete.

2.2.4 Operation

- Describe the proposed tailings reclamation process in a step-by-step manner, using explanatory diagrams and flow charts where appropriate. The description should comprehensively detail the reclamation methodology including the reclamation of tailings at the embankment edge and at the base of each of the existing TSFs (A, B, C and D Dams), staging, required infrastructure and equipment,

direction of works, deconstruction of existing TSF (A, B, C and D Dams) embankments, screening and conveyance of tailings etc.

- Describe how the full recovery of tailings back to natural ground will be achieved for each existing TSF (A, B, C and D Dams), and identify the potential for any tailings material to remain in-situ.
- Describe if there are any controls on the grade of tailings that can be processed (i.e. how much exogenous material is acceptable).
- Describe how energy demands will be met.
- Define the tailings reclamation capacity and rate for relevant processes including processing. Include peak rates, daily average rates and annual tailings reclamation and processing rates where applicable.
- Provide a description of water-related infrastructure including inputs (volumes, rates) and discharge points to the environment (stormwater and otherwise) (see sections 6.3 and 6.4 for further details).
- Describe the proposed mineral reprocessing in a step-by-step manner, using explanatory diagrams and flow charts where appropriate. The description should comprehensively detail all stages of mineral processing, required infrastructure and equipment, direction of works, stockpiling, waste management etc.
- Identify and quantify all products, emissions and/or wastes produced from tailings reclamation and mineral reprocessing.
- Outline all energy requirements for tailings reclamation and mineral reprocessing. Describe how energy demands will be met.
- Describe the operation of the proposed TSF (E Dam), using explanatory diagrams and flow charts where appropriate. The description should detail all stages of TSF operation and outline method(s) of tailings delivery and deposition.

2.3 Maps, plans and figures

Spatial information should be presented in maps, plans, diagrams and imagery. 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, scale and legend. When spatial data (including maps, plans, coordinates and heights) are provided or referred to, the horizontal and vertical datum must be specified.

2.3.1 General location maps

Provide general location maps of the existing environment and surrounding area (of a suitable scale), showing:

- The location of the proposal site;
- Boundaries of the property on which the proposal is located;
- Road access to and from the site;
- The distance(s) to any sensitive uses and residences⁶ within 3 km of the proposed activity;
- The applicable attenuation distance⁷
- Topographical features, aspect, and direction of drainage;
- Location of waterways and drains (including ephemeral waterbodies and water courses);
- Electricity transmission lines;
- Surrounding land tenure;
- Surrounding land use (including areas of conservation or recreational significance); and

⁶ 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.'

⁷ Refer to relevant planning scheme or State Planning Provisions

- Surrounding land zoning in the local government planning scheme.

2.3.2 Map of the Land as defined in the development application

Provide a map of the Land showing relevant Cadastral boundaries with title details, e.g. Volume/Folio 136529/1.

2.3.3 Map of the proposed activity area

Provide a map of the proposed activity area clearly showing the physical extent of the proposal. The activity area should encompass all works for construction and areas used for operations for the proposal, including earthworks, land clearing, existing or proposed structures, stockpiles, laydown areas, parking, amenities and sediment management and other infrastructure.

- The map should include a sufficient number of coordinates at corner points for the activity area boundary; and
- The activity areas boundary should also be provided in a geospatial vector format (shapefile or DXF). Where works are proposed in key stages over time, include definitions or boundaries of each of the key stages.

2.3.4 Site plan

Provide site plan(s), including construction layout plan(s), showing the detail of proposed works and operations, including:

- Cadastral boundaries and mining lease boundaries;
- The boundary of the activity area;
- Locations of existing and proposed buildings/structures and plant and machinery;
- Relevant topographic features, including contours and waterways;
- Proposed buildings, structures, major earthworks, major items of equipment, storage areas, loading/unloading areas;
- Tailings reclamation/extraction locations, including excavation direction and haulage roads;
- A plan of the proposed reprocessing plant, showing the location of all major items of equipment and facilities;
- Locations of product and waste storage areas, construction materials, overburden, soil, and waste stockpiles;
- Locations of existing and proposed TSFs (A, B, C, D and E Dams);
- Locations of borrow pits;
- The alignment of any tailings and/or water recovery pipeline(s) and/or sluices;
- Locations of infrastructure for raw water supply and processing, including drainage and piping works, pump stations, and any spillways;
- Site water management including locations of collection systems and drainage control measures such as cut-off drains, sediment settling ponds, bunding, monitoring points and the locations of all discharge points (stormwater or otherwise);
- Existing and proposed discharge points (spillways, decant tower, stormwater etc.);
- Any sanitary and sewage treatment facilities;
- Locations of temporary and permanent storage areas for fuels, oils, reagents, and other hazardous goods and/or chemicals;
- Locations of all point source emissions and major sources of air and/or noise emissions;
- The alignment of any tracks, conveyors, pipeline(s) or similar means of transporting on-site materials; and
- Vegetation types, clearly marking areas to be cleared, and records of any threatened species/vegetation communities.

2.3.5 Figures and flowcharts

Present figures such as process flowcharts and images where they are likely to improve readers' understanding of the site and proposal. Any images and photos used must be high-quality, with an accurate description and date.

2.4 Offsite infrastructure

Describe any new infrastructure or offsite ancillary facilities required to enable the proposal to proceed, such as water supply, electricity supply, roads or other infrastructure.

3. Planning and socio-economic context

The planning aspects description should include any additional planning information and data not included in the summary table.

- If a permit is required under LUPAA provide Use Class and Permissibility of the proposed activity under the applicable Planning Scheme.
- Detail land tenure and property boundaries of the proposed site, with certificate of title details.
- Detail land zonings for the proposed site and surrounding areas.
- Describe any rights of way, easements and covenants affecting the site.
- Discuss land use and planning history of the site, including the potential for site contamination⁸, present use and any existing buildings and significant structures.
- Describe land use and ownership in the vicinity of the site and those areas which may be affected by the proposal.
- Provide the location and nature of industrial facilities.
- Detail sensitive uses⁹ and 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).
- Consider any proposed or potentially sensitive uses within applicable attenuation distances from the proposal site, which have been or are likely to be granted approval under the local planning scheme.

Briefly describe the existing social and economic environment that may be affected by the proposal. This may include:

- 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.

⁸ Information on potentially contaminating activities and contaminated site assessment can be found online at <https://epa.tas.gov.au/Pages/Land.aspx>

⁹ 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.'

4. Project alternatives

Proponents should provide the rationale for the proposal. Alternatives should consider best practice environmental management, including measures listed under section 4 of [EMPCA](#).¹⁰ This section of the EIS should provide a summary of the Options Analysis for the proposal, with an Options Analysis report to be included in the appendices. The Options Analysis should include the following detail as a minimum:

- A siting study for all proposed infrastructure including the proposed TSF (E Dam) which evaluates alternative locations and describes the site selection process and criteria;
- Assessment of alternative design options, technologies, materials, tailings disposal and storage methods, and tailings treatment techniques, including an evaluation of their environmental performance;
- Key design parameters and criteria based on a summary of the geochemical and physicochemical characteristics of tailings;
- The effect of any community values and stakeholder consultation on the selection process;
- How uncertainties and long-term impacts due to climate change have been considered;
- Justification of the preferred option(s) in terms of clearly defined environmental, social, economic and technological considerations, which discusses how environmental impacts have been avoided and the life cycle assessment of the preferred tailings management option.

5. Public consultation

Describe any public consultation that has taken place during project planning and preparation of the EIS and summarise the results of this consultation. Describe any proposed future public consultation that will take place during project implementation and operation. The Board encourages early community engagement, as it often leads to better outcomes for all parties. Guidance on effective community engagement is available on the [EPA website](#).¹¹

6. Potential impacts and management

Identify all potential environmental impacts and describe the proposed measures to avoid, mitigate or offset adverse consequences. The detail provided on each issue should reflect its significance. While key issues are identified for the proposal, other issues that emerge as significant while preparing the EIS, through environmental studies, public comments or otherwise, must be considered and addressed.

Address each discrete issue separately, using headings and subheadings where necessary to organise and separate discussions.

Use scientific data to support predictions and evaluate impacts and provide references to the data used. Where specialist reports have been required for key issues, summarise them within the body of the EIS where relevant, and attach the reports as appendices. Detail the qualifications of the authors of any specialist reports. Make sure that the information in the body of the EIS is consistent with the information in the appendices.

General information requirements for each potential impact are described below and are in addition to any specific information requirements detailed later in this section.

Existing environment

- Describe the existing environment in relation to the impact, including the vulnerability of the potentially affected environment.
- Analyse the issue in relation to the existing environment.

¹⁰ See <https://www.legislation.tas.gov.au/view/html/inforce/current/act-1994-044#GS4@EN>

¹¹ See [https://epa.tas.gov.au/Documents/Guidance on Community Engagement.pdf](https://epa.tas.gov.au/Documents/Guidance%20on%20Community%20Engagement.pdf)

Methodology

- Describe how the assessment of the impact has been undertaken, such as by survey or desktop study.
- Identify any relevant guidelines and standards used.
- Discuss any choice of methodology over alternatives where relevant.

Assessment

- Clearly articulate potential impacts, using tables and figures to aid communication where possible.
- Support assertions and assumptions with adequate argument and/or evidence.
- Identify plausible worst-case scenarios and the reversibility of the impact.
- Summarise the proposal's contribution to any cumulative impacts, where appropriate.

Avoidance and mitigation measures

- Describe the measures proposed to avoid, mitigate or offset potential adverse impacts.
- Detail any specialist recommendations which have been/will be implemented. Where specialist recommendations are not to be implemented, justify why. All recommendations made in specialist reports should be addressed.
- Analyse the effectiveness of the mitigation measures. Describe how and to what degree the impacts will have been avoided, minimised or offset.
- Discuss any residual impacts, referring to relevant guidelines or standards.
- Discuss any contingency measures related to pollution control equipment.

Refer to *Appendix A: General principles for assessing environmental impacts*.

Key issues

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

1. Tailings and waste characterisation
2. TSF construction and management
3. Surface water
4. Groundwater
5. Biodiversity and natural values

6.1 Tailings and waste characterisation

Sufficient geochemical test work, assessment, and analysis must be undertaken to clearly demonstrate the acid forming or non-acid forming (NAF) potential and the geochemical characteristics of all tailings, and any other waste materials arising from the proposal. Sample selection methodology should be provided where appropriate. Data requirements are detailed below.

6.1.1 Existing environment

- Details of the characteristics of the historical tailings to be reclaimed from existing TSFs (i.e., the entire tailings profiles of A, B, C and D Dams) and of the waste materials generated from reclamation process(es), including:
 - Material type, mineralogy, and particle size;
 - Geochemical test work and modelling to quantify the acid generating (or neutralising) potential, and estimated quantities of PAF material and its distribution within the existing TSFs (A, B, C and D Dams), and production rates including variability over time (*refer to data requirements below*);
 - Geochemical and physicochemical characteristics of historical AMD and/or neutral mine drainage (NMD) and/or saline drainage (SD) formation at the existing TSFs (A, B, C and D Dams), including all sources, locations, volumes, mass loads, and solute concentrations;
 - Identification of metals and other chemical elements and/or ions of potential environmental concern and an assessment of metal leaching potential, acid buffering potential and metal enrichment. Consideration should be given to tailings handling methods (i.e., transportation, storage, and treatment), and any decant of supernatant;
 - Details of any segregation, blending, thickening, and/or dosing of tailings or waste material, and method(s) of tailings delivery and deposition. Any fixation processes (such as fixation of arsenic) should be detailed and options for monitoring and optimisation described; and
 - Provision of a conceptual model for each existing TSF (A, B, C and D Dams) that describes what is known about historical and existing release, transport and fate of contaminants including all sources, volumes, mass loads, pathways (e.g. seepage, pumping discharge, overflow discharge etc.).
- Details of the characteristics of the tailings generated from continued operations at the Renison Processing Plant that will be co-disposed of in the proposed TSF (E Dam), including:
 - Material type, mineralogy, and particle size;
 - Geochemical test work and modelling to quantify the acid generating (or neutralising) potential and estimated quantities of PAF material, and production rates including variability over time (*refer to data requirements below*);
 - Identification of metals and other chemical elements and/or ions of potential environmental concern and an assessment of metal leaching potential, acid buffering potential and metal enrichment. Consideration should be given to proposed tailings handling methods (i.e., transportation, storage, and treatment), and any decant of supernatant; and

- Details of any segregation, blending, thickening, and/or dosing of tailings or waste material, and method(s) of tailings delivery and deposition. Any fixation processes (such as fixation of arsenic) should be detailed and options for monitoring and optimisation described.

6.1.2 Assessment

- Describe the tailings reclamation process(es) regarding their potential to result in AMD formation, and provide and discuss estimated lag times for the different materials on the basis of geochemical characteristics.
- Provide details of the characteristics of the tailings to be generated from the proposed tailings reprocessing plant including:
 - Material type, mineralogy, and particle size;
 - Geochemical test work and modelling to quantify the acid generating (or neutralising) potential and estimated quantities of PAF material, and production rates including variability over time (*refer to data requirements below*);
 - Identification of metals and other chemical elements and/or ions of potential environmental concern and an assessment of metal leaching potential, acid buffering potential and metal enrichment. Consideration should be given to proposed tailings handling methods (i.e., transportation, storage, and treatment), and any decant of supernatant; and
 - Details of any segregation, blending, thickening, and/or dosing of tailings or waste material, and method(s) of tailings delivery and deposition. Any fixation processes (such as fixation of arsenic) should be detailed and options for monitoring and optimisation described.
- Detail geochemical characteristics of proposed waste materials to be disposed of in the proposed TSF (E-Dam) in accordance with leading industry best practice and site-specific geological and climate conditions including variability over time. This assessment must include acid generating and metal leaching potential, acid buffering potential and metal enrichment (*data requirements detailed below*).

6.1.3 Avoidance and mitigation measures

- Discuss best practice environmental management measures to minimise potential for AMD formation during the tailings reclamation process.
- Provide detection and remediation/treatment plans for potential AMD formation and seepage during the reclamation process.
- Describe how non-tailings waste material recovered from the existing TSFs (A,B, C and D Dams) during the reclamation process will be managed during operations and on closure.

Data requirements

- All testing must be consistent with the [Leading Practice Handbooks for Sustainable Mining](#)¹² and include sufficient representative samples. As a minimum, testing should include the following parameters: metal contents; alkalinity; acidity; mineralogy of potential neutralising minerals; mineralogy of sulphides; and total sulphur. Consideration must be given to site-specific geological and climate conditions, and any variability over time.
- Static and kinetic testing is required for all tailings streams to determine the appropriateness of proposed handling methods (i.e., transportation, storage, and treatment). As a minimum, preliminary static tests should include total inorganic carbon, total sulphur, and paste pH.
- Acid base accounting (ABA) parameters must include (as a minimum): Acid Neutralising Capacity (ANC), Maximum Potential Acidity (MPA), ANC/MPA ratio, available ANC, Net Acid Production Potential (NAPP), Net Neutralisation Potential (NNP), and Net Acid Generation (NAG) (NAG_{OX} and NAG_{pH}).

¹² See <https://www.industry.gov.au/publications/leading-practice-handbooks-sustainable-mining>

- Sufficient representative sampling and chemical testing must be undertaken for the historical tailings to be reclaimed from existing TSFs (A, B, C and D Dams) to determine the chemical variability of tailings. Consideration must be given to the entire tailings profile and include all elements that have the potential to impact on public health and/or the environment via water and air emissions.
- Sufficient representative sampling of the different lithologies and the lateral distribution of properties within those lithologies must be used for tailings and waste characterisation.

6.2 TSF construction and management

Discuss the potential impacts of tailings reclamation and the disposal and storage of processed tailings and any other waste material in the proposed TSF (E Dam), including how characteristics of existing TSFs (A, B, C and D Dams) are likely to change during the operational phase and potential impacts on the environment.

6.2.1 Existing environment

- Provide detailed geotechnical engineering designs for the existing TSFs (A, B, C and D Dams) and an overview of the following:
 - Details on TSF construction including any refurbishments, spillways, lining, grout curtains, and lifts;
 - Treatment methods;
 - Placement depth and time frames for settlement (rate of rise);
 - Type of distribution system (e.g., spigot number and layout);
 - Tailings beach angles;
 - Decant design, location, and operation;
 - Any requirements to maintain moisture in tailings for dust control and/or reduce PAF reactions and AMD formation;
 - Details on geotechnical stability; and
 - Results of any monitoring.

6.2.2 Assessment

- Describe how the existing TSFs are anticipated to change during tailings reclamation including the following detail as a minimum:
 - Changes in pore pressure, phreatic surface, settlement, or movement during reclamation, especially in relation to upstream raises;
 - Changes in rheology of processed tailings and any resultant implications for pore pressure and phreatic surface etc.;
 - Any implications for suspension/resuspension of processed tailings due to wind driven wave action;
 - Potential changes in the quantity and quality of any seepages and how these will be managed; and
 - Any requirements to remove or replace embankments and proposed mechanisms for achieving this.
- Outline the construction methods and materials for the proposed TSF (E Dam) including the following detail as a minimum:
 - Detail the methods proposed (including geochemical sampling, ABA/NAG testing, and NAF/PAF classification) to ensure that TSF construction materials are geochemically benign and fit for their intended purpose (*refer to data requirements in section 6.1 above, as relevant*);
 - Detail and show the source location(s) of construction materials (i.e. borrow pits) on a suitable map/site plan and provide an indication of the quantities of materials required for the construction of each stage; and
 - Detail the proposed construction methods for each stage, including justification for any variation from an engineered clay liner.

- Provide detailed geotechnical engineering designs for the proposed TSF (E Dam) and describe method(s) of tailings delivery and deposition including:
 - Details on TSF construction including refurbishments, spillways, lining, grout curtains, and lifts;
 - Tailings management and treatment methods (e.g., pre-treatment, blending or segregation of tailings);
 - Placement depth and time frames for settlement (rate of rise);
 - Type of distribution system (e.g., spigot number and layout);
 - Tailings beach angles;
 - Decant design, location, and operation;
 - Details on geotechnical stability; and
 - Proposed monitoring.
- The detailed geotechnical engineering designs for the proposed TSF (E Dam) must:
 - Consider the potential for AMD formation, and the specific high permeability area and hydraulic connectivity within the TSF footprint; and
 - Be independently peer-reviewed by suitably qualified person(s). The suitably qualified person(s) must be approved by the Director, EPA before undertaking the peer-review.

6.2.3 Avoidance and mitigation measures

- Provide a Tailings Management Plan for existing TSFs (A, B, C and D Dams) that includes the following as a minimum:
 - A detailed description of tailings reclamation and tailings management strategy(ies);
 - Details of how tailings will be reclaimed from the TSF floors and the potential for any tailings material to remain in-situ, including demonstration of how tailings will be extracted in a systematic manner to minimise the area of disturbance and allow for progressive rehabilitation of TSFs;
 - Details of any anticipated changes to the characteristics of the existing TSFs and the tailings stored within that may occur during reclamation and how these will be monitored and managed;
 - Details of the proposed storage and disposal methods for all waste material generated from the reclamation process (e.g., tailings, slag, ferric arsenate, oversize material) to achieve closure of the existing TSFs (A, B, C and D Dams), including management of such materials during unanticipated early closure and temporary closure; and
 - Assessment of the tailings permeability and beaching characteristics, including consideration of any other non-tailings waste material that are stored within the TSFs.
- Provide detailed information about the proposed pipeline(s) for the conveyance of tailings material including pipeline design, commissioning, construction, and operational management. Discuss measures to be implemented to avoid and minimise potential environmental impacts, including contingency plans for when control measures fail.
- Provide Closure Plans for the existing TSFs (A, B, C, and D Dams) post-reclamation of tailings. The Plans should 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(ies) for the TSF as well as strategies to manage the TSFs in the event of unanticipated early closure, including:
 - Details of any drawdown scenarios;
 - Mechanisms to reduce the long-term potential for AMD formation and emissions; and
 - Any ongoing water quality management requirements;
 - An environmental risk analysis which evaluates the geochemical and geotechnical aspects of closure and includes the following:
 - Consideration of expected pollutants formed within the TSF;
 - The rate and quality of pollutants that are likely to be 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 must be undertaken by a suitably qualified person(s) approved by the Director, EPA.
 - Details of the approximate quantities, types and sources of any cover materials required for closure of the TSF including clays, gravels, rock, organic materials or synthetic low permeability barriers;
 - Details of the proposed final landform to support the post mining land use including:
 - A description of the vegetation types for the post-closure landform and how the cover materials and design(s) encourage the desired vegetation types; and
 - Consideration of the geotechnical stability of the structure in perpetuity.
 - A preliminary post closure water balance to demonstrate that proposed closure strategies are achievable. A range of climatic scenarios should be considered referencing appropriate data¹³;
 - Details of monitoring and maintenance required to ensure the long-term performance and integrity of the rehabilitated structures;
 - Provision of cost estimates to effectively close the TSF under both unanticipated and planned closure scenarios; and
 - Evaluation of whether the Plans are consistent with the regional reserve management objectives under the *National Parks and Reserve Management Act 2002*, specifically with regard to the rehabilitation and conservation of natural and cultural values within and adjacent to the Renison Bell Regional Reserve.
- Provide a Tailings Management Plan for the proposed TSF (E Dam) that includes the following as a minimum:
 - A detailed management strategy(ies) for reprocessed tailings;
 - Details of the proposed storage and disposal methods for all waste material generated from the activity (e.g., tailings, slag, ferric arsenate) to achieve closure, including management of such materials during unanticipated early closure and temporary closure;
 - Any requirements to maintain moisture in tailings for dust control and/or reduce PAF reactions and AMD formation;
 - Assessment of tailings permeability and beaching characteristics, including consideration of any other non-tailings waste material that are proposed to be stored within the TSF; and
 - A proposed monitoring program for the TSF including an outline of monitoring frequency and parameters.
 - Provide a Preliminary Closure Plan for the proposed TSF (E Dam). The Plan should 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 for the TSF, including details of any drawdown scenarios, mechanisms to reduce the long-term potential for AMD formation and emissions, and any ongoing water quality management requirements;
 - Details of strategies to manage the facility in the event of unanticipated early closure including drawdown, mechanisms to reduce the long-term potential for AMD formation and emissions, and any ongoing water quality management requirements;
 - Environmental risk analysis which evaluates the geochemical and geotechnical aspects of closure and includes the following:
 - Consideration of 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.

¹³ For appropriate data, see <https://www.climatechangeinaustralia.gov.au/en/>

- 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 before the peer-review is undertaken.
- 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;
- Details of the proposed final landform to support the post mining land use including:
 - A description of the vegetation types for the post-closure landform and how the cover materials and design(s) encourage the desired vegetation types; and
 - Consideration of the geotechnical stability of the structure in perpetuity.
- A preliminary post closure water balance to demonstrate that proposed closure strategies are achievable. A range of climatic scenarios should be considered referencing appropriate data¹⁴;
- 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 under both unanticipated and planned closure scenarios; and
- Evaluation of whether the Plan is consistent with the regional reserve management objectives under the *National Parks and Reserve Management Act 2002*, specifically with regard to the rehabilitation and conservation of natural and cultural values within and adjacent to the Parting Creek Regional Reserve.

6.3 Surface water

Discuss potential impacts on surface water for all phases of the proposal, including construction, operation, decommissioning and unanticipated closure, as well as existing operations and tailings storage, and any proposed changes to existing infrastructure and processes. Study methods must be presented, where appropriate.

6.3.1 Existing environment

- Provide a description and map of the activity site, inclusive of existing activity areas and the proposed activity footprint, with respect to topography and preferential surface water flow, existing surface water and stormwater drainage pathways. Identify nearby water bodies and watercourses likely to be impacted by the proposal.
- Provide a description of natural processes of particular importance for the maintenance of the existing environment and the vulnerability of the activity area to natural hazards (e.g. flooding, seismic activity, fire, landslips and damaging winds).
- Provide an overview of the receiving environment. Identify all relevant Protected Environmental Values (PEVs)¹⁵, including:
 - Sensitive uses and associated water quality considerations;
 - Seasonal water quality, hydrological characteristics and biological condition of the receiving environment; and
 - Reference to published or determined (site-specific) water quality guideline values for receiving environments. For information about the water quality management framework and evaluation criteria in Tasmania, refer to [Technical Guidance for Water Quality Objectives \(WQOs\) Setting for Tasmania, August 2020](#).¹⁶
- Describe baseline surface water quality of watercourses within the proposed activity footprint and the receiving streams of discharges from the activity with reference to biological assessments and

¹⁴ For appropriate data, see <https://www.climatechangeinaustralia.gov.au/en/>

¹⁵ See <https://epa.tas.gov.au/environment/water/pevs-for-tasmanian-surface-waters>

¹⁶ See [https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20\(WQOs\)%20Setting%20for%20Tasmania.pdf](https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20(WQOs)%20Setting%20for%20Tasmania.pdf)

resuspendable sediment monitoring. Monitoring should be undertaken in accordance with the following:

- Water quality parameters must include (as a minimum): pH, alkalinity, dissolved oxygen, conductivity, temperature, turbidity, total suspended solids, total and dissolved nutrients, total and dissolved metals and sulphate.
- Biological assessment of aquatic macroinvertebrates using Australian River Assessment System (AusRIVAS)¹⁷ combined season analysis, and with additional taxa identification reported to genus, where possible, for baseline surveys. Provide separate analysis of edge and riffle habitat surveys. Habitat descriptions in accordance with AusRIVAS protocol must be included.
- Biological assessment of fish as per [The Tasmanian River Condition Index Aquatic Life Field Manual](#)¹⁸.
- In-channel resuspendable sediment accumulation using the Quorer and Shuffle Index methods in accordance with the [Sediment Assessment Methods: Protocols and guidelines for assessing the effects of deposited fine sediment on in-stream values](#)¹⁹.
- Include the results of monitoring in the EIS and provide separately as metadata and monitoring data following the instructions and using the Excel workbook templates or file formats provided on the [Water Quality Data Elements](#)²⁰ webpage.
- Provide details of any existing point source discharge to the environment, including:
 - A description of the discharge pathway, including details of discharge infrastructure, as relevant.
 - A description of the discharge regime, including consideration of frequency, continuity, and rate of discharge. Where flow rate varies, relevant patterns and statistics should be provided.
- Describe any existing wastewater and/or stormwater treatment on the site and provide an analysis of wastewater and/or stormwater quality as discharged from the existing activity. Include a map showing existing discharge locations and wastewater and stormwater collection and processing systems.

6.3.2 Assessment

- Identify and characterise future leachate/effluent that may be generated from the proposed TSF (E-Dam) including:
 - A description of the predicted physicochemical characteristics of leachate/effluent derived from disposal of tailings material generated from tailings reprocessing based on leading industry best practice and accounting for site-specific geological and climate conditions and variability over time;
 - Consideration of the implications of proposed co-disposal within the proposed TSF (E Dam) of tailings generated from reprocessing of historical tailings with tailings generated from existing processes at the Renison Processing Plant; and
 - Leachate/effluent predictions and characterisation should be informed by the data requirements outlined in section 6.1 above, as relevant, including sufficient representative sampling of the different lithologies and the lateral distribution of properties within those lithologies.
- Describe and provide a quantitative analysis of the water balance for tailings reclamation including details of all water storage facilities, water input requirements for tailings reclamation (volume and rates), water transfer and drainage routes, discharge/discant points (stormwater-related or otherwise), and the receiving environment. The analysis should consider surface water and groundwater interactions, including known seep sites, and variation in rainfall and natural flow, accounting for extended dry periods and periods of excessive rainfall. Provide a conceptual model for the proposed

¹⁷ See <https://ausrivas.ewater.org.au/>

¹⁸ See <https://nre.tas.gov.au/water/water-monitoring-and-assessment/surface-water-assessment/assessing-river-health-and-condition/tasmanian-river-condition-index>

¹⁹ Clapcott JE, Young RG, Harding JS, Matthaiei CD, Quinn JM and Death RG. 2011, Sediment Assessment Methods: Protocols and guidelines for assessing the effects of deposited fine sediment on in-stream values, Cawthron Institute, New Zealand.

²⁰ See <https://epa.tas.gov.au/environment/water/water-quality-data-elements>

TSF (E Dam) that describes potential release, transport, and fate of contaminants and includes all sources, volumes, mass loads, pathways (e.g. seepage, pumping discharge, overflow discharge etc.) and receptors. The conceptual model must include:

- Modelled predictions of expected effluent volumes and quality of all emitted water; and
- Variations in water balance (i.e., precipitation, groundwater flow, evaporation), accounting for site-specific climate conditions such as, extended dry periods (i.e., extended summer seasons or high wind events) and periods of excessive rainfall (i.e., 1 in 100-year flood event).
- Identify and characterise all other liquid emissions that could arise from the proposal, including from industrial processes, waste treatment processes, fuelling, domestic/office facilities, stormwater or other sources.
- Discuss the potential impacts of AMD from the proposal on surface waters during the construction, operational and post closure stages.
- Detail any other information relevant to assessing potential impacts, such as ecotoxicological data or potential hydrological changes.
- Describe any proposed wastewater and/or stormwater treatment for the proposal including proposed changes to existing wastewater and/or stormwater treatment at the site. Describe the selected treatment technology, the likely volume and quality of effluent/water that will be produced and its fate in the environment.
- Describe any drainage works and discharge controls and other sediment and erosion control measures related to tailings reclamation and the operation of the existing TSFs (A, B, C and D Dams)²¹.
- Describe proposed stormwater management, including during reasonably foreseeable flood events. Include an assessment of the potential for pollutants to become entrained in stormwater and details of drainage control measures such as cut-off drains and sediment settling ponds. Control measures should be in accordance with International Erosion Control Association's [Best Practice Erosion and Sediment Control](#)²² or similar.
- Provide details of any proposed point source discharge to the environment, including:
 - A description of location and any associated infrastructure;
 - A description of the proposed discharge regime, including consideration of frequency, continuity, and rate of discharge. Where flow rate varies, relevant patterns and statistics should be provided. Seasonal hydrology must be used to describe typical flow patterns and any flow controls influencing watercourses receiving the discharges. The minimum flow, defined as the lowest 7-day average flow that occurs (on average) once every 10 years (i.e., 7Q10) must be provided. Where stream gauging is available, flow data should be used to describe the hydrology, otherwise flow should be estimated from local climate data and catchment terrain modelling.
- Provide details of, and a map depicting:
 - Proposed wastewater discharge locations;
 - Proposed preferential flow of stormwater arising from rainfall on the proposal site; and
 - Location(s) of proposed stormwater collection system(s).
- Evaluate the water quality impacts from discharge associated with the proposal. Consider wastewater quality, volume(s) and discharge regime in conjunction with receiving environment conditions. The evaluation should include consideration of seasonal variations in wastewater/effluent and receiving environment water quality and quantity.

²¹International Erosion Control Association (Australasia) guidelines for best practice can be found at <https://www.austieca.com.au/publications/best-practice-erosion-and-sediment-control-bpesc-document>

²² See <https://www.austieca.com.au/publications/best-practice-erosion-and-sediment-control-bpesc-document>

- Undertake dilution modelling for new E Dam discharge and existing D Dam discharge where concentrations of contaminants of concern exceed determined guideline values. This must consider:
 - Initial/near-field mixing in low flow conditions, including consideration of toxicant parameters such as relevant metals, and environmental stressors such as pH, dissolved oxygen, temperature and nutrient concentrations;
 - Secondary mixing and potential far-field impacts, such as nutrient enrichment and/or accumulation of toxicants; and
 - The effects of two simultaneously operating discharges from E Dam and D Dam.

6.3.3 Avoidance and mitigation measures

- Identify best practice mitigation and management measures that will be implemented at the proposed TSF (E Dam):
 - To minimise interactions between the tailings and the environment to prevent acid generation, metal and solute leaching and potential impacts to surface water; and
 - For the collection and treatment of AMD and SD to prevent impacts to the receiving environment. This must include a description of the existing AMD treatment facilities and any proposed changes to the treatment facilities as tailings are reclaimed and waste characteristics change.
- Provide a detailed description of AMD management strategies and existing and proposed changes to surface water monitoring programs to monitor performance of proposed structures (e.g. liners) within the proposed TSF (E Dam).
- Identify and assess available options for improved effluent management and minimisation of wastewater discharge, according to the hierarchy set out in the [State Policy on Water Quality Management 1997, Division 2: 'Management of Point Sources of Pollution'](#).²³ The assessment must include:
 - Details of any investigations undertaken to identify options for viable reduction or beneficial reuse of effluent that can and will be implemented;
 - Justification for any proposed emission of contaminants to surface water in accordance with the principles set out in the *State Policy on Water Quality Management 1997*.
- Describe the proposed construction method(s) for any new or updated discharge infrastructure, detailing any likely disturbance to the receiving environment and appropriate management methods to minimise environmental harm.
- Provide details of monitoring proposed to be undertaken during commissioning for all existing and proposed discharges to demonstrate that treatment systems are achieving their design performance criteria and discharge water quality limits. Detail the inputs and further actions that will be implemented if expected/modelled design performance criteria and discharge water quality limits are not achieved.
- Provide details of an ambient monitoring plan to assess the impact of discharge following commissioning of any updated or new discharge infrastructure. This ambient monitoring plan must consider and complement previous ambient monitoring by generating information that can be used to identify any change in the environment that may be caused by the proposal.
- Provide an Erosion and Sediment Control Plan for the construction and operational phases of the proposal to mitigate the potential for sediment mobilisation, entrainment, and discharge from the land. The plan must be prepared in accordance with best practice principles and include as a minimum:
 - General classification of erosion potential for each land type and topography likely to be disturbed by construction and operational activities;

²³ See <https://epa.tas.gov.au/about-the-epa/policy-legislation-cooperative-arrangements/statutory-policies/state-policies-and-environment-protection-policies/state-policy-on-water-quality-management-1997>

- Indicative plans for each major phase/component of the activity, showing areas of disturbance, stockpiles and laydown areas, drainage, erosion control measures, sediment control infrastructure, stormwater discharge points, and receiving environments;
- Ongoing erosion control and rehabilitation measures to minimise the area of disturbance and potential for entrainment of sediment; and
- Where there is the potential for disturbance of PASS/ASS and volumes are estimated to exceed 100 cubic metres, provide an Acid Sulfate Soil Management Plan consistent with the [Tasmanian Acid Sulfate Soil Management Guidelines](#)²⁴ and [National Acid Sulfate Soils Guidance](#)²⁵ and include as part of the required Erosion and Sediment Control Plan.

For information about water quality management framework and evaluation criteria in Tasmania refer to [Technical Guidance for Water Quality Objectives \(WQOs\) Setting for Tasmania, August 2020](#).²⁶

6.4 Groundwater

Discuss potential impacts on groundwater quality and quantity for all phases of the proposal, including construction, operation, decommissioning and unanticipated closure, as well as existing operations and tailings storage, and any proposed changes to existing infrastructure and processes. Study methods must be presented, where appropriate.

The assessment of potential impacts of the proposal on groundwater must include the Parting Creek catchment which is identified as a sensitive receptor as it is a drinking water supply area for the township of Zeehan.

6.4.1 Existing environment

- Provide a conceptual groundwater model for regional and local aquifer flows.
- Provide details about existing groundwater monitoring and modelling, including:
 - Engineering bore logs for existing monitoring bores;
 - A map showing the location of existing groundwater monitoring and extraction bores nearest to the area impacted by the activity. Refer to [NRE's Groundwater Information Access Portal](#) where relevant.²⁷
- Identify any surface water and groundwater dependent ecosystems that may receive groundwater from areas impacted by the proposal.
- Provide details of any baseline groundwater quality monitoring undertaken.
- Include the results of monitoring in the EIS and provide separately as monitoring data and metadata following the instructions and using the Excel workbook templates or file formats provided on the [Water Quality Data Elements](#)²⁸ webpage.

6.4.2 Assessment

- Provide a preliminary hydrogeological assessment to identify potential flow paths from the proposed development area to the Parting Creek catchment, including the following as a minimum:
 - Define the hydrogeological domain that could interact with the proposed TSF (E Dam) at its maximum design capacity;
 - Identify the existing piezometric surfaces for the identified hydrogeological units based on site data (i.e., groundwater level monitoring);

²⁴ See <https://nre.tas.gov.au/agriculture/land-management-and-soils/land-and-soil-resource-assessment/acid-sulfate-soils>

²⁵ See <https://www.waterquality.gov.au/issues/acid-sulfate-soils/a-synthesis>

²⁶ See [https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20\(WQOs\)%20Setting%20for%20Tasmania.pdf](https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20(WQOs)%20Setting%20for%20Tasmania.pdf)

²⁷ See <https://wrt.tas.gov.au/groundwater-info/>

²⁸ See <https://epa.tas.gov.au/environment/water/water-quality-data-elements>

- Develop a conceptual site model based on site data that graphically represents the groundwater flow vectors (flow paths) for each hydrogeological unit;
 - Identify the vertical and horizontal flow relationship between the hydrogeological units;
 - Assess the changes in the conceptual site model based on:
 - The new TSF (E Dam) acting as a constant head source; and
 - Potential climate change impacts (e.g., changes in recharge) to potentiometric groundwater levels.
 - Identify if flow paths exist from the new TSF (E Dam) into the Parting Creek catchment; and
 - Assess potential water quality impacts on receptors based on the findings of the conceptual model.
 - Site data is required to support the assessment including information on monitoring well construction logs, hydrographs, water quality and permeability.
- If potential flow paths to receptors are identified in the preliminary hydrogeological assessment, the following additional risk and impact assessment is required:
 - Collect field data to support interpretation of permeability and fault/complex structures to inform further modelling;
 - Refine the flow vector conceptualisation by mathematically modelling the hydrogeological environment to include:
 - The point of connections/contributions from seepages to the environment, including to the Parting Creek catchment within the model domain; and
 - Recharge areas within the hydrological domain that are outside the model domain.
 - Use modelling (i.e., USGS – MODFLOW/MODPATH) to track particles originating from the proposed TSF (E Dam) and entering the environment. Identify the residency time of particles (the time taken) from the TSF (E Dam) entering the environment. Include sensitivity analysis and assessment for each point of connection (i.e., fault or permeability zone);
 - Describe the particle-tracking model in a Groundwater Modelling Report which should be appended to the EIS. The Groundwater Modelling Report should be prepared in accordance with the Australian Groundwater Modelling Guidelines (Barnett et al. 2012²⁹) and include figures of the modelled domain, as well as inputs and outputs to accompany related text;
 - Assess the groundwater-surface water connectivity and provide details on the water balance;
 - Identify and describe the groundwater baseflow contribution to the environment;
 - Compare the water quality contribution from natural groundwater inputs to receptors with tailings impacted water quality in a low rainfall scenario;
 - Discuss dilution and attenuation factors for tailings impacting discharges to groundwater and dilution with surface waters. Include expected concentrations of water quality parameters and compare them with guideline values for drinking water³⁰ and the default guideline values (DGVs). Map any associated impact zones.
 - Where the above investigations identify a high risk of water quality impacts to the Parting Creek catchment, further field based surveys and detailed monitoring must be undertaken to identify if risks can be appropriately mitigated or managed. The Board's requirements for such studies will consider previous findings and may include the use of tracer dyes to assess groundwater flow, appropriately timed ground surveys to identify groundwater springs, and pumping tests to assess fault connectivity.
 - Discuss the potential impact of the proposal, including AMD, on groundwater (quality and quantity) during the construction, operational and post closure stages with reference to the above groundwater assessments.

6.4.3 Avoidance and mitigation measures

- Provide a preliminary Groundwater Management Plan which:

²⁹ Barnett B, Townley LR, Post V, Evans RE, Hunt RJ, Peeters L, Richardson S, Werner AD, Knapp A and Boronkay A. 2012, Australian groundwater modelling guidelines, Waterlines report, National Water Commission, Canberra.

³⁰ See the *Australian Drinking Water Guidelines* at <https://www.nhmrc.gov.au/about-us/publications/australian-drinking-water-guidelines>

- Describes the measures proposed to avoid or mitigate potential adverse impacts to groundwater including:
 - Any required refurbishment or decommissioning of the existing TSFs (A, B, C and D Dams) to mitigate the potential to degrade local groundwater quality;
 - Best practice measures that will be implemented at the proposed TSF (E Dam) to minimise interactions between the tailings and the environment to prevent acid generation, metal and solute leaching and potential impacts to groundwater;
 - Best practice measures that will be implemented at the proposed TSF (E Dam) for the collection and treatment of AMD and SD to prevent impacts to the receiving environment. This must include a description of the existing AMD treatment facilities and any proposed changes to the treatment facilities as tailings are reclaimed and waste characteristics change;
 - A detailed description of other relevant AMD management strategies to mitigate potential impacts to groundwater;
 - A description of the existing and proposed changes to groundwater monitoring programs to monitor performance of the proposed structures (e.g. liners, grout curtain) within the proposed TSF (E Dam).
- Provides a map showing the location of any proposed groundwater bores.
- Provides details of a groundwater monitoring plan to monitor the impact from the proposal.
- Justifies any potential impact to groundwater in accordance with the principles outlined in the [State Policy on Water Quality Management 1997](#)³¹ and with reference to likely groundwater community values, associated guideline values and guideline values for receiving surface waters.

For information about the water quality management framework and evaluation criteria in Tasmania refer to [Technical Guidance for Water Quality Objectives \(WQOs\) Setting for Tasmania, August 2020](#).³²

6.5 Biodiversity and natural values

Discuss impacts of the proposal on biodiversity and nature conservation values (terrestrial and aquatic). Include details on how information has been collected or generated where applicable.

6.5.1 Existing environment

- Specify and map known records of terrestrial and aquatic fauna, flora, vegetation communities and habitat. Include reference to threatened species and vegetation communities listed under the Tasmanian [Threatened Species Protection Act 1995](#) (TSPA)³³ and Tasmanian [Nature Conservation Act 2002](#) (NCA)³⁴. Consideration should be given to the following:
 - The *North Barker Ecosystem Services Natural Values Assessment Report* dated July 2023 and attached to the Notice of Intent (NBES Report) mapped 0.24 ha of *Eucalyptus ovata* forest and woodland (TASVEG Code: DOV) within the proposed activity footprint. It is noted that DOV is a Threatened Native Vegetation Community (TNVC) listed under the NCA. Impacts to TNVCs should be avoided in the first instance and it is recommended that the activity footprint is designed to minimise impact on this vegetation community.
 - The NBES Report notes records of western tridentbush (*Micrantheum serpentinum*), a threatened flora species listed under the TSPA, between the rail corridor and the Murchison Highway which is within the proposed Pipeline Option B alignment. The NBES Report's recommendation to avoid impacts to this species if an alternative alignment can be selected, is supported.

³¹ See <https://epa.tas.gov.au/about-the-epa/policy-legislation-cooperative-arrangements/statutory-policies/state-policies-and-environment-protection-policies/state-policy-on-water-quality-management-1997>

³² See [https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20\(WQOs\)%20Setting%20for%20Tasmania.pdf](https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20(WQOs)%20Setting%20for%20Tasmania.pdf)

³³ See <https://www.legislation.tas.gov.au/view/html/inforce/current/act-1995-083>

³⁴ See <https://www.legislation.tas.gov.au/view/html/inforce/current/act-2002-063>

- Provide the results of terrestrial and aquatic natural values surveys undertaken by a suitably qualified person(s), in accordance with relevant survey guidelines³⁵ and the species-specific survey advice provided in the below table. Note that a field survey that is more than two years old is considered out of date due to potential natural, artificial, or seasonal changes in the environment and will require re-surveying. The date and a clear map of the survey footprint should therefore be provided for each field survey.

Species	Survey advice
<p>Freshwater snails</p> <p>The NBES Report notes that potentially suitable habitat for the Zeehan freshwater snail (<i>Beddomeia zeehanensis</i>) and Bowry Creek freshwater snail (<i>Beddomeia bowryensis</i>) was observed during the initial site assessment, and the proposal is within the potential habitat range for the Little Henty River freshwater snail (<i>Phrantela conica</i>).</p>	<p>The methodology and conclusions of the Rentails Aquatic Survey Report prepared by GHD dated 28 May 2024 are not supported because the survey effort (i.e., number of sites, locations sampled) and methods utilised are not appropriate for determining the presence/absence of freshwater snails in this instance. Benthic sampling to confirm freshwater snail presence is not supported, noting that threatened freshwater snails inhabit the underside of rocks and graze algae on the surface of instream rocks and allochthonous material (leaves, branches etc.) in the slower-flowing sections of streams and seepages in tributaries.</p> <p>It is also noted that the statement regarding ‘lower-than-expected macroinvertebrate diversity’ on p. 23 of the NBES Report does not consider the similar nature of many west coast streams in the vicinity. It is advised that the diversity described in the NBES Report is not unexpected for the area.</p> <p>New targeted freshwater snail surveys should be undertaken in accordance with the following:</p> <ul style="list-style-type: none"> • The timing of sampling is not restricted but should not be conducted following periods of heavy rainfall events. Sampling allochthonous material and embedded and loose rocks is required. Agitating this material, including rubbing surfaces with hands into a bucket filled with stream water and then filtering through a fine sieve, followed by preservation of the material in 70% ethanol is the preferred method. A minimum of 20 minutes should be spent washing stream material per sampling location. • Sampling should target a range of stream flow conditions and include feeder tributaries along the length of the stream and several locations along the length of the stream, noting that in this instance the ESRI image of the catchment suggests that the headwater tributaries are inappropriate for hosting freshwater snails. <p>Any targeted surveys for freshwater snails require a permit to take (survey only) under the TSPA³⁶.</p>

³⁵ See <https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>

³⁶ Information on applying for a permit, including application forms, can be found on the Department of Natural Resources and Environment Tasmania website: [https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/permits-for-threatened-species-wildlife-and-or-products-of-wildlife-\(for-consultants-development-related-activities\)](https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/permits-for-threatened-species-wildlife-and-or-products-of-wildlife-(for-consultants-development-related-activities))

<p>Grey goshawk (<i>Accipiter novaehollandiae</i>)</p> <p>The NBES Report notes that the project area supports 3.59 ha of high-quality nesting habitat and 186.97 ha of foraging habitat with some nesting potential. In addition, a potential grey goshawk nest was observed within the proposed activity footprint along the Dunkley Creek embankment.</p>	<p>Nesting habitat for grey goshawk includes mature wet or riparian forest at low elevations, typically near hydrographic features such as watercourses or dams, and often on east and south-east facing slopes. Grey goshawks typically nest in the largest tree in the nest stand and surrounding area.</p> <p>Grey goshawks, brown goshawks, and forest ravens are known to utilise the same nests. To accurately determine that a nest belongs to a grey goshawk, the species should be sighted at the nest. Further investigations should be undertaken to determine whether the identified nest belongs to grey goshawks.</p> <p>It is recommended that if impacts to a nest cannot be avoided, discussions with Conservation Assessments (CAS) at NRE Tas occur as early as possible in the planning stage.</p>
<p>Masked owl (<i>Tyto novaehollandiae subsp. castanops</i>)</p> <p>The NBES Report notes that trees of a suitable nesting size for masked owl (trees with >100 cm diameter at breast height (DBH) and large hollows >15 cm diameter) were observed within the proposed activity footprint, and during the initial natural values assessment on site in 2023, deployed song meters detected masked owl calls. Additional targeted acoustic surveys undertaken by NBES throughout the Dunkley Creek project area from August to September 2024 failed to detect masked owl calls. The Masked Owl Report concludes that the species <i>'is highly unlikely to occur within the Dunkley Creek project area based off the survey findings'</i> (p. 2). The NBES Report states that further survey effort is required to establish whether nesting is likely to occur in the activity footprint, including deployment of song meters, call playback and spotlighting.</p>	<p>The commitment to further survey effort is supported however, call playback is no longer considered an appropriate survey method due to the cryptic nature of Tasmanian masked owls. The species' response to broadcast calls is inconsistent and can result in a false negative survey result. There is also potential for call playback to draw masked owls out of their home range, resulting in false positive detections. A lack of masked owl response to call playback is unlikely to be accepted as evidence of absence from the landscape.</p> <p>CAS advice regarding the methodology for acoustic surveys of masked owls has been updated. The following updated survey methodology should be used for the proposed further surveys.</p> <p>Masked owls can be very discreet, and a combination of techniques should be used to minimise the risk of a nest being overlooked. Passive acoustic techniques should be utilised to determine the presence or absence of masked owl in the landscape, using the method below:</p> <ol style="list-style-type: none"> 1. Conduct two deployments of acoustic recorders for three weeks each across different seasons. The recorder deployments should occur in late-winter and late-spring to maximise the likelihood of detecting masked owl calls and potential breeding activity. The seasonal distribution of passive acoustic monitoring is intended to cover early in the species breeding season through to the start of summer, when breeding activity should have commenced. 2. Ensure recordings are made throughout the whole night, not just limited to dusk and dawn. 3. Analyse data for masked owl calls, either manually by a trained rater or using reliable software. 4. It is important to consider the detection range of recorders when drawing conclusions about the presence or absence of the species. For example, in steep terrain, thick vegetation or where environmental conditions may limit the ability to detect owl calls, recorders may need to be positioned closer together. 5. Provide an overview of the survey methodology including the total number of acoustic recorders deployed and their

	<p>locations in the landscape, the duration of each recording session and the specific hours of recording each night, and a summary of any environmental factors that might affect detection, such as weather conditions and habitat type.</p> <p>If existing records confirm the presence of masked owls, or where consultants elect to assume the species' presence in the landscape, passive acoustic monitoring may be omitted. In such cases, consultants may proceed directly to the assessment of potential nest trees using the following recommended survey methods:</p> <p><u>Scenario 1 – Masked owls detected but nesting habitat will not be impacted</u></p> <p>If passive acoustic monitoring has been undertaken in accordance with the above survey methodology and indicates the presence of masked owls in the landscape, but proposed works will not directly impact potential nest trees or occur within 150 m of a potential nest tree, it is likely that no further survey action is required. However, additional mitigation measures may be recommended.</p> <p><u>Scenario 2 – Masked owls detected, and nesting habitat will be impacted</u></p> <p>If passive acoustic monitoring has been undertaken in accordance with the above survey methodology and indicates the presence of masked owls in the landscape, and proposed works will directly impact potential nest trees or occur within 150 m of a potential nest tree, it is recommended that further actions be undertaken to assess potential nesting trees:</p> <ol style="list-style-type: none"> 1. <u>Initial inspection</u>: Inspect potential nest trees for any signs of nesting or roosting, such as such as regurgitated pellets, whitewash or feathers at the base of the tree within the tree's dripline. The absence of these signs does not rule out the presence of a nest, but their presence can strongly indicate nesting activity. Ground-based and aerial (drone) inspection methods may be used to determine whether a tree contains hollows with an entrance hole ≥ 15 cm, though these methods are <u>not</u> suitable for conducting hollow inspections. 2. <u>Observation of hollows</u>: Observe hollows from sunset to several hours after to detect owls exiting from hollows. A camera should record the hollow during the observations to minimise observer error, ideally using night vision or heat detection capabilities. 3. <u>Hollow inspection</u>: Use an action camera on a pole to inspect inside the hollow to attempt determining if the hollow has been used as either a nest or roosting hollow. 4. <u>Invasive methods</u>: If the above, less-invasive methods are inconclusive, trees should be tapped firmly using a hammer or heavy stick etc. to see if an owl is flushed from the hollow.
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	<p>5. Physical inspection: Consider physical inspection of hollows, recognising the potential dangers to the assessor and of disturbance to masked owls.</p> <p>Masked owl nests (including inactive nests) are a product of wildlife under the NCA, and CAS has never issued a permit to remove a confirmed masked owl nest and is unlikely to do so. It is recommended that if impacts to a nest cannot be avoided then discussions with CAS occur as early in the planning stage as possible.</p>
<p>Wedge-tailed eagle (<i>Aquila audax subsp. fleayi</i>) and white-bellied sea eagle (<i>Haliaeetus leucogaster</i>)</p>	<p>The commitment to undertake further eagle nest surveys in 2025 is supported, noting that the existing aerial nest search for the proposal is no longer considered current as it was undertaken over two years ago.</p> <p>Eagle nest surveys should be undertaken by a suitably qualified and experienced person(s) to determine the exact location of any known nests (as recorded on the Natural Values Atlas (NVA)) relative to the proposal, and whether other nests or potential eagle habitat exist within 1 km of the proposal. Eagle nest surveys are to be undertaken outside of the breeding season and in accordance with the EPA's <i>Guide to Eagle Nest Searching and Nest Activity Checks</i>.³⁷</p>
<p>Swift Parrot (<i>Lathamus discolor</i>)</p>	<p>The NBES Report notes that the use of the site by swift parrots for nesting is unlikely, however, it is advised that potential nesting habitat may be present in the project area and that part of the proposed activity footprint is mapped as DOV which is considered foraging habitat for the swift parrot. The clearing and or flooding of this vegetation community should be avoided in the first instance.</p> <p>If any clearance of swift parrot foraging/breeding habitat is proposed during the species breeding season, surveys to determine the species presence/absence are to be undertaken.</p>

- Identify areas or habitats of conservation significance in the vicinity of the proposal, including designated conservation areas, areas relating to the requirements of international treaties (e.g. Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA/CAMBA) and Ramsar (wetlands) Convention), or wetlands listed in Directory of Important Wetlands in Australia.³⁸
- Identify any freshwater ecosystems of high conservation management priority using the [Conservation of Freshwater Ecosystem Values \(CFEV\) database](#),³⁹ including values in the vicinity of the proposal. The specific CFEV information should be Conservation Management Priority Potential.
- Specify and map known sites of geoconservation significance or natural processes (such as fluvial or coastal features), including sites of geoconservation significance listed on the Tasmanian Geoconservation Database. Consideration should be given to the following:
 - Western Tasmanian Blanket Bogs (WTBB) are considered globally important by the Tasmanian Geoconservation Database Reference Group.

³⁷ Available at:

<https://epa.tas.gov.au/Documents/EPA%20Guide%20to%20Eagle%20Nest%20Searching%20and%20Nest%20Activity%20Checks.pdf>

³⁸ See <https://www.environment.gov.au/water/wetlands/australian-wetlands-database/directory-important-wetlands>.

³⁹ See <https://nre.tas.gov.au/water/water-monitoring-and-assessment/cfev-program>

- The NBES Report does not contain sufficient evidence as to whether or not there are likely to be any features consistent with WTBB within the project area.
- An outline of the criteria used to draw any conclusions in the NBES Report regarding WTBB, as well as photographs, descriptions, and or data should be provided in the EIS.
- Describe natural processes of particular importance for the maintenance of the existing environment (e.g. fire, flooding, etc).
- Specify and map known records of weeds, pests and diseases.

6.5.2 Assessment

Describe potential impacts of both construction and operation of the proposal on:

- Flora, vegetation communities and habitat, with particular reference to threatened species and vegetation communities listed under the TSPA and NCA, including consideration of:
 - Direct impacts, such as disturbance, clearing, excavation or flooding;
 - Indirect impacts, such as changes in hydrogeological flows, fragmentation of populations or introduction of weeds, pests or diseases; and
 - Cumulative impacts with other human activity.
- Fauna, with particular reference to threatened species listed under the TSPA and other species listed under the NCA, including consideration of:
 - Direct impacts, such as collision risks from both vehicles⁴⁰ and infrastructure, clearing or other physical changes to breeding or foraging habitat;
 - Indirect impacts, such as breeding disturbance, impacts of noise and light, changes in prey or food availability and introduction of pests or diseases; and
 - Cumulative impacts with other human activity.
- Existing reserved land that may be affected by the proposal, with reference to the management objectives of the reserve(s) and the reserve management plan(s) (if any).
- Other species, sites or areas of special conservation significance, including areas of wilderness or scientific value.
- The reserve system identified as part of the Tasmanian RFA, including high-quality wilderness areas; maintenance of forest communities under the [Permanent Native Forest Estate Policy](#)⁴¹; wildlife habitat strips under the Tasmanian Forest Practices Code 2015⁴²; and non-forest communities.
- Sites of geoconservation significance or natural processes (such as fluvial or coastal features), including sites of geoconservation significance listed on the Tasmanian Geoconservation Database (i.e., WTBB).

6.5.3 Avoidance and mitigation measures

- Describe management measures that will be implemented to avoid adverse impacts to threatened fauna, flora and vegetation communities and other natural values, including measures for the management of weeds, pests and diseases.
- Where impacts cannot be avoided, present proposed measures to minimise and mitigate adverse impacts on biodiversity and nature conservation values.

⁴⁰ An increase in night-time (between one hour before sunset and one hour after sunrise as defined by the Bureau of Meteorology) traffic on internal and nearby roads of more than 10% combined with a high abundance of Tasmanian Devils and/or Tasmanian Devil roadkill records in the Natural Values Atlas is considered significant regarding likely impacts on the Tasmanian Devil.

⁴¹ See https://www.stategrowth.tas.gov.au/about/divisions/Renewables,_Climate_and_Future_Industries_Tasmania_and_resources/forestry/legislative_and_policy_framework/permanent_native_forest_estate_policy

⁴² See <https://fpa.tas.gov.au/>

- Where there is potential for impacts to threatened aquatic fauna species, present proposed measures to mitigate the potential for seepage of contaminated water from E Dam into surrounding water courses.
- Where excavation, track building, and/or construction activities are planned near wetlands and waterways, avoidance and mitigation measures should adhere to the legislation, policies, and guidelines set out in the [Wetlands and Waterways Works Manual](#)⁴³.
- Develop a Tasmanian devil (*Sarcophilus harrisii*) and spotted-tail quoll (*Dasyurus maculatus subsp. maculatus*) Management Plan that includes a Traffic Impact Assessment for the proposal and addresses potential impacts on these species such as increased traffic movements and the clearance of denning and foraging habitat. Refer to the [Survey Guidelines and Management Advice for Development Proposals that may impact on the Tasmanian Devil \(Sarcophilus harrisii\)](#)⁴⁴ (the Devil Guidelines) for further information.
- Develop a Weed and Disease Management Plan for construction and operational phases of the proposal⁴⁵, including hygiene measures to be implemented to prevent the introduction and/or spread of weeds and diseases. The Weed and Disease Management Plan should consider the following:
 - There are 10 species including gorse (*Ulex europaeus*), blackberry (*Rubus fruticosus*), and Spanish heath (*Erica lusitanica*) which are declared pests under the *Biosecurity Regulations 2022* recorded within 500 m of the project area.
 - There are records of *Phytophthora cinnamomi* (PC) within the project area and several species likely to occur in the area are highly susceptible to PC. Adherence to strict hygiene measures are recommended. Information about practical hygiene measures to implement on development sites can be found in Appendix 2 of the [Weed and Disease Planning and Hygiene Guidelines](#). Practical information on how to minimise the risks of introducing and spreading PC can be found in the [Keeping It Clean – A Tasmanian Field Hygiene Manual to Prevent the Spread of Freshwater Pests and Pathogens](#)⁴⁶.
- Identify potential residual impacts⁴⁷.
- Discuss any offset⁴⁸ proposed for residual impacts, including likely benefits from such an offset.
- Discuss rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity, including any proposed seed collection and progressive rehabilitation program. Rehabilitation within the Renison Bell Regional Reserve and Parting Creek Regional Reserve should be in accordance with reserved land management objectives under the *National Parks and Reserve Management Act 2002*.

6.6 Air quality

The air quality assessment should discuss potential impacts of the proposal on the local and regional air environment during construction and operational phases, including methodology where appropriate. The air quality assessment should also provide evidence to demonstrate that the activity will not cause environmental nuisance or harm.

⁴³ See <https://nre.tas.gov.au/conservation/flora-of-tasmania/tasmanias-wetlands/wetlands-waterways-works-manual>

⁴⁴ See <https://nre.tas.gov.au/Documents/Devil%20Survey%20Guidelines%20and%20Advice.pdf>

⁴⁵ Information about controlling the introduction and spread of weeds and the development of weed and disease management plans can be found in Section 4 of the [Weed and Disease Planning and Hygiene Guidelines](#) at <https://nre.tas.gov.au/invasive-species/weeds/weed-hygiene/weed-and-disease-planning-and-hygiene-guidelines>

⁴⁶ See <https://nre.tas.gov.au/invasive-species/weeds/weed-hygiene/keeping-it-clean-a-tasmanian-field-hygiene-manual>

⁴⁷ As defined in Appendix A of these Guidelines.

⁴⁸ See Appendix A of these Guidelines under Residual Impacts.

6.6.1 Existing environment

- Provide a location map that includes the activity area and the location of nearest receptors.
- Describe the existing environment, including climatic/meteorological conditions, terrain, land use and air quality in the vicinity of all the proposed activities.
- Provide information on any existing monitoring of dust and/or particulate matter at the existing Renison Mine site.

6.6.2 Assessment

- Provide a site map showing the locations and names of all potential sources of atmospheric emissions from the proposed activities, including tailings reclamation from the existing TSFs (A, B, C and D Dams) and decommissioning of the existing TSFs, construction and operation of the proposed tailings reprocessing plant, TSF (E Dam), pipeline(s) and associated infrastructure, as well as loading, unloading and transport of materials.
- Provide details on the materials to be handled at the site that have potential to generate odour and other emissions to air, including their chemical composition.
- Describe all potential sources (both point and fugitive) of atmospheric emissions from tailings reclamation and reprocessing. Consideration should be given to all phases of the proposed activities including decommissioning of the existing TSFs (A, B, C and D Dams).
- Discuss the potential air quality impacts associated with the proposed activities, including tailings reclamation from the existing TSFs (A, B, C and D Dams) and decommissioning of the existing TSFs, construction and operation of the proposed tailings reprocessing plant, TSF (E Dam), pipeline(s) and associated infrastructure, as well as loading, unloading and transport of materials. Consider the composition of the air emissions generated.
- Describe and assess the potential impacts of the atmospheric emissions from the proposed activity on the environment in the context of the existing environment (local meteorology, terrain) and land use (particularly proximity to sensitive receptors).
- Describe climate change projections relevant to the activity area, and how future climate conditions may alter the local meteorology and impact on air emissions from the proposal.
- Demonstrate that the assessment is consistent with the requirements of the [Tasmanian Environment Protection Policy \(Air Quality\) 2004](#)⁴⁹ and any supplementary documents, including the [Air Pollutant Design Criteria - EPA Board Statement](#).⁵⁰

6.6.3 Avoidance and mitigation measures

- Provide information on the mitigation measures to be implemented for the proposed activities to minimise potential impacts.
- Describe dust management measures to be implemented during the construction phase of the proposed TSF (E Dam). These may include but are not limited to, watering exposed areas, stabilising stockpiles, minimising unsealed surface areas, using wind barriers, applying materials handling practices such as minimising drop heights during loading/unloading, using enclosed conveyors and covering trucks for materials transport, controlling equipment emissions and scheduling construction activities to avoid unfavourable weather conditions.
- Describe the measures to be implemented to reduce dust movement from the site, particularly during unfavourable meteorological conditions. These may include but are not limited to, watering or sealing roads, covering truck loads, reducing vehicle speeds, road surfacing and maintenance, enclosures, water sprays, windbreaks, revegetation, and stabilisation. Consideration should be given to all phases of the proposed activities.

⁴⁹ See https://epa.tas.gov.au/Documents/EPP_Air_Quality_2004.pdf

⁵⁰ See <https://epa.tas.gov.au/Documents/Board%20Statement%20-%20Update%20to%20Air%20Pollutant%20Design%20Criteria%20used%20in%20the%20EIA%20Process%20-%20January%202022.pdf>

- Describe proposed monitoring of dust and/or particular matter for the proposal. Consideration should be given to the installation of dust monitoring instruments and a meteorological monitoring station capable of measuring and recording real-time wind speed and direction, to inform decisions on applying appropriate mitigation measures.
- Discuss the ongoing requirement for an adequate water supply that considers both current and future climate conditions, including the potential for more frequent dry periods. Describe measures to be implemented to avoid and/or mitigate any other atmospheric emissions from the proposal that may cause environmental nuisance or harm at or beyond the activity area boundary.

6.7 Noise emissions

6.7.1 Existing environment

- Provide a map showing the location of all major sources of noise and the closest noise-sensitive premises in the vicinity of the boundary of the proposed activities.
- Provide a list of nearby identified residences and other noise-sensitive premises in the vicinity of the boundary of the activity.

6.7.2 Assessment

- Describe all major sources of noise, including associated
 - Sizes and power ratings;
 - 1/3 octave source noise data (linear/C-weighted and A-weighted) to assess for low frequency and tonal noise;
 - Noise attenuation features; and
 - Hours of operation.
- Analyse the potential for noise emissions (during both construction and operational phases) to cause nuisance for nearby land users, particularly at noise sensitive premises⁵¹. When assessing nuisance at noise-sensitive premises, discuss the [Environment Protection Policy \(Noise\) 2009](#)⁵² and the existing acoustic environment.
- Discuss noise-related environmental impacts associated with current and altered traffic flows on other road users and on residences adjacent to roads.
- Discuss the potential for noise emissions to affect terrestrial, marine and freshwater wildlife and livestock.

6.7.3 Avoidance and mitigation measures

- Describe attenuation measures that will be implemented to avoid or mitigate impacts of noise emitted by the proposal, as relevant.
- Demonstrate that the proposal is consistent with environmental performance requirements, including any identified in the [Environment Protection Policy \(Noise\) 2009](#).⁵²

6.8 Waste management

Discuss the impacts of waste generated by the proposal, during construction and operation.

6.8.1 Existing environment

- Describe the existing environment in relation to the impact of waste generated by the activity.

⁵¹ Noise-sensitive premises are 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.’

⁵² See https://epa.tas.gov.au/Documents/EPP_Noise_2009.pdf

6.8.2 Assessment

- Describe the source, nature and quantities of all general wastes likely to be generated by the proposal (liquid, gaseous, solid or other), including general refuse and by-products from the various stages of the process.
- Describe the methods and facilities proposed to collect, store, reuse, treat or dispose of each general waste stream. Describe collection or other maintenance requirements where relevant.
- Describe the source, nature, quantity, and method of treatment, storage and disposal for each controlled waste arising from the proposal.⁵³ Describe collection or other maintenance requirements where relevant.

6.8.3 Avoidance and mitigation measures

- Demonstrate that any waste management measures follow the following hierarchy of waste management, arranged in decreasing order of desirability:
 - Avoidance,
 - Reuse,
 - Treatment/stabilisation for reuse,
 - Recycling,
 - Energy recovery,
 - Repository storage (for future treatment/recovery),
 - Treatment/stabilisation for disposal,
 - Disposal/permanent containment.

For information on the landfill levy and reporting requirements for landfills or resource recovery facilities under the *Waste and Resource Recovery Act 2022* and Regulations, refer to [Waste and Resource Recovery, Department of Natural Resources and Environment Tasmania website.](#)⁵⁴

6.9 Dangerous goods and environmentally hazardous materials

Dangerous goods and environmentally hazardous materials are 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. This includes fuels, oils, waste and chemicals. Discuss the potential impacts of dangerous goods and environmentally hazardous substances used in or generated by the proposal. The discussion should:

- Describe 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](#))⁵⁵ that will be used during the construction and operation of the proposal.
- Provide a map showing the location of temporary and permanent storage areas for fuels, oils, and other dangerous goods or chemicals.
- Detail measures to be adopted to prevent or control any accidental releases of dangerous goods and environmentally hazardous materials. Examples include bunding or spill trays.
- Provide contingency plans for when control measures fail, equipment breaks down or accidental releases to the environment otherwise occur. Include detail on proposed emergency and clean-up measures and notification procedures. Identify any safety management requirements for the protection of human health and safety where incidents may affect the community.

⁵³ Controlled waste is defined in EMPCA and associated regulations. A non-exhaustive listing of categories of controlled waste can be found at <https://epa.tas.gov.au/business-industry/regulation/waste-management/controlled-waste>

⁵⁴ See <https://nre.tas.gov.au/environment/waste-and-resource-recovery>

⁵⁵ See <https://www.ntc.gov.au/codes-and-guidelines/australian-dangerous-goods-code>

6.10 Potentially contaminated material

Discuss identification and management of contaminated land or material which may be present within and adjacent to the proposal site, including the following:

- An assessment of site contamination, which must be conducted in accordance with the [National Environment Protection \(Assessment of Site Contamination\) Measure 1999](#)⁵⁶ by a consultant who holds Site Contamination Specialist certification under the Certified Environmental Practitioner Scheme (CEnvP(SC)).
- Detail of proposed construction methodology, footprint, extent of disturbance and how this may interact with contaminated material.
- Analysis of receptors and risk to receptors due to disturbing potentially contaminated material, during and after construction (e.g., from scouring of sediment due to altered flow patterns).
- Potential consequences of disturbance (i.e., potential impact/risks), and evaluation of their significance.
- Describe proposed management and mitigation measures for minimising impacts of contaminated material during construction and long-term use/operation, including storage, monitoring and disposal as relevant.

For legislative and policy requirements refer to [National Environment Protection \(Assessment of Site Contamination\) Measure 1999](#)⁵⁶ and the [Environmental Management and Pollution Control \(Waste Management\) Regulations 2020](#).⁵⁷

6.11 Greenhouse gas emissions, ozone depleting substances, and climate change

Discuss potential impacts of the proposal in relation to greenhouse gases, ozone-depleting substances, and climate change. The discussion should be proportionate to the significance of the potential impacts.

- Describe the direct and indirect effects of the proposal on greenhouse gas production and ozone-depleting substances, as well as any associated benefits of the proposal.
- Provide an inventory of projected scope 1, scope 2 and total greenhouse gas emissions,⁵⁸ energy production, and energy consumption for a year of operation. Describe the methods used to develop the inventory⁵⁹. Discuss potential annual variation that may occur.
- Provide an estimate of scope 3 emissions that may occur as a consequence of the proposal.
- Estimate 'whole of life' greenhouse gas emissions for the proposed development. Include details of the methodology used.
- Consider any carbon dioxide generated as a result of the use of products to treat ASS⁶⁰ (both in production and transport as well as via spreading and neutralisation reactions) and tailings.

⁵⁶ See <https://www.legislation.gov.au/F2008B00713/latest/text>

⁵⁷ See <https://epa.tas.gov.au/about-the-epa/policy-legislation-cooperative-arrangements/acts-regulations/empca/waste-management-regulations>

⁵⁸ More information on categorising emissions can be found at <https://www.cleanenergyregulator.gov.au/NGER/About-the-National-Greenhouse-and-Energy-Reporting-scheme/Greenhouse-gases-and-energy>

⁵⁹ Calculators are available on the Australian Government Clean Energy Regulator website. See <http://www.cleanenergyregulator.gov.au/NGER/Forms-and-resources/Calculators#Emissions-and-Energy-Threshold-Calculator-202021-and-user-guide>

⁶⁰ Refer to the [Tasmanian Acid Sulfate Soil Management Guidelines](#) for more information.

- Demonstrate that the development will use cost-effective, best practice measures to minimise future greenhouse gas emission, including consideration of water stewardship and energy efficiency of the proposed mine water system⁶¹.
- Detail measures proposed to minimise emissions and describe the anticipated effectiveness of these measures. Where less emissions-intensive options are not adopted, provide sufficient justification and/or mechanisms to offset greenhouse gas emissions.
- Describe the potential impacts of climate change upon the proposal, including consideration of life-of-mine tailings management. The impacts of severe climatic events including storms and wildfire on the proposal should also be considered. Where relevant, provide proposed measures to minimise or mitigate potential climate change impacts.
- 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 \(State Action\) Act 2008](#) (Tas),⁶² [Tasmania's Climate Change Action Plan 2023-25](#)⁶³ and the [Climate Change Act 2022](#) (Commonwealth).⁶⁴

Note: Proponents must determine whether they are required to report to the Commonwealth under the [National Greenhouse and Energy Reporting Act 2007](#).⁶⁵

6.12 Socio-economic issues

Discuss the social and economic impacts of the proposal. This discussion may:

- Include 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).
- Provide a summary of operational expenditures and revenues.
- Describe 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.
- Describe impacts on upstream/downstream industries, both locally and for the State.
- Detail the extent to which raw materials, equipment, goods and services will be sourced locally.
- Provide 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.
- Describe community demographic impacts (changes to cultural background, occupation and incomes).
- Describe impacts on land values, and demand for land and housing.
- Describe impacts on the local, regional, state and national economies.
- Detail any publicly funded subsidies or services to be relied upon for the construction or operation of the proposal.
- Detail 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 be adequately

⁶¹ Leading practice handbooks for sustainable mining can be found at <https://www.industry.gov.au/publications/leading-practice-handbooks-sustainable-mining>

⁶² See <https://www.legislation.tas.gov.au/view/html/inforce/current/act-2008-036>

⁶³ See https://recfit.tas.gov.au/climate/climate_change_action_plan

⁶⁴ See <https://www.legislation.gov.au/Details/C2022A00037>

⁶⁵ See <https://www.legislation.gov.au/Details/C2007A00175>

supported by 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 need more comprehensive analysis of economic and social benefits, to allow the Board to evaluate both the benefits and adverse impacts of the proposal. Methods used to model social and economic impacts should be described where relevant. A description of how the local community has been consulted to determine its needs and aspirations in relation to the proposal should also be included. A social impact assessment and/or economic impact assessment may be required.

6.13 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 Sustainable Timber Tasmania Fire Management Plan and a Parks and Wildlife Service Fire Action Plan for relevant districts.

6.14 Infrastructure and off-site ancillary facilities

Discuss potential environmental impacts of the proposal on any significant off-site infrastructure or facilities (including increased use of existing infrastructure, such as roads, ports and quarries). Identify measures proposed to avoid and mitigate any possible adverse impacts. Assess the likely overall impacts after 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. Cross-reference to other sections where relevant.

7. Monitoring and review

Outline any proposed monitoring, review and reporting programs for the proposal. Include a table of proposed monitoring locations, parameters and frequencies, and a map showing the location of all monitoring sites.

Monitoring, review and reporting programs should be designed to:

- Assess compliance with the proposed management measures;
- Assess compliance with emission standards and other identified performance requirements;
- Assess the effectiveness of the performance requirements and environmental safeguards in achieving environmental quality objectives; and
- Assess the extent to which the potential impacts described in the EIS have eventuated.

8. Decommissioning and rehabilitation

Describe the proposed stages of site decommissioning and rehabilitation, including any proposed seed collection and progressive rehabilitation, that will follow construction activities and occur upon cessation of the proposed activities.

9. Management measures table

Provide a summary table listing all management measures detailed throughout the EIS. Each measure must include a reference number, must be an unambiguous statement of intent, must specify when it is to be implemented (including whether it is to be implemented during construction, operation, maintenance or other phases) and must include a cross-reference to where the measure is described in the EIS.

10. Conclusion

Summarise the proposal and present a balanced overview of its net impacts. Draw together the critical environmental, social and economic impacts. Evaluate the extent to which negative impacts can be avoided, mitigated, remediated or compensated and positive impacts promoted and sustained.

Describe how the proposal meets and furthers the objectives of relevant legislation, policies, plans and strategies. Itemise the RMPS and EMPCS objectives and comment on how the proposal addresses each of the objectives.

11. References

Provide details of authorities consulted, reference documents and other information sources, using a consistent referencing style.

12. Appendices

Detailed technical information which supports the EIS should be included as appendices. The salient features of the appendices should be included in the main body of the EIS. Technical content of appendices must be consistent with information presented in the EIS itself, unless inconsistencies are carefully explained. The EIS may not be accepted where unexplained inconsistencies exist.

Appendix A: General principles for assessing environmental impacts

This Appendix summarises general principles for assessing environmental impacts in EIS documents prepared in accordance with EMPCA.

General Approach

When assessing environmental impacts in an EIS, the proponent should:

- Present information in a clear, well-structured manner appropriate to the audience of the EIS.
- Avoid duplication.
- Base assessments and evaluations on scientifically supportable, referenced data.
- Describe methodologies used and provide supporting research and information wherever relevant.
- State any scientific assumptions, simplifications, or judgements, and define uncertainties.
- Describe impacts and their mitigation to a level of detail that is proportionate to potential consequences and to what extent they can be controlled.

Impact assessment

Impact assessment involves the identification and characterization of the effects of a proposal. When undertaking impact assessment, the proponent should:

- Explain methodologies used to identify and characterise impacts.
- Clearly state the impacts that are expected to result from the development in terms of the aspect of the proposal involved and the environmental receptor affected.
- Characterise those impacts in terms of:
 - The magnitude of impacts, quantified where possible, including spatial extent and timeframe;
 - The vulnerability of the affected environmental receptors to harm or nuisance;
 - Sources of the impacts and pathways by which the impact may occur;
 - Probability of occurrence (if not 100%);
 - The range of scenarios in which the impact may occur, including plausible worst-case consequences;
 - Reversibility of impacts;
 - Any predicted indirect effects; and
 - Any aspects of other proposals examined cumulatively.
- With reference to the project description and alternatives described in the EIS, state what measures to avoid or reduce impacts have been considered as part of this assessment, and which of these have been incorporated into the proposal.

Impact evaluation

Impact evaluation is the determination of the significance of impacts. Proponents should support conclusions about the significance of impacts using a structured argument that clearly describes the magnitude of the impact, the sensitivity of the affected receptors, and how they relate.

Mitigation and Monitoring

Mitigation (planning and design considerations, pollution control technology and management practices) and monitoring are measures additional to those considered during the impact assessment to reduce the impact of the proposal. In presenting mitigation and monitoring the proponent should:

- Describe the measures proposed;
- Describe how mitigation measures function to avoid or reduce the impacts;

- Explain how measures accord with existing guidance, accepted practice or best practice environmental management as defined in EMPCA;
- Discuss contingencies for the breakdown/malfunction of equipment or processes;
- Describe any anticipated impacts resulting from the mitigation actions and how these will be addressed; and
- Identify where control measures are to be carried out, operated and/or maintained by a third party, and how this will be achieved.

Residual impacts

Residual impacts are those that remain after all proposed avoidance and mitigation measures have been taken into account. When assessing residual impacts, the proponent should:

- Revisit the first evaluation of impact, taking into account the effects of the measures to reduce the magnitude of the impacts and present a revised statement of significance, and
- Where required, identify appropriate actions that will offset impacts, based on the relevant guidelines.⁶⁶ Offset actions must present a measurable, relevant and ongoing net benefit which would not otherwise have been realised, and which is not accounted for by any other project or proposal.

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⁶⁶ Guidelines include Appendix 4: General Offset Principles from the Guidelines for Natural Values Surveys – Terrestrial Development Proposals, see <https://nre.tas.gov.au/Documents/Guidelines%20for%20Natural%20Values%20Surveys%20related%20to%20Development%20Proposals.pdf> and Offset Guidelines for Impacts to Threatened Eagles from Wind Farm Developments, see <https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/offset-guidelines-for-impacts-to-threatened-eagles-from-wind-farm-developments>

Appendix B: Other issues and agency contacts

In addition to a permit under LUPAA and EMPCA, there may be other legal requirements to allow your proposal to proceed, including other permits, licences or landowner consent. You may also need to contact other Government agencies to obtain information for the purpose of assessment.

Your proposal may have been referred to other agencies by EPA. If assessments or approvals outside of the Board's responsibilities are required, you should engage with the respective agency to progress them. The following list identifies some of the agencies you may need to contact:

Conservation Assessments

Department of Natural Resources and Environment Tasmania
Telephone: (03) 6165 4396
Email: conservationassessments@nre.tas.gov.au
Website: www.nre.tas.gov.au/conservation

Purpose: Natural values including flora, fauna, and geoconservation values, and permits for the taking of threatened species, wildlife and/or products of wildlife.

Heritage Tasmania

Department of Natural Resources and Environment Tasmania
Telephone: (03) 6165 3700
Email: enquiries@heritage.tas.gov.au
Website: www.heritage.tas.gov.au

Purpose: Historic cultural heritage, including State-level site listings, impacts and permits as required under the Historic Cultural Heritage Act 1995. Where works are proposed in or near 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 Tasmania

Department of Natural Resources and Environment Tasmania
Telephone: 1300 487 045
Email: aboriginal@heritage.tas.gov.au
Website: www.aboriginalheritage.tas.gov.au

Purpose: Aboriginal heritage, including desktop assessment, artefact survey requirements, permits and advice.

Parks and Wildlife – Property Services

Department of Natural Resources and Environment Tasmania
Telephone: (03) 6169 9015
Email: PropertyServices@parks.tas.gov.au
Website: www.parks.tas.gov.au

Purpose: Impacts on parks and reserves managed by Parks and Wildlife, or Crown land.

Agriculture and Water

Department of Natural Resources and Environment Tasmania

Telephone: 1300 368 550

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

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

Purpose: Water licences and works impacting natural waterway flow (e.g. dams or fords).

Transport Services

Department of State Growth

Telephone: (03) 6166 3369

Email: permits@stategrowth.tas.gov.au

Website: www.transport.tas.gov.au

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

Mineral Resources Tasmania

Department of State Growth

Telephone: (03) 6165 4800

Email: info@mrt.tas.gov.au

Website: www.mrt.tas.gov.au

Purpose: Mining Leases.

Appendix C: Example of project description summary table

Location and Planning Context

Location	State the address of the site, and CTs and PIDs (as applicable) for all titles on which the activity will take place.
Land zoning	Describe the land zoning of the site and surrounds. If rezoning of the site is required, provide details.
Land tenure	Provide the land tenure of the proposal.
Use Class and Permissibility	If a permit is required under LUPAA, provide the Use Class of the proposed activity and Permissibility of the activity with reference to the relevant Planning Scheme.

For extractive industries only, delete if not required

Mining lease	
Lease area	
Bond	State the amount of any bond required by MRT (for extractive industries)

Existing site

Land Use	Describe the existing land use of the site and surrounds.
Topography	Describe the topography of the site and surrounds.
Geology	Describe the geology of the site, including the likely presence of potentially acid forming (PAF) material. Describe any geoconservation values on or near the site, e.g. karst.
Soils	Describe the potential to encounter acid sulfate soils and or contaminated soil (from past activities, as relevant).
Hydrology	Describe groundwater and surface drainage (including waterways, lakes, wetlands and coastal areas) Describe the waterbodies and aquatic values on site and in the surrounding area. State the distance from the activity to the nearest waterbody.
Natural Values	List the threatened fauna, flora and vegetation communities, including potential habitat for any such species, that are known to occur on or near the site (use the Natural Values Atlas, TASVEG 4.0 or results of any relevant survey). State the vegetation types on and near the site.
Potential Hazards	Provide a brief assessment of the vulnerability of the site to natural hazards (e.g. flooding, seismic activity, fire, landslips or strong winds) or climate change.

Local Region

Climate	State the annual rainfall and predominant wind direction.
Surrounding land zoning, tenure and uses	Describe the surrounding land use, distance to the nearest residences in other ownership, note any conservation reserves or recreation areas in the area, and provide a coastal description if the coast is nearby.
Species, sites or areas of conservation significance	Provide 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).

Proposed Infrastructure

Major equipment	List all existing and proposed plant, machinery, or other major equipment (distinguish between existing and proposed).
Other infrastructure	List the existing and proposed buildings, structures, access roads, internal haul roads (can refer to the Site Plan) (distinguish between existing and proposed).

Inputs

Water	Include quantities and characteristics.
Energy	Include quantities and characteristics.
Other raw materials	Include quantities and characteristics.

Wastes and Emissions

Liquid	Include quantities and characteristics.
Atmospheric	Include quantities and characteristics.
Solid	Include quantities and characteristics.
Controlled wastes	Include quantities and characteristics.
Noise	Include major sources of noise emissions.
Greenhouse gases	Provide a brief description of changes to greenhouse gas emissions that will be caused by the proposal.

Construction, Commissioning and Operations

Proposal timetable	Provide a brief timetable outlining the proposed timeframe(s) for construction, commissioning and commencement of operations. Include significant milestones if applicable.
Construction hours	e.g. xx-xx Monday to Friday xx-xx Saturday
Operating hours (ongoing)	e.g. xx-xx Monday to Friday xx-xx Saturday

Other Key Characteristics

Other	Describe any additional characteristics relevant to the proposal/environment that are likely to provide important context as part of this summary.
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ENVIRONMENT PROTECTION AUTHORITY