Annex E Construction Environmental Protection Requirements

Construction and Maintenance

Environment Protection Requirements

Sassafras Wesley Vale Irrigation Scheme Augmentation

EPBC 2023/09666

Tasmanian Irrigation

1. Purpose and structure

This document has been developed as an appendix to both the Preliminary Documentation and the Construction Environmental Management Plan (**CEMP**) for the Sassafras Wesley Vale Irrigation Scheme Augmentation project (**SWISA**). The purpose of this document is to provide Tasmanian Irrigation (**TI**) environmental management requirements for the construction and maintenance (involving capital works) of the project.

The Environment Protection Requirements (**EPRs**) set out in Section 2 provide the minimum management and mitigation measures to protect Matters of National Environmental Significance (**MNES**) and the broader environment during construction and maintenance of the project. Management and mitigation measures relevant to the operation of the project (i.e. irrigation activities) are provided in a separate Operational Environmental Management Plan (**OEMP**).

Words printed in **bold** in this document are defined in the glossary and definitions section of the **CEMP**. The accountability column of the **EPRs** must be referenced against Table 5.1 of the **CEMP** which specifies roles, responsibilities and minimum qualifications. Whilst each **EPR** may specify accountability, **TI**, as the approval holder, remain ultimately accountable for compliance with the approval conditions.

The **EPRs** have been developed by **TI** based on relevant industry guidelines and standards, as well as the impact assessments undertaken for the project.

The following **EPRs** apply for the project:

1. Flora and fauna
   1A. Tasmanian wedge-tailed eagle
   1B. Burrowing crayfish
   1C. Green and gold frog
   1D. Australian grayling
   1E. Den management (Tasmanian devil, spotted quoll, eastern quoll)
   1F. Tasmanian devil management – [redacted]
   1G. Hollow-bearing tree management (masked owl, swift parrot, blue-winged parrot)
   1H. Roadkill management plan
   1I. Threatened flora and vegetation communities
2. Weeds, pests, and disease
3. Watercourses
4. Sediment and erosion
5. Noise and vibration
6. Air quality
7. Heritage
8. Environmentally hazardous materials
9. Bushfire risk
10. Waste
11. Construction traffic
12. Contaminated soil and acid sulphate soil
13. Rehabilitation and reinstatement

The **EPRs** identify additional management plans to be prepared by the contractor based on the specific site conditions and construction methodology (post-approval of the project), however, all requirements necessary to protect **MNES** are specified in the **EPRs**. The required management plans are summarised in Section 3.

The **EPRs** must be applied through the **CEMP**, in conjunction with the site-specific Construction Environmental Plans (**CEPs**) and Construction Environmental Tables (**CETs**) presented in Section 4. An overview of the **CEPs** and **CETs** is shown in **Figure 1-1**.

Where there is a discrepancy between the **EPRs** and the site-specific measures outlined in the **CEP**/**CET**, the site-specific measure shall prevail. Any additional management and mitigation measures identified in the management plans to be prepared by the contractor will be incorporated into the **CEMP**, **CEPs** and **CETs** as required.

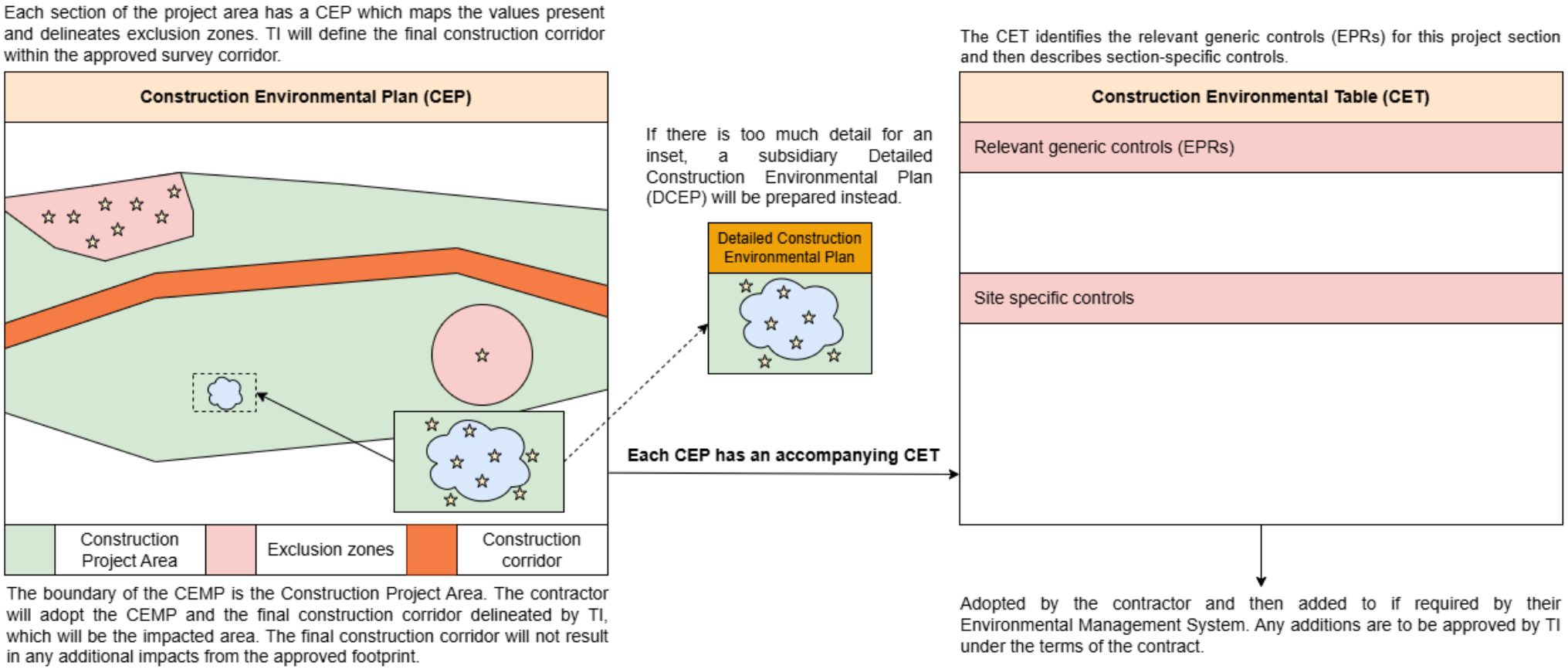

Figure 1-1 Overview of CEPs and CETs

2. Environment Protection Requirements

As outlined in Section 1, the **EPRs** presented in this section have been developed by **TI** based on relevant industry guidelines and standards, as well as the impact assessments undertaken for the project, including:

- Sassafras-Wesley Vale Irrigation Scheme Augmentation EPBC Preliminary Documentation Report (BMT, 2024)
- Sassafras-Wesley Vale Irrigation Scheme Augmentation Natural Values Assessment (North Barker Ecosystem Services, 2024)
- Sassafras Wesley Vale Irrigation Scheme Augmentation Project Aboriginal Heritage Assessment Report (CHMA, 2023)
- Sassafras Wesley Vale Irrigation Scheme Augmentation Project Historic Heritage Assessment Report (CHMA, 2023a)
- Sassafras Wesley Vale Irrigation Scheme Geotechnical Investigation (Pitt & Sherry, 2023)
- Preliminary Traffic Assessment Sassafras-Wesley Vale Irrigation Scheme Augmentation Project (Ratio, 2024)
- Tasmanian devil impact assessment, Sassafras Wesley Vale Irrigation Scheme Augmentation, Latrobe (envirodynamics, 2024)
- Sassafras-Wesley Vale Irrigation Scheme Augmentation, Tasmania. Australian Grayling (*Prototroctes maraena)* Species Impact Assessment (elgin associates, 2024)

The guidelines and standards referenced by the **EPRs** are summarised below:

- Approved Management Method (**AMM**) for the Disposal of Clean Fill Type 1 and Type 2 (EPA Tasmania, 2024)
- Best Practice Guidelines for Wildlife Rehabilitation (DPIPWE, 2021)
- Bunding and Spill Management Guidelines (EPA Tasmania, 2015)
- Erosion and Sediment Control – the fundamentals for development in Tasmania (TEER, 2023)
- Fauna Technical Note 1: Eagle Nest Searching, Activity checking and Nest Management (FPA, 2024)
- Guidelines for Safe and Effective Herbicide Use Near Waterways (DPIPWE, 2012)
- Hygiene protocols for the control of diseases in Australian frogs (Murray, et al., 2011)
- Information Bulletin No. 105 – Classification of Contaminated Soils (EPA Tasmania, 2018)
- Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens (NRM South, 2010)
- Municipal plant species list – A guide of appropriate plant species for propagation and restoration NRM South and The Understorey Network, 2014)
- Noise Measurement Procedures Manual (EPA Tasmania, 2008)
- Revegetation project, a best practice guide for Tasmania (NRM North, 2016)
- Tasmanian Acid Sulphate Soil Management Guidelines (DPIPWE, 2009)
- Tasmanian Washdown Guidelines for Weed and Disease Control (DPIPWE, 2004)
- Unanticipated Discovery Plan – Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania (AHT, 2024)
- Weed and Disease Planning and Hygiene Guidelines (DPIPWE, 2015)
- Survey guidelines and management advice for development proposals that may impact the Tasmanian devil (*sarcophilus harrisii*) (NRE Tas, 2023)
- Marsupial pouch checking guide (Animal Rescue Cooperative, ND)
- Default Guideline Values for Aquatic Ecosystems of the Mersey Catchment (EPA, 2021)
- TASVEG VCA Manual (DPIPWE, 2020)

- Native Vegetation Revegetation planting standards – Guidelines for establishing native vegetation for net gain accounting (Department of Sustainability and Environment (Vic), 2006)

EPR 1 – Flora and fauna

EPR	Mitigation measure	Accountability
1.1	The final **construction corridor** (as identified by **TI**) is to be clearly demarcated on site by the Contractor. Spatial data for the **construction corridor** will be made available to the Contractor by **TI**. There will be no impacts outside of the **construction corridor**. Information on impact limits will be included in the site induction.	Contractor
1.2	Areas indicated on **CEPs** as **exclusion zones** (or known threatened flora and fauna locations immediately adjacent to the **construction corridor**) will be clearly marked by flagging and signage in the **construction corridor** prior to construction commencing. **Exclusion zones** will be verified on site by a **suitably qualified ecologist**. Spatial data for the **exclusion zones** will be available to the Contractor. There will be no impacts inside an **exclusion zone**. Information on how **exclusion zones** are marked will be included in the site induction, and **exclusion zones** relevant to the day's work will be identified to all relevant project personnel in pre-start meetings.	Contractor's **Suitably qualified ecologist**
1.3	The **construction corridor** will be inspected by the Contractor and **TI**'s project representative prior to construction commencing, and after the **exclusion zones** have been demarcated, to ensure that the locations of threatened flora and fauna habitat are understood. Construction is not to commence until **TI**'s project representative has approved the location of the corridor and any **exclusion zones**.	Contractor**/TI's project representative**
1.4	Tree protection zones (**TPZs**) will be delineated by markers, construction tape webbing or other barriers by the Contractor's Project Environmental Advisor. Equipment, plant, vehicles, or material must not be stored within the **TPZ**. Where a full **TPZ** cannot be maintained, a **suitably qualified arborist** will be consulted to assess viability of keeping the tree. In assessing the viability, the **suitably qualified arborist** will: • Prepare an assessment report of the tree/s to be impacted; • Supervise and document all works carried out within the TPZ of retained trees; and • Conduct post-construction inspection of trees to determine whether incursion will lead to loss. Impacted trees are to be retained to the maximum extent possible to preserve the nesting value for relevant species.	Contractor's Project Environmental Advisor **/ Suitably qualified arborist**
1.5	The environmental site induction, to be provided by **TI,** must include information on environmental permits obtained for the project (including relevant conditions). No impacts to native wildlife (including, but not limited to direct impact, removal of a nest/den/ burrow, and relocation of an individual) listed under the Tasmanian Threatened Species Protection Act 1995 or under Schedule 1, 5 or 8 of the Tasmanian Nature Conservation (Wildlife) Regulations 2021 (Tasmanian Nature Conservation Act 2002) are permitted without a permit approved	Contractor**/TI**

EPR	Mitigation measure	Accountability
	under the relevant legislation." No impacts to **MNES** may occur unless specified in the EPBC approval (EPBC 2023/09666).	
1.6	Vegetation clearance must be minimised as much as possible within the **construction corridor**. Blanket clearing of vegetation within the **construction corridor** is not permitted under any circumstances and a staged approach must be taken in consultation with **TI** project representative.	Contractor
1.7	Existing roads and tracks, including those through **exclusion zones** may be used to access the **construction corridor** if there is no departure off the existing formed road. Vehicles must not be parked in **exclusion zones**. The edge of any road through an exclusion zone must be clearly defined with flagging tape and signage.	Contractor
1.8	Any previously unidentified habitat elements that support fauna will be subject to the application of the relevant **EPRs** or, if no **EPR** applies, managed in consultation with the **TI**'s project representative. Works with the potential to disturb fauna habitat must cease until appropriate **EPRs** or other controls are applied.	Contractor **/** Contractor's Project Environmental Advisor **/TI's project representative**
1.9	To minimise the risk of entrapment and injury to fauna, the following measures must be implemented: • Measures will be put in place such that if fauna enter any trench, there must be enough ramps (with slopes less than 45 degrees) placed within the trench to allow animals to readily vacate the trench; • The period trenches are open must be minimised to the maximum extent; • Trenches must be progressively backfilled to cover each day's laid pipe; • Open trenches must have effective wildlife proof fencing overnight or while operations are not in progress; • The ends of pipe within trenches or stored pipe must be closed prior to cessation of works nightly to ensure that fauna cannot enter the pipe; • Inspection of trenches prior to commencement of works each morning must occur and removal of wildlife from the trench by appropriately trained personnel. Appropriately trained personnel must be approved by **TI**; and • Open trenches in sensitive areas must be surveyed, and wildlife removed from the trench by appropriately trained personnel approved by **TI**.	Contractor**/TI**
1.10	Open trenches and excavations will be inspected twice daily (upon arrival and exit of the site) for trapped fauna. Trapped fauna within open trench or pipeline must be removed and relocated by a **suitably qualified wildlife carer**. Dead fauna must be removed from the project site to reduce the potential for secondary impacts to scavenging species. All instances of fauna entrapment must be recorded, including species, condition, date, time and location coordinates. Data will be reported to **TI** on a weekly basis.	Contractor's Project Environmental Advisor

EPR	Mitigation measure	Accountability
1.11	Any deaths or injuries to **MNES** species are to be reported to **TI** immediately.	Contractor's Project Environmental Advisor
1.12	Where a threat to wildlife is identified during construction, **TI**'s project representative must be notified immediately, and Bonorong (0447 264 625) contacted for advice. Works may need to cease if fauna is in danger or has been harmed. For non-threatened species only **suitably qualified wildlife carers** should attempt to relocate wildlife, under an approved permit from **NRE Tas**. Threatened species are to be relocated in accordance with their relevant **EPR**.	Contractor's Project Environmental Advisor **/ TI's project representative / Suitably qualified wildlife carer**
1.13	No domestic pets (for example dogs) are permitted on site at any time. Signage will be displayed at work sites to state that pets are prohibited.	Contractor

EPR 1A – Tasmanian wedge-tailed eagle

EPR	Mitigation measure	Accountability
1A.1	Construction works will not be undertaken within 500 m direct distance and/or 1,000 m line of sight of an **active eagle nest** during the **eagle management constraint period** except in the circumstances specified in **EPR** 1A.4.	Contractor**/TI**
1A.2	**Aerial nest searches** must be undertaken at least once every two years to detect all **active eagle nests** within 1,250 m of any construction works planned during the **eagle management constraint period**.	**TI**
1A.3	Planned maintenance works must not be conducted within 500 m of any **active eagle nest** during the **eagle management constraint period**.	Contractor**/TI**
1A.4	If unplanned repair work or maintenance is required during the **eagle management constraint period** (1 July to 31 January), except where work is urgently required to avert serious threat to life, property, or the environment, the following measures must be observed: • All known eagle nests must be assumed to be active, unless a **nest activity assessment** has been conducted. • All workers must be aware of all **active eagle nest** locations prior to entering the construction project area. • No person or vehicle must go within 200 m of an **active eagle nest**. • No person must look directly towards an **active eagle nest** when they are within 1,000 m of an **active eagle nest**. • No heavy vehicles are permitted within 1,000 m line of site or 500 m direct distance of an **active eagle nest**. • No more than two light vehicles are permitted within 1,000 m line of site or 500 m direct distance of an **active eagle nest** within a seven-day period. Vehicles must not enter these areas more than twice within a seven-day period. • No vehicle is to remain within 1,000 m line of site or 500 m direct distance of an **active eagle nest** for more than 30 minutes (total) within a seven-day period, unless a **suitably qualified eagle specialist** has provided prior written agreement specifying the required safeguards and mitigation measures and justification that harm will not occur. • Workers should not wear hi-visibility clothing whilst in the allowed proximity to an **active eagle nest**, except where this is an essential safety requirement. • No vehicles are to be parked within sight of an **active eagle nest**. • Where practical, workers should remain within 5 m of each other, and not take work breaks within 500 m of an **active eagle nest**.	**Contrcator/TI**

EPR	Mitigation measure	Accountability
1A.5	Where unplanned repair work or maintenance must occur during the **eagle management constraint period** and the work is urgently required to avert serious threat to life, property, or the environment, the work must adhere to the measures listed in **EPR** 1A.4 as closely as possible, whilst giving priority to averting the serious threat to life, property, or the environment.	**TI**
1A.6	No clearance and conversion of potential nesting habitat (old growth native forest with adequate shelter and large trees suitable for nesting) is to occur within 200 m of a known eagle nest, regardless of the activity status of the nest	Contractor**/TI**
1A.7	Any blasting works must be authorised by TI. Blasting works must not occur within the **eagle management constraint period**, and works must demonstrate that there will be no impacts to eagles through noise and vibration. This may include the provision of noise and vibration modelling.	Contractor**/TI**

EPR 1B – Burrowing crayfish

EPR	Mitigation measure	Accountability
1B.1	The site induction for construction personnel will include training in the identification of Burrowing crayfish (**BCF**) habitat elements, and environmental awareness materials will be provided to construction personnel to assist with identifying **BCF** habitat elements. Further training for supervisory personnel must be delivered by a **suitably qualified ecologist**.	Contractor's Project Environmental Advisor **/** Contractor's **Suitably qualified ecologist / TI**
1B.2	Pre-construction surveys will be undertaken by a **suitably qualified ecologist** within all areas of known potential habitat (as shown on **CEPs**) within 20 m of the **construction corridor**. Surveys will be undertaken between May and November, no more than six months prior to construction commencing within a given area.	Contractor's **Suitably qualified ecologist**
1B.3	Where an area of known potential habitat (as shown on **CEPs**) cannot be surveyed due to dense vegetation cover, the area will be cleared via slashing to facilitate searching for burrows by a **suitably qualified ecologist**. Clearance is only permitted to the extent required to achieve ground visibility. Timing as **1B.2**. **TI** approval is to be given prior to commencing slashing. If an area of known potential habitat cannot be surveyed, it will be treated as occupied and the requirements under **EPR 1B.7** applied.	Contractor's **Suitably qualified ecologist / TI**
1B.4	Where possible, the **construction corridor** will be micro-sited to minimise impacts to known potential habitat (as shown on the **CEPs**) and known and discovered **BCF** chimneys. The **construction corridor** is to be clearly demarcated and reduced as much as possible in areas of known potential habitat (as shown on the **CEPs**).	Contractor **/** Contractor's **Suitably qualified ecologist**
1B.5	Within specified known locations of BCF (as shown on **CEPs**), installation of pipeline is to be via **HDD** at a minimum depth of 5 m when transiting under the chimneys. No ground-breaking works or machinery will be permitted within these areas.	Contractor
1B.6	A 5 m **exclusion zone** (fenced) must be erected around all known potential habitat (as shown on **CEPs**) and confirmed **BCF** chimneys that are to be retained (see **EPR 1B.2**) within 20 m of the **construction corridor**. This includes specified areas of known potential habitat where pipeline is to be installed via **HDD** (see **EPR 1B.5**). Where a 5 m exclusion zone intersects with a **relocation management area**, any habitat within 5 m of active work will be treated as impacted and **EPR 1B.7** will apply.	Contractor's Project Environmental Advisor
1B.7	<u>Salvage and relocation</u> Immediately prior to any ground disturbance (i.e. on the same day) to known locations of **BCF** within 5 m of the construction corridor that cannot be avoided (as shown on the **CEPs**), known unavoidable locations detected in **EPR1B.2 - 1B.3**, or within known potential habitat (as shown on **CEPs**) that cannot be avoided and cannot be confirmed as free from **BCF** (**Relocation management area**), salvage and relocation of any burrowing crayfish will	Contractor's **Suitably qualified ecologist**

EPR	Mitigation measure	Accountability
	be undertaken by a **suitably qualified ecologist** (ecologist must have experience in the identification of *Engaeus granulatus* animals and habitat and must be trained in the handling *Engaeus granulatus*) in accordance with a valid 'Permit to Take' under the *Nature Conservation Act 2002* (Tas). Salvage and relocation must be undertaken as follows: • Salvage and relocation must be conducted between May and August (inclusive); • Burrowing crayfish will be removed using disinfected hand tools and washed in stream water or dechlorinated water; • Burrowing crayfish will be examined to identify species and assess condition; • Healthy individuals will be stored in individual containers with local stream water or dechlorinated water (to be regularly replaced) and placed on ice or in an esky; • Injured or dead individuals will be euthanised at the discretion of the ecologist through being placed in an ice slurry for 30 minutes. Euthanised burrowing crayfish will be preserved and lodged with an appropriate institution within three months of collection; • Upon completion of salvage, the ecologist will approve a **relocation management area** before commencement of works and will supervise all works within the area. • All excavated spoil from a **relocation management area** will be examined by the ecologist for burrowing crayfish and any individuals salvaged for relocation (per the process outlined above). • Burrowing crayfish must be released into suitable habitat as close as possible to the **excavation site** (in an area where likelihood of future disturbance is minimal), on either the same day as capture or the following day. Individuals will be released into truncated burrows, or either artificial burrows (adults) or shallow holes (juveniles), tail first, and covered with a small stone or block of wood to prevent individuals from immediately leaving. All salvage and relocation data must be recorded, including date and location of excavation, weather conditions, names of persons involved in the excavation works, number and species of burrowing crayfish salvaged, relocated (and coordinates of relocation), or euthanised, and any issues identified. Data will be reported to **TI** on a weekly basis, except for confirmed **BCF** deaths, which must be notified immediately to **TI**, no later than 24 hours.	
1B.8	No vehicle traffic is permitted through **relocation management areas**. Access to construction sites must be contained within the **construction corridor**, or on pre-existing roads and tracks. Vehicles must not be parked within **relocation management areas**.	Contractor

EPR	Mitigation measure	Accountability
1B.9	In the event of an unanticipated **BCF** discovery in the **construction corridor** that cannot be avoided through micro-siting, all works must cease in the area until the salvage and relocation process in **EPR 1B.7** is undertaken.	Contractor's **Suitably qualified ecologist**
1B.10	Upon completion of works within a **relocation management area**, the area must be fenced until rehabilitation is complete. No vehicles are permitted within this area to prevent soil compaction. This includes habitat areas where salvaged BCF have been relocated to, even if outside the **relocation management area**.	Contractor's **Suitably qualified ecologist**
1B.11	The **WDMP** (see **EPR 2.1**) must allow for the retention of woody weed species (such as gorse and blackberry) within known **BCF** habitat areas, unless the area is fenced to prevent livestock access. These woody weed species protect **BCF** against livestock trampling.	Contractor **/** Contractor's **Suitably qualified ecologist**
1B.12	<u>Rehabilitation and restoration</u> • Undertake restoration with minimal soil disturbance and establish a moderate to high percentage cover of vegetation, including bare ground areas, rocks, and logs. • Plant species must reflect the local vegetation community and include sedge and grass species such as common spikesedge (*Eleocharis acuta*) in low densities to prevent spreading, tall spikesedge (*Eleocharis sphacelata*), tall sedge (*Carex appressa*), rushes (*Juncus spp.*), and tussock grasses (*Poa labillardierei*). Where possible, use local seed or propagules. • Refer to the Threatened Species Scientific Committee (2008) Conservation advice for *Engaeus granulatus* (Central North Burrowing Crayfish) Department of State Growth (2015).	
1B.13	In accordance with **EPR 1.5** no impacts to wildlife (including non-threatened native crayfish species), or products of wildlife, may occur without a valid 'Permit to Take' under the *Nature Conservation Act 2002* (Tas).	**TI/**Contractor

EPR 1C – Green and gold frog

EPR	Mitigation measure	Accountability
1C.1	Prior to construction, a Permit to Take Threatened Species and/or Products of Wildlife must be obtained for the relocation of green and gold frog (**GGF**) and any other frog species listed under the *Nature Conservation (Wildlife) Regulations 2021* (Tas). All permit conditions must be complied with. Where there is a discrepancy between the **EPRs** and the permit conditions, the permit conditions will prevail.	Contractor's Project Environmental Advisor
1C.2	The site induction for construction personnel will include training in the identification of green and gold frogs, green and gold frog habitat elements, signs and symptoms of chytrid fungus infection, measures to be followed if a green and gold frog is identified during works (including measures to protect other native frogs), and the on-site hygiene protocols required to prevent the transmission and spread of chytrid fungus (**see EPRs 2.1, 2.4, and 2.6**). Environmental awareness materials will also be provided to construction personnel to assist with identifying **GGFs** and their habitat elements. Further training for supervisory staff is to be delivered by a **suitably qualified ecologist**.	Contractor **/** Contractor's **Suitably qualified ecologist / TI**
1C.3	The **construction corridor** is to be clearly demarcated and reduced as much as possible in areas of known potential habitat (as shown on the **CEPs**).	**TI's project representative /** Contractor **/** Contractor's Project Environmental Advisor
1C.4	**Exclusion zones** (including a 5 m buffer) will apply to known potential habitat located immediately outside of the **construction corridor** (within 20 m). Any additional areas identified as potential **GGF** habitat during construction must also be marked as **exclusion zones**. **Exclusion zones** must be fenced and checked by a **suitably qualified ecologist** prior to commencement of construction.	Contractor **/** Contractor's **Suitably qualified ecologist**
1C.5	No more than two areas containing GGF habitat are to be open for construction at any given time.	
1C.6	Pre-clearance surveys of GGF habitat (as shown on the **CEPs**). must be undertaken by a **suitably qualified ecologist** the morning of any construction within 100 m of known potential habitat for the **GGF**. Pre-clearance surveys must be undertaken prior to any vehicles accessing the area or construction works commencing. The purpose of the pre-clearance surveys and checks is to assess habitat potential within the Management Area and relocate any **GGF** individuals. .The **suitably qualified ecologist** must remain on site for the duration of works within an area of GGF habitat to oversee and implement relocation (**1C.8**) of individual GGF.	Contractor's **Suitably qualified ecologist**
1C.7	If pre-clearance surveys (as per **1C.6**) determine that more than 5 individual GGF are present within a given area of habitat, frog-proof fencing must be installed to prevent GGF re-entry to the **construction corridor** after the application of 1C.8. Frog-proof fencing must remain in place for the duration of works within a given area of GGF habitat.	
1C.8	Relocation of **GGFs** must be undertaken by a **suitably qualified ecologist**, in accordance with the requirements of a current Permit to Take and the Hygiene protocols for the control of diseases in Australian	Contractor's **Suitably qualified ecologist**

EPR	Mitigation measure	Accountability
	frogs (Murray, et al., 2011). Frogs will be relocated to a suitable waterbody within the same habitat system, located a minimum of 100 m from the **construction corridor**. If the same habitat is not available, a suitable release habitat can be selected at the discretion of the ecologist. Suitable habitat is habitat must be a still or slow flowing waterbody of appropriate size with vegetated margins, no observed predators, and connectivity to other waterbodies (within 300 m). Other frog species identified during pre-clearance surveys will also be relocated using the same methods.	
1C.9	Short-term handling and relocation of frogs and tadpoles will be undertaken in accordance with the following animal handling requirements: • Capture, handling and housing of wild amphibians should be minimised or avoided where possible; • Where handling is necessary, care must be taken to ensure individuals do not have their exposure to pathogens elevated over their background exposure levels; • When handling frogs or tadpoles use well rinsed, single use, non-powdered vinyl gloves. A new set of gloves must be used for each animal; • Frogs are to be transported individually in a clean and dry container. The container must be cleaned using an amphibian friendly chemical as described in Table 1 of the Hygiene protocols for the control of diseases in Australian frogs (Murray, et al., 2011), and dried between frogs; • Adults should not be held in groups; • Tadpoles from the same water body may be housed for short periods in a common container, although overcrowding should be avoided; and • Longer holding times (>60 min) will require changes to water and the provision of appropriate food (>24 h).	Contractor's **Suitably qualified ecologist**
1C.10	Dead amphibians or live animals showing clinical signs of disease (e.g., abnormal posture or behaviour, such as hind legs stretched behind body, wobble or lack of fleeing, or skin changes such as skin discolouration, peeling or ulceration) must be regarded as having a high infection risk to healthy animals and rigorous hygiene measures are required. Sick and dead frogs should be collected and sent for disease diagnosis. Collection: • Do not use bare hands to handle sick or dead frogs; • Disposable gloves should be worn when handling sick or dead frogs; • New gloves and a clean plastic bag should be used for each frog specimen to prevent cross-contamination; and	Contractor's **Suitably qualified ecologist**

EPR	Mitigation measure	Accountability
	• If the frog is dead, keep the specimen cool and preserve as soon as possible to avoid decomposition. Preserving specimens: • Specimens can be preserved/fixed in 70% ethanol or 10% buffered formalin; • Cut open the belly and place the frog in about 10 times its own volume of preservative; and • Where no preservative is available, specimens can also be frozen. If numerous frogs are collected, some should be preserved and some should be frozen. Portions of a dead frog can also be sent for analysis (e.g., a preserved foot, leg or a portion of abdominal skin). Transportation: • If the frog is alive and likely to survive transportation, place the frog into either a moistened cloth bag with some damp leaf litter or into a plastic bag with damp leaf litter and partially inflated before sealing; • Remember to keep all frogs separated during transportation; • If the frog is alive but unlikely to survive transportation (death appears imminent), euthanize the frog (using **NRE Tas's** *Best Practice Guidelines for Wildlife Rehabilitation*) and place the specimen in a freezer or preservative. Once frozen/preserved the specimen is ready for shipment. This can only be conducted under approval from the **NRE Tas** Wildlife Services (Ph: (03) 6165 4305 or email wildlife.services@nre.tas.gov.au); • All containers should be labelled showing at least the species (if known), date and collection location; • Preserved samples can be sent in jars or wrapped in wet cloth, sealed in bags and placed inside a padded box; • Send frozen samples in an esky with dry ice; • Place live or frozen specimens into a small Styrofoam esky. Seal esky with packaging tape before sending; and • Send the package by courier and declare any hazardous or flammable contents (e.g., 70% ethanol)	
1C.11	Pre-clearance searches must be recorded on a register, including time/date of search, species identified, time/date of capture, location of capture, time/date of relocation, relocation area, and any other additional information collected. This register will be provided by **TI**. A video or photograph must be taken for the capture and relocation of frogs.	Contractor's **Suitably qualified ecologist / TI**
1C.12	Vehicle access to the **construction corridor** in areas of known potential habitat must be via pre-existing roads and tracks. No vehicle parking within known potential habitat is permitted, except when necessary for	Contractor

EPR	Mitigation measure	Accountability
	exclusion zone demarcation. Upon completion of works within a **Green and Gold Frog Habitat Management Area,** no vehicles are to re-enter the area without further pre-clearance survey.	
1C.13	<u>Rehabilitation and restoration</u> • Implement best practice guidelines (Bruzzese et al., 2000) for the control of Blackberry and the Strategic Plan (ARMCANZ, 2000) for the control of Gorse. • Undertake restoration with minimal soil disturbance and establish a moderate to high percentage cover of vegetation, including bare ground areas, rocks, and logs. • Plant species must reflect the local vegetation community and include sedge and grass species such as common spikesedge (*Eleocharis acuta*) in low densities to prevent spreading, tall spikesedge (*Eleocharis sphacelata*), tall sedge (*Carex appressa*), rushes (*Juncus spp.*), and tussock grasses (*Poa labillardierei*). Where possible, use local seed or propagules. • Large woody debris around the outer pond margins and logs along the banks are important for Green and Gold Frogs. • Refer to Green and Golden Frog (Litoria raniformis) Management Guidelines. Report prepared by GHD for specific rehabilitation requirements.	
1C.14	In accordance with **EPR 1.5** no impacts to wildlife (including non-threatened native frog species), or products of wildlife, may occur without a valid 'Permit to Take' under the *Nature Conservation Act 2002* (Tas).	**TI/**Contractor
	See also	
2.7	Only biocides endorsed by the Australian Pesticides and Veterinary Medicines Authority will be used. There will be no spraying within 5 m of aquatic habitat or remnant native vegetation areas. Application of herbicides will be in accordance with the Guidelines for Safe and Effective Herbicide Use Near Waterways (DPIPWE, 2012). Removal of weeds within areas mapped as GGF habitat or dispersal routes must be through using manual methods. No use of biocides within areas mapped as GGF habitat or dispersal routes is permitted.	Contractor

EPR 1D – Australian grayling

EPR	Mitigation measure	Accountability
1D.1	Construction of in-stream structures or any other major in-stream works must not occur during peak migration periods in known habitats. This includes downstream spawning migrations from March to April, and recruitment migrations from November to January.	**TI's project representative /** Contractor
1D.2	If in-stream excavation or construction of in-stream structures in known or likely habitat is required, a separate impact risk assessment must be conducted by a **suitably qualified aquatic fauna expert**.	**Suitably qualified aquatic fauna expert**
1D.3	A fish protection screen will be installed on the outer face of the pump wells at **GBPS**, parallel to the direction of river flow. The screen will be sized so that approach velocities are no greater than 0.1 m/s.	Contractor **/ TI**
	See also	
3.14	**Horizontal Directional Drilling procedure** • Pipelines must be installed an appropriate depth below the stream bed to prevent exposure of the pipe in the future as the streambed erodes. The highest point of pipe or casement must be at least 1m below bed level. • Where vehicle or machinery access across the waterway is required, it should be ensured that excessive disturbance of the stream bed and banks do not result from activities. • Any disturbance should not cause erosion or suspension of sediment (see EPR 4). • No temporary structures are to be erected within the waterway that may constitute a barrier to fish passage for more than 24hrs.	Contractor
3.15	**Trenching procedure** • Pipelines must be installed an appropriate depth below the stream bed to prevent exposure of the pipe in the future as the streambed erodes. This may require that where the streambed is found to be constituted by erosive material, a greater depth is necessary. The highest point of pipe or casement must be at least 1m below bed level. • Where vehicle or machinery access across the waterway is required, it should be ensured that excessive disturbance of the stream bed and banks do not result from activities. • Installation of pipelines through waterways with Australian Grayling present only occurs during low flow conditions between the months of January to April. • Bed composition and profile must be returned to pre-works conditions. • Any scour protection installed in the bed of a waterway must be installed at a minimum of 30cm below bed-level and covered with bed material that is naturally present within the same waterway.	

EPR	Mitigation measure	Accountability

	• Any engineered erosion control materials such as geotextile products are installed so that they will not be exposed to or enter the waterway under extreme weather conditions or over time as a result of erosion.
	• Backfill material used within the bed and banks of a waterway must:
	  o be obtained locally and replicate material existing within the waterway.
	  o be free of contamination including but not limited to acid sulphate soils, heavy metals, hydrocarbons.
	• Where riparian vegetation is removed or disturbed, revegetation is conducted within 6 months of completion of works.
	• Where trenching occurs in perennial waterways, or during any flow conditions other than cease to flow, the below requirements must be met:
	  o Temporary diversion, damning or obstruction of water flows must occur for a maximum of 7 days.
	  o Any temporary coffer dams constructed in the waterway use material that is free from contamination as described above.
	  o All coffer dam material is removed from the waterway following construction except where it meets the criteria for appropriate back-fill material as described above and does not alter the profile of the waterway.	

3.16	**Water crossing monitoring** All water crossings are to be inspected after at least 12 months, and within 24 months of completion of works during low-flow conditions to ensure that: • Revegetation is likely to be successful • No significant erosion of the bed and banks is occurring because of the works • No infrastructure installed under or adjacent to the waterway has been exposed because of erosion. Where works have resulted in a change to hydrology, a **suitably qualified aquatic fauna expert** is engaged and remedial works conducted (if appropriate) to ensure no ecological impacts that may impact Australian Grayling occur.	**TI / suitably qualified aquatic fauna expert**

4.1	**Erosion and Sediment Control Plan** An Erosion and Sediment Control Plan (ESCP) must be prepared by the Contractor, in accordance with Erosion and Sediment Control – the fundamentals for development in Tasmania **(TEER, 2023)**. TI's project representative will be responsible for reviewing and approving the ESCP. Due to the physical and temporal scale of the project, ESCP may be written and implemented in stages as appropriate (to be determined based on the construction schedule and in consultation with the TI's project representative).	Contractor **/ TI's project representative**

	In accordance with Erosion and Sediment Control – the fundamentals for development in Tasmania (July 2023), the ESCP must contain the following: • Site plan(s), including plan name, document version, date and author, and stage (if part of a series of staged ESCPs). Site plans must have a north point, scale, all property boundaries, and contours. • General soil description • Site layout, including location and approximate volume of soil disturbance, and stockpile locations. • Watercourses • Existing stormwater infrastructure • Location and details (dimensions, lining, and/or velocity control) of all proposed temporary drainage controls (including diversion drains and internal drains directing 'clean' runoff to a level spreader) • location and details of all proposed erosion controls, including location of vegetation to be retained, with exclusion zones clearly marked • location of sediment controls (including the location and design of stabilised site access points) • location of wash-out area and associated controls for potentially polluting activities and machinery cleaning • a statement of who is responsible for establishing and maintaining all controls (including contact details) • the installation sequence for different controls the maintenance program for controls	

4.2	**Water Quality Management Plan**
	A Water Quality Management is to be prepared and implemented during construction works to ensure suspended sediment and turbidity remain within Default Guideline Values for Aquatic Ecosystems of the Mersey Catchment (EPA, 2021) and the ANZECC guidelines for water quality (ANZECC, 2000).
	Appropriate monitoring sites are to be selected as follows:
	• Upstream:
	  ○ Located upstream of all watercourses crossing works and potential sedimentation inputs from the site
	  ○ Downstream of any confluences with significant creeks, streams or rivers
	  ○ Not to be undertaken less than 10m or further than 200 m upstream from the site.
	• Downstream:
	  ○ Located downstream of all construction sediment inputs (from both point and diffuse sources)
	  ○ Upstream of any confluences with significant creeks, streams or rivers
	  ○ Not be undertaken less than 20m or further than 100 m downstream of the construction site.
		Contractor's Project Environmental Advisor

- Monitoring to be undertaken by a suitably qualified person and is to be conducted in accordance with the following:
    - Daily readings start at least one day prior to construction commencing.
    - Minimum three upstream and downstream readings taken daily once construction has commenced:
    - Prior to the commencement of daily works
    - During daily works
    - At the completion of daily works
    - At any other time that there is a visible change in turbidity downstream resultant from site activities.
- All water quality readings to be checked against the SWISA Turbidity Management Framework and actions taken as necessary. Where parameters exceed those specified in the Water Quality Management Plan or CEMP, works must immediately be ceased, and appropriate remedial action taken until parameters meet the above requirements.
- A sediment curtain is installed downstream of the works to reduce the impacts of sediment disturbance.

Sediment traps, bags, or basins are used during dewatering or where otherwise necessary to mitigate discharge of highly turbid water back to the waterway.

EPR 1E – Den management (Tasmanian devil, spotted quoll, eastern quoll)

EPR	Mitigation measure	Accountability
1E.1	The site induction for construction personnel involved in pre-clearance surveys will include training in the identification of potential den sites and the measures to be followed if a potential den site is identified during construction works. Further training for supervisory staff is to be delivered by a **Suitably qualified ecologist**.	Contractor's Project Environmental Advisor / Contractor's **Suitably qualified ecologist**
1E.2	Pre-clearance surveys will be undertaken two weeks prior to vegetation clearance and/or ground disturbing works within a given work site. Pre-clearance surveys within areas of optimal and sub-optimal habitat (as shown on **CEPs**) are to be surveyed by a **Suitably qualified ecologist**. Pre-clearance surveys within areas of unsuitable denning habitat may be undertaken by construction personnel who have received supervisory-level den identification training in accordance with **EPR** 1E.1.	Contractor / Contractor's Project Environmental Advisor / Contractor's **Suitably qualified ecologist**
1E.3	Potential den sites identified during pre-clearance surveys will be clearly marked with flagging on ground with a 50 m **exclusion zone** immediately. An activity assessment will be undertaken by a **Suitably qualified ecologist** to determine the likelihood of usage by devils or quolls. Den sites with the potential to be occupied by a devil or quoll will be subject to a den monitoring assessment (see **EPR** 1E.6).	Contractor / Contractor's Project Environmental Advisor / Contractor's **Suitably qualified ecologist**
1E.4	Den sites within the **construction corridor** that are confirmed by a **Suitably qualified ecologist** to be definitively inactive and vacant can be decommissioned under a current Permit to Take a Product of Wildlife under the *Nature Conservation Act 2002* (Tas).	Contractor / Contractor's **Suitably qualified ecologist**
1E.5	Den sites outside of the **construction corridor** that are confirmed by a **Suitably qualified ecologist** to be definitively inactive and vacant do not need to be decommissioned or subject to any exclusion zone.	Contractor / Contractor's **Suitably qualified ecologist**

1E.6	A den monitoring assessment will be completed for dens with the potential to be occupied by a devil or quoll, as follows:
	• At least two infra-red motion sensor cameras will be installed at each entrance of each burrow for a minimum of seven nights. Camera settings will be as follows; sensitivity: high, capture method: video, capture length: >20 seconds, capture delay interval: 0 seconds.
	• Footage will be inspected by a **Suitably qualified ecologist**, and the den classified as follows:
	  ○ Likely maternal devil/quoll den (see **EPR** 1E.7) – where a pouch-laden devil or quoll, an imp (juvenile devil), kitten (juvenile quoll), or devil or quoll displaying natal characteristics for two or more nights is recorded.
	  ○ Devil/quoll den (non-maternal) (see **EPR** 1.8 and **EPR** 1.9) – where a devil or quoll is recorded to be using a den regularly (i.e. almost every night).
		Contractor's **Suitably qualified ecologist**

EPR	Mitigation measure	Accountability
	○ Non devil/quoll den (see **EPR** 1.8 and **EPR** 1.9) – where another species is recorded to be using the den either regularly or opportunistically.	
1E.7	Likely maternal devil/quoll den The 50 m **exclusion zone** will remain in place and the den will be subject to continued monitoring until a **Suitably qualified ecologist** has confirmed that there is no current natal activity (i.e. the den is not occupied by a breeding female and is not necessary for the rearing of young) and the den can be classified as a non-maternal den (see **EPR** 1E.8 and **EPR** 1E.9).	Contractor's **Suitably qualified ecologist**
1E.8	Non-maternal dens within **construction corridor** Non-maternal dens within the **construction corridor** will be subject to continued monitoring (with or without a one-way gate). The 50 m **exclusion zone** will apply until the den is conclusively vacant and can be decommissioned under a current Permit to Take a Product of Wildlife under the *Nature Conservation Act 2002* (Tas). All permit conditions must be complied with. Where there is a discrepancy between the **EPRs** and the permit conditions, the permit conditions will prevail.	Contractor's **Suitably qualified ecologist**
1E.9	Non-maternal dens outside of **construction corridor** The 50 m **exclusion zone** will remain in place for active devil/quoll dens (non-maternal) that are located outside of the **construction corridor**. If there is potential for a den located outside of the **construction corridor** to extend below ground into the **construction corridor**, the den will be subject to continued monitoring and a one-way gate installed until the den is conclusively vacant.	Contractor's **Suitably qualified ecologist**
1E.10	The contractor must notify **TI** of the results of the pre-clearance survey (and any subsequent activity assessment and den monitoring) and seek approval for clearance. Approval for clearance to be undertaken in a designated area is valid for eight weeks.	Contractor / Contractor's Project Environmental Advisor
1E.11	In the event an unanticipated potential den site is identified during construction, a 50 m **exclusion zone** will be established and an activity assessment completed by a **Suitably qualified ecologist** (see **EPR** 1E.3).	Contractor / Contractor's Project Environmental Advisor / Contractor's **Suitably qualified ecologist**
	See also	
1.6	Vegetation clearance must be minimised as much as possible within the **construction corridor**. Blanket clearing of vegetation within the **construction corridor** is not permitted.	Contractor
	EPR 13 – Rehabilitation and reinstatement.	

EPR 1F – Tasmanian devil management – [redacted]

EPR	Mitigation measure	Accountability
1F.1	Noise generating work and activities at [redacted] that exceed background noise levels at nearby dens (36dBA at [redacted] must only be undertaken outside the **devil management constraint period** and in accordance with EPR 1F.4, 1F.5 and 1F.7. These works include (but are not limited to) to the following: • [redacted] • [redacted] • [redacted] • [redacted] • [redacted] • Vehicle access to site (trucks, heavy machinery) • Any other noise generating activities which are likely to exceed 32dBA at nearby dens.	Contractor
1F.2	Noise generating work and activities for the pipeline and drainage [redacted] that exceed background noise levels at nearby dens (36dBA [redacted] must only be undertaken outside the **devil management constraint period** and in accordance with EPR 1F.4, 1F.6 and 1F.7. These works include (but are not limited to) to the following: • Pipeline trench excavation (use of excavator with bucket, ripping rock breaker attachments). • Pipeline installation (use of excavators, trucks, concrete pump, hand tools). • Drainage installation (use of excavators with bucket, ripping and rock breaker attachments, trucks). • Vehicle access to site (trucks, heavy machinery). • Any other noise generating activities which are likely to exceed 36dBA at nearby dens.	Contractor
1F.3	Work and activities [redacted] that are below background noise levels at nearby Dens (36dBA [redacted] may be undertaken within the **devil management constraint period** during daylight hours only. These works may include the following: • [redacted] minor power tool works, pressure cleaning and regrouting (no external walls allowed at any time). • Light vehicle access to the site • Heavy vehicle movements limited to 2 movements per week.	Contractor

EPR	Mitigation measure	Accountability
1F.4	Before commencement of any work or activity associated with [redacted] a temporary sound attenuation curtaining must be installed in front of [redacted] to reduce noise levels at dens. The sound attenuation curtaining must: • Not interfere with the access to the den sites or utilisation of the area by devils • Be installed under direction by a **Suitably Qualified Ecologist** and **Acoustic Specialist** • Be installed and decommissioned outside of the **devil management constraint period** • Not result in the removal of any vegetation and minimise disturbance to soil as much as practicable; and • Remain in place until completion of all works that are likely to have a noise impact on denning habitat and as confirmed by an **Acoustic Specialist** and **Suitably Qualified Ecologist.**	Contractor / **Acoustic Specialist / Suitably qualified ecologist**
1F.5	Before commencement of any noise generating work or activities associated with [redacted], install sound attenuation curtaining or other noise mitigating devices which are suitable for the task or activity. Noise mitigation approaches must: • Be developed in consultation with an **Acoustic Specialist** and suitable for the noise generating task or activity to be undertaken; • Be used at all times; and • Remain in place until completion of all noise generating tasks or activities.	Contractor / **Acoustic Specialist**
1F.6	To mitigate noise and vibration from work or activity associated with the pipeline and drainage [redacted] the following noise and vibration mitigation measures must be undertaken: • Minimise the use of equipment with the potential to generate high amplitude ground vibration (such as rock breakers); • Undertake any work during daylight hours only; • Install temporary sound attenuation curtaining in close proximity to rock breaking activities and power tool usage; and • Utilise a noise control shroud on rock breaker head.	Contractor
1F.7	Noise generating work and activities for [redacted] that exceed background noise levels at nearby dens (36dBA [redacted] outside of the **devil management constraint period** must only be undertaken in accordance with the following monitoring requirements carried out by a **Suitably Qualified Ecologist** and **Acoustic Specialist**: <u>Camera Monitoring</u>	**Suitably Qualified Ecologist** / Contractor / **Acoustic Specialist**

EPR	Mitigation measure	Accountability

	• Install cameras outside the [redacted] prior to installation of sound attenuation curtaining to record direction of access to the mine used by devils so access is not impeded.
	  ○ Monitor behaviour for minimum period of 1 week before barrier erected to determine access route into mines
	  ○ Monitor for minimum period of 1 week after barrier is installed to assess any changes in behaviour. If behaviour changes recorded and they persist after a week adjust location/construction of the sound attenuation curtaining and undertake further monitoring before commencing works
	• Install cameras facing e[redacted] to monitor comings and goings of devils during works period.
	• Install camera 3m (max.) inside of [redacted] to monitor any behavioural changes and to monitor when maternal denning behaviour commences.
	• Photograph [redacted] to within 3 m internally before works.
	  ○ Monitor condition of entrances and roofs on daily basis if vibration equipment used on site (such as rock breaking machinery)
	• Cameras to be checked twice weekly by **Suitably Qualified Ecologist** using wireless links to minimise visitation to the den sites
	• Camera batteries will need to be replaced on a 2-3 week cycle.
	<u>Noise and Vibration Monitoring -</u>
	• Install noise receivers near [redacted] to provide ongoing monitoring of noise levels during all work periods.
	  ○ Noise receivers to be checked twice weekly using wireless links and is to coincide with camera checking to minimise visitation to the den sites
	• Measure ground vibration using a geophone if rock breaker used for pipeline and drainage work
	  ○ Place monitors outside [redacted] during rock breaking and monitor levels in real time. Geophone to be installed with remote reader (on cord) to minimise visitation to den entrances.
	Visits to [redacted] to set up and take down monitoring equipment, change batteries and download data are to be coordinated between the **Suitably Qualified Ecologist** and **Acoustic Specialist** to minimise visitation [redacted]	

EPR	Mitigation measure	Accountability
	If any behavioural changes are identified during the monitoring period a stop work notice will be issued to the Contractor immediately, and a review will be undertaken in order to determine impacts and review safeguards and mitigation measures. Works will only recommence if a significant impact will not occur on the species.	
1F.8	To minimise human disturbance to [redacted] only a **Suitably Qualified Ecologist** and **Acoustic Specialist** will be allowed to visit these sites, only as required, to undertake the following activities: • Installing and checking cameras • Installing and checking noise receivers • Installing and checking geophone vibration monitors • Photographing and monitoring [redacted] conditions Cameras, noise receivers and geophone to be checked using wireless links to minimise visitation to the den sites.	**Suitably Qualified Ecologist / Acoustic Specialist**
1F.9	To mitigate any roadkill or injury to dasyurids [redacted] the following mitigation measures must be undertaken: o Access [redacted] outside work hours to ensure no vehicular access between dusk and dawn. o Max speed limit of 20km/h on all vehicles [redacted]. Appropriate signage erected that the 20 km/h relates to wildlife collision risk. Enforced with zero tolerance approach to workers exceeding this speed limit. o Contractors to be provided with basic training on safely rescuing injured devils or other animals and processes for transfer to wildlife carers. o Where a threat to wildlife is identified during construction, TI's project representative must be notified immediately, and Bonorong (0447 264 625) contacted for advice. Works may need to cease if fauna is in danger or has been harmed. For non-threatened species only **suitably qualified wildlife carers** should attempt to relocate wildlife, under an approved permit from NRE Tas. Threatened species are to be relocated in accordance with their relevant EPR.	Contractor/ **suitably qualified wildlife carer**
	See also	
	EPR 1E	

EPR 1G – Hollow-bearing tree management (masked owl, swift parrot, blue-winged parrot)

EPR	Mitigation measure	Accountability
1G.1	All potential hollow-bearing trees and forest habitat areas within 150 m of the **construction corridor**, must be assessed by a **suitably qualified ecologist** during the spring immediately preceding construction to confirm nesting (hollows) habitat values for masked owl. Any trees with potential masked owl nesting hollows will be subject to monitoring to determine masked owl usage (see EPR G1.5).	Contractor / Contractor's **Suitably qualified ecologist**
1G.2	All potential hollow-bearing trees and forest habitat areas within 15 m of the **construction corridor**, must be assessed by a **suitably qualified ecologist** during the spring immediately preceding construction to confirm nesting (hollows) and foraging habitat values for swift parrot and blue-winged parrot. Any trees with potential nesting hollows will be subject to monitoring to determine swift parrot or blue-winged parrot usage (see EPR 1G.7).	
1G.3	A 15 m exclusion zone (or **tree protection zone (TPZ)** determined by a **suitably qualified arborist**) will be established surrounding trees confirmed to contain habitat values for the Tasmanian masked owl, swift parrot or blue-winged parrot within 15 m of the construction corridor.	Contractor / Contractor's Project Environmental Advisor / **Suitably qualified arborist**
1G.4	Where possible, the **construction corridor** will be micro-sited to avoid impacts to hollow-bearing trees or forest habitat areas. Priority will be given to avoiding trees determined to be used for past or current breeding activity by masked owl, swift parrot, or blue-winged parrot (see EPR 1G.8).	Contractor / Contractor's Project Environmental Advisor
1G.5	If the **construction corridor** will encroach on the 15 m **exclusion zone** (or tree protection zone identified by a **suitably qualified arborist**) of a hollow-bearing tree by 10% or more, an arboriculture assessment will be undertaken in accordance with the Australian Standard Protection of Trees on Development Sites (AS 4970-2009) to determine if the tree is viable for retention. For trees that can be retained, an appropriate **exclusion zone** will be implemented by the arborist.	Contractor / Contractor's Project Environmental Advisor / **Suitably qualified arborist**
1G.6	<u>Passive acoustic monitoring – masked owl</u> All Hollow-bearing tree(s) that are confirmed to contain habitat values for the masked owl will be subject to passive acoustic monitoring (**PAM**), as follows: • A **suitably qualified ecologist** will set up a **PAM** device within 200 m of the hollow-bearing tree(s) (One **PAM** device will cover all trees within 200 m). • Monitoring must be undertaken twice, once in spring and once in summer immediately preceding construction, for a minimum of three weeks each. • The **PAM** devices must record for the duration of the night.	Contractor / Contractor's **Suitably qualified ecologist**

EPR	Mitigation measure	Accountability
	• Analysis of **PAM** data must be undertaken by a **suitably qualified bioacoustics analyst** to determine the presence of masked owls within the monitoring area. If masked owls are detected, passive visual monitoring is required for each hollow-bearing tree within 200 m (see EPR G1.6).	
1G.7	Passive visual monitoring – masked owl Hollow-bearing trees that are confirmed to contain habitat values for the masked owl and potentially being utilised by owls (following **PAM** undertaken per EPR 1G.5), will be subject to passive visual monitoring. A **suitably qualified ecologist** will undertake monitoring twice a day, for one hour before dawn and one hour after dusk, for a minimum of five consecutive days during the spring breeding season. If masked owl activity is recorded, the ecologist will assess the likelihood of breeding activity (current or past) (see **EPR** 1G.8). If no breeding activity is suspected, active visual monitoring and hollow decommissioning will be undertaken (see **EPR** 1G.9).	
1G.8	Passive visual monitoring – swift parrot and blue-winged parrot Hollow-bearing trees that cannot be retained and are confirmed to contain habitat values for the swift parrot or blue-winged parrot, will be subject to passive visual monitoring, as follows: • A **suitably qualified ecologist** will undertake monitoring twice a day for a minimum of five consecutive days. • Monitoring must be undertaken for one hour after dawn and one hour before dusk. • Monitoring must be undertaken during spring immediately preceding construction. Where swift parrots or blue-winged parrots are not identified, a second visual observation must be undertaken by **a suitably qualified ecologist** within 2 hours post-dawn or 1 hour before dusk for minimum 1 hour, repeated over 5 consecutive days in the following summer If swift parrot or blue-winged parrot activity is recorded, the **suitably qualified ecologist** will assess the likelihood of breeding activity (current or past) (see **EPR** 1G.9). If no breeding activity is suspected, active visual monitoring and hollow decommissioning will be undertaken (see **EPR** 1G.10)	Contractor / Contractor's **Suitably qualified ecologist**
1G.9	Breeding activity – masked owl, swift parrot and blue-winged parrots If current or past masked owl, swift parrot and blue-winged parrot breeding activities are suspected following monitoring, a temporary 150 m **exclusion zone** (fenced) will apply until the ecologist has determined that breeding activities have concluded. Following conclusion of breeding activities, a 15 m	Contractor / Contractor's **Suitably qualified ecologist** / **Suitably qualified arborist**

EPR	Mitigation measure	Accountability
	exclusion zone (or tree protection zone identified by a **Suitably qualified arborist**) will apply to trees within 15m of the **construction corridor** and works may commence outside of this area. Advice from **NRE Tas** must be sought on whether a Permit to Take under the *Nature Conservation Act 2002* (Tas) can be granted to impact a tree with evidence of breeding activity for masked owls or swift parrots, or if realignment/re-design is required. If impact to a breeding tree is approved by the regulator, then hollow decommissioning will be undertaken (see **EPR** 1G.9).	
1G.10	<u>Active visual monitoring and hollow decommissioning</u> Active visual monitoring and hollow decommissioning must be undertaken following passive monitoring (see **EPR** 1G.6 and **EPR** 1G.7), between 1 April and 31 July of the same year. Where hollows can be safely accessed, active visual monitoring will be undertaken by a **suitably qualified ecologist** as follows: • All viable hollows will be inspected for vertebrate fauna. • If the hollow contains evidence of masked owl, swift parrot, or blue-winged parrot breeding activity, active monitoring must cease and the requirements of **EPR** 1G.8 (breeding activity – masked owl, swift parrot and blue-winged parrots) followed. • If the hollow contains evidence of breeding activity of wildlife protected under the *Nature Conservation (Wildlife) Regulations 2021* (Tas) (other than the masked owl, swift parrot or blue-winged parrot), active monitoring must cease and the 15 m **exclusion zone** (or tree protection zone identified by a **suitably qualified arborist**) maintained until the ecologist has confirmed that breeding activities have concluded. • A valid Permit to Take under the *Nature Conservation Act 2002* (Tas) is required to remove the products of wildlife protected under the *Nature Conservation (Wildlife) Regulations 2021* (Tas). • If the hollow does not contain evidence of breeding activity, fauna may be flushed from the hollow through tapping the tree firmly with hand mallets, or by another method approved by the (**DCCEEW**). Alternatively passive visual monitoring (in accordance with **EPR** 1G.6) may be undertaken until the hollow is confirmed to be vacant. • Where hollow vacancy is conclusive, the hollow may be decommissioned through covering entrance(s) with corflute (or equivalent material). If hollow vacancy is inconclusive, it may be decommissioned using a one-way flap device to allow wildlife to exit the hollow. • Once all viable hollows are confirmed as decommissioned by a **suitably qualified ecologist**, the tree can be approved for clearance by **TI**'s project representative.	Contractor / Contractor's **Suitably qualified ecologist**

EPR	Mitigation measure	Accountability
	Clearance of trees must be undertaken within the same non-breeding season (between 1 April and 31 July) as the hollows are decommissioned. Hollows that cannot safely be accessed for active monitoring must be confirmed to be vacant prior to clearance in accordance with **EPR** 1G.10.	
1G.11	Confirmation of vacancy and clearance If there is no safe access for active monitoring, hollow vacancy will be confirmed outside breeding season (between 1 April and 31 July) as follows: Passive monitoring will continue twice a day for an hour (in accordance with **EPR** 1G.6 and **EPR** 1G.7), for up to five consecutive days until vacancy can be confirmed. Once all viable hollows are determined by the ecologist to be vacant, the tree can be approved for clearance by the ecologist and must be cleared on the day of approval. Following clearance, all viable hollows must be inspected by the ecologist In the event that injured fauna is present, a Bonorong (0447 264 625) must be contacted, and **suitably qualified wildlife carer** engaged. Any wildlife-related incidents must be reported to **TI** immediately. **TI** will notify the Conservation Assessment Branch of the **NRE Tas** And/or **DCCEEW** in accordance with relevant permit conditions.	Contractor / Contractor's **Suitably qualified ecologist** / **TI**'s project representative

EPR 1H – Roadkill management

EPR	Mitigation measure	Accountability
1H.1	**Daylight hours** and **night-time hours** must be assessed on a weekly basis (to allow for seasonal variation) and communicated to all construction personnel.	Contractor's Project Environmental Advisor
1H.2	Where Tasmanian devil or quoll roadkill mortalities are expected to increase by more than 10% (as determined by a traffic impact assessment and a roadkill assessment), speed limits for project vehicles travelling on all local roads and private roads must be set at a maximum of 80 km/hr during **daylight hours** and 60 km/hr during night-time, except where: • The existing signed speed limit (including for any temporary traffic management) is lower than these limits. • High devil or quoll activity has been identified (as shown on **CEPs**). Night-time speed limits for project vehicles on these roads will be limited to 20 km/h on private roads and 40 km/hr on public roads (see also EPR 1F.9). Speed limits must be signed using semi-permanent, project specific signage and enforced for all construction personnel, including any sub-contractors. Implementation of these limits is to be staged by construction phase (i.e. only applies in those periods when roadkill mortality is predicted to increase by 10% or more).	Contractor
1H.3	Advisory speed recommendations of 60 km/h during **night-time hours** must be in place for project vehicles travelling in or commuting to the Project Area using State roads other than the Bass Highway, Frankford Road, and Port Sorrel Road. All vehicles travelling on these roads must adhere to any night-time advisory signage.	Contractor
1H.4	Advisory signage (e.g. 'slow down dawn to dusk') will be installed where high devil or quoll activity has been identified (as shown on **CEPs**).	Contractor
1H.5	The use of heavy vehicles is restricted to **daylight hours**, except where night-time use is an essential traffic management measure, or daylight use is prevented due to extreme weather. In these circumstances, heavy rigid vehicles will have a maximum speed limit of 60 km/hr.	Contractor
1H.6	All project vehicles must be fitted with a passive high-frequency animal repellent device (which emits an ultra-sonic sound wave at speeds above 50 km/h). The installation and operation of these devices will be audited periodically.	Contractor
1H.7	No animals are to be deliberately killed with vehicles. Any animals that are inadvertently killed through vehicle strike must be immediately removed from the road (where safe to do so) to at least 20 m from the road edge or over the nearest fence line to reduce the likelihood of secondary kill. Killed marsupials must be checked for the presence of a joey, in accordance with the marsupial pouch checking guide (Animal Rescue Cooperative, ND). If animals are	Contractor

EPR	Mitigation measure	Accountability
	injured Bonorong (0447 264 625) must be contacted immediately for advice. Injured animals must be handled in accordance with advice provided by WIRES Wildlife Rescue.	
1H.8	Animals hit by project vehicles must be recorded, including species, condition, date, time, location coordinates, and any noteworthy circumstances (e.g. pouch young). Data will be reported: • By all project staff to the Contractor's Project Environmental Advisor immediately • By the Contractor's Project Environmental Advisor to **TI** on a weekly basis in the format specified by **TI** • By the Contractor's Project Environmental Advisor to **NRE Tas** on a monthly basis (via the Tasmanian Roadkill Reporter app, or online at https://nre.tas.gov.au/wildlife-management/living-with-wildlife/tasmanian-wildlife-roadkill/report-a-roadkill-sighting) • By **TI** to **DCCEEW** on completion of construction.	Contractor / Contractor's Project Environmental Advisor / **TI**
1H.9	Roadkill search and recording will be undertaken on a daily basis for those roads being actively used by project vehicles at that stage of construction (i.e. those where roadkill mortalities are expected to increase by more than 10%), including internal roads, private roads and the following local roads (depending on the stage of works): • Moriarty Road • Wesley Vale Road • Oppenheims Road • Hermitage Lane • Chapel Road • Woodbury Lane • Wrights Lane • Mills Road • Squeaking Point Road • Appleby Road • Cornelius Road • Churchills Road • Native Plains Road • Devils Road • Morris Road • Greens Creek Road	Contractor

EPR	Mitigation measure	Accountability
	State roads are not required to be monitored as they are included in the Department of State Growth's roadkill monitoring program. Killed or injured animals identified through monitoring must be dealt with in accordance with **EPR** 1H.7. Recording and reporting requirements under **EPR** 1H.8 apply.	
1H.10	Roadkill data collected by the project must be independently reviewed by a **Suitably qualified ecologist** at a minimum of every six months, to determine if further mitigation measures are required to reduce the frequency and quantity of roadkill.	Contractor's **Suitably qualified ecologist**

EPR 1I – Threatened flora and vegetation communities

EPR	Mitigation measure	Accountability
1I.1	A pre-clearance search for C. caudata and C. tonellii will be undertaken: • During the peak flowering period (late October to early December, noting that flowering times can be variable across the state and may vary between species). Peak flowering should be verified locally before undertaking pre-clearance search and surveys should be undertaken 5 days either side of peak flowering dates. • The pre-clearance search area is defined as all potential habitat within the construction corridor (as shown on the **CEPs**) plus a 20 m buffer of the construction corridor. • The whole pre-clearance search area is to be surveyed by a minimum two people walking parallel adjacent transects 5 m apart. Transects are to be walked in both directions and if an occurrence is found, the immediate surrounds will be thoroughly searched. • Personnel will include a minimum of one suitable qualified orchid expert and the remainder will be **suitably qualified ecologists.**	Contractor's **Suitably qualified ecologist**.
1I.2	A 10 m **exclusion zone** (flagged) must be established around any occurrences *Caladenia caudata* (tailed spider orchid) known or identified within 50 m of the **construction corridor**.	Contractor's Project Environmental Advisor
1I.3	Known populations of C*aladenia tonellii* (robust fingers) must be buffered by a minimum of 50 m and be clearly demarcated on construction plans and on the ground to avoid any impacts to this population. This must be conducted at the same time as pre-clearance surveys to have confidence of the extent of the population.	Contractor's Project Environmental Advisor
1I.4	The **construction corridor** must be fenced when passing areas with known occurrences of *Caladenia* sp. to prevent impacts to *Caladenia tonellii* (robust fingers) and *Caladenia caudata* (tailed spider orchid). Fencing must be sufficient to prevent vehicle access to areas outside the Construction Corridor but not to limit wildlife movement.	Contractor's Project Environmental Advisor
1I.5	If impacts to *Caladenia* sp. cannot be avoided, consultation must be undertaken with **DCCEEW**. No impacts to *Caladenia caudata* (tailed spider orchid) or C*aladenia tonellii* (robust fingers) are permitted, except in accordance with advice from **DCCEEW** and a valid permit to take under the *Threatened Species Protection Act 1995* (Tas).	Contractor's Project Environmental Advisor / **TI**
1I.6	No impacts to *Persicaria decipiens* (slender waterpepper) are permitted, unless undertaken in accordance with a valid 'Permit to Take' under the *Threatened Species Protection Act 1995* (Tas). All impacted occurrences of this species must be rehabilitated with tube stock of *Persicaria decipiens* (slender waterpepper) from locally sourced seed to offset the impact to this species.	Contractor's Project Environmental Advisor

EPR	Mitigation measure	Accountability
1I.7	The **construction corridor** is to be clearly demarcated and reduced as much as possible in areas mapped as containing *Persicaria decipiens* (slender waterpepper) (as shown on **CEPs**).	Contractor
1I.8	In areas within 30 m of patches of the Tasmanian Forests and Woodland Dominated by Black Gum (*Eucalyptus ovata*) or Brookers Gum (*Eucalyptus brookeriana*) (as shown on **CEPs**), the **construction corridor** is to be reduced to the minimum width (6 m) width. No clearance of this Threatened Ecological Community is to occur. The extent of any other clearance required must be clearly delineated on any plans and on the ground, with works, vehicles, and materials excluded from any area not contained within the works area. Where the reduced corridor still encroaches within 30m of the Threatended Ecological Community, a **suitably qualified arborist** will be consulted to assess root structural and integrity impacts prior to any clearance or excavation.	Contractor
	See also	
1.4	Tree protection zones (**TPZs**) will be delineated by markers, construction tape webbing or other barriers by the Contractor's Project Environmental Advisor. Equipment, plant, vehicles, or material must not be stored within the **TPZ**. Where a full **TPZ** cannot be maintained, a **suitably qualified arborist** will be consulted to assess viability of keeping the tree. In assessing the viability, the **suitably qualified arborist** will: • Prepare an assessment report of the tree/s to be impacted; • Supervise and document all works carried out within the TPZ of retained trees; and • Conduct post-construction inspection of trees to determine whether incursion will lead to loss. Impacted trees are to be retained to the maximum extent possible to preserve the nesting value for relevant species.	Contractor's Project Environmental Advisor **/ Suitably qualified arborist**
13.13	**Rehabilitation near occurrences of *Caladenia* sp.** Facilitated natural regeneration of any disturbed area within 50 m of optimal C. tonellii habitat must allow threatened orchid species every opportunity to utilise the disturbed open ground. If natural regeneration is at odds with rehabilitation plans required for other purposes, then it is recommended that planting density of shrubs, rushes, and sedges is minimal within areas immediately adjacent to optimal habitat (the area equivalent to the pre-clearance search area).	Contractor

EPR 2 – Weeds, pests, and disease

EPR	Mitigation measure	Accountability
2.1	A Weed and Disease Management Plan (WDMP) must be prepared by the Contractor, in accordance with the Weed and Disease Planning and Hygiene Guidelines (DPIPWE, 2015),Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens (NRM South, 2010), and Hygiene protocols for the control of diseases in Australian frogs (Murray, et al., 2011). The WDMP must incorporate specific requirements for working within the Warrawee Conservation Area, and specific landowner requirements. **TI**'s project representative will be responsible for reviewing and approving the Weed and Disease Management Plan.	Contractor/**TI**'s project representative
2.2	Weed control will be undertaken within the **construction corridor** in accordance with the Weed and Disease Management Plan (to be developed by the contractor prior to construction). Weed control will be staged by construction phase and undertaken prior to construction commencing and following completion of construction works. Chemical control will be undertaken by an operator who holds a current **NRE Tas** Commercial Operators Licence and **NRE Tas** Certificate of Competency. Consultation with the relevant landowner will be undertaken prior to chemical weed control.	Contractor
2.3	Areas identified on the **CEPs** as known weed/pathogen infested/infected areas within the **construction corridor** will be marked on ground as management areas prior to commencement of construction, with the exception of areas of known potential habitat for **BCF** (as shown on CEPs).	Contractor
2.4	All construction vehicles, machinery, and equipment will be cleaned in accordance with the Tasmanian Washdown Guidelines for Weed and Disease Control (DPIPWE, 2004) or alternative best practice at least as effective as the Guidelines. Washdown will be undertaken: • Prior to equipment/machinery arriving on site. • After operating within an infested/infected area, or after transporting weeds or soil known to be infected with a weed seed or plant pathogen. • Prior to moving equipment/machinery between properties which fall within different freshwater sub-catchments (as defined by the Conservation of Freshwater Ecosystem Values (CFEV) Sub-Catchments layer on LISTMap), or when required by Landowner Access Agreements (LAAs).When entering or leaving an area of GGF habitat or dispersal route (see **EPR** 1C). The location of washdown points will be identified in the WDMP (see **EPR** 2.1), with at least one point defined per sub-catchment. Washdown points will include effective effluent management systems as outlined in the Tasmanian Washdown Guidelines for Weed and Disease Control (DPIPWE, 2004). A vehicle/equipment wash-down register will be maintained by the Contractor for audit by **TI**.	Contractor/**TI**

EPR	Mitigation measure	Accountability
2.5	The site induction for construction personnel will include communication of the WDMP (see **EPR** 2.1) and training on hygiene protocols, exclusion areas, and washdown procedures.	Contractor's Project Environmental Advisor
2.6	All project personnel will clean their boots prior to arriving on site after working within an infested/infected area, prior to moving equipment/machinery between properties as required by LAAs, when entering and leaving an area of GGF habitat or dispersal route, and prior to working within streamside reserves or in proximity to waterways. Portable wash baths for washing boots will be used throughout the **construction corridor**. Hands, arms, knees, etc. should also be cleaned to remove debris and washed or wiped with a suitable disinfectant prior to and after working in an area of GGF habitat or dispersal route. It is preferable to do this before entering the vehicle or moving to another site.	Contractor
2.7	Only biocides endorsed by the Australian Pesticides and Veterinary Medicines Authority will be used. There will be no spraying within 5 m of aquatic habitat or remnant native vegetation areas. Application of herbicides will be in accordance with the Guidelines for Safe and Effective Herbicide Use Near Waterways (DPIPWE, 2012). Removal of weeds within areas mapped as GGF habitat or dispersal routes must be through using manual methods. No use of biocides within areas mapped as GGF habitat or dispersal routes is permitted.	Contractor
2.8	Only access tracks/roads approved by the **TI**'s project representative shall be used when accessing the **construction corridor**.	Contractor/**TI**'s project representative

EPR 3 – Watercourses

EPR	Mitigation measure	Accountability
3.1	Trench excavation will be used for all watercourse crossings, except where a **Suitably qualified ecologist** has determined there will be a significant impact on **MNES**, or **HDD** is impractical, Pipeline watercourse crossings that will be installed via **HDD** are identified on the **CEPs**. Methods for HDD and trenching are described in EPRs 3.14 and 3.15.	Contractor/**TI**'s project representative
3.2	The alignment of access tracks will avoid crossing watercourses where practical. Where it is necessary for access tracks to cross a watercourse, existing structures will be used (where available), or a temporary crossing for access will be constructed. The location of temporary crossings required for access is to be determined in consultation with the **TI**'s project representative.	Contractor/**TI**'s project representative
3.3	The installation of temporary access crossings must minimise disturbance and allow for the flow of water through the crossing (e.g. through culverts). Following completion of construction, all temporary access crossings will be removed and disturbed areas rehabilitated.	Contractor
3.4	Machinery activity in watercourses is to be minimised at all times. Machinery, equipment and vehicles will be regularly maintained to prevent leaks of hazardous substances, such as fuel and hydraulic fluid. Machinery not in operation must not be stored in watercourses. Other equipment, such as generators and pumps, must be bunded in accordance with the Bunding and Spill Management Guidelines (EPA Tasmania, 2015)).	Contractor
3.5	All materials required for pipeline watercourse crossings will be scheduled to be delivered to site so as to minimise the period of time the watercourse is disturbed.	Contractor
3.6	Where pipeline watercourse crossings are to be installed via **HDD**, no trenching is to occur within 2m of the bank of the watercourse.	Contractor
3.7	Where excavation in a watercourse cannot be completed in a single shift, and flow cannot be pumped around the work area with a portable pump, the flow will be diverted around the excavation site and then re-inserted back into the main flow of the watercourse downstream - typically the deepest part carrying the bulk of the current. Watercourse diversion will be achieved by constructing a cofferdam, berm or temporary channel. A cofferdam will be constructed using sandbags, clean rock, steel sheeting, inflatable dams (e.g. AquadamTM) or other non-erodible material. Clean rock is rock of varying type and size that contains no fines, soil, wastes or contaminants. The temporary diversion channels will be protected by lining them with non-erodible materials to the bank.	Contractor
3.8	All works in waterways must be managed and monitored to avoid impacts on aquatic fauna.	Contractor

EPR	Mitigation measure	Accountability
3.9	If excavation in a watercourse is unavoidable, excavated material will be stockpiled and in-filled in the same order as excavation. The contours of the watercourse is to be reinstated consistent with the pre-construction conditions and surrounding landform.	Contractor
3.10	When conducting watercourse crossings through known potential habitat (as identified on the **CEPs**) existing woody debris and other in-stream substrate will be left in place where practical. If works require this material to be removed from the stream, this will only be a temporary removal, and any debris (large logs or stumps) will be returned to the stream post-construction for aquatic fauna and flora habitat and natural stream function. These should be signposted to indicate where they need to return to.	Contractor
3.11	Aquatic spill kits shall be available for all works within, or near watercourses.	Contractor
3.12	Silt curtains must be used in waterways around activities that present a risk of sediment disturbance or sedimentation.	Contractor
3.13	**Horizontal Directional Drilling procedure** • Pipelines must be installed an appropriate depth below the stream bed to prevent exposure of the pipe in the future as the streambed erodes. The highest point of pipe or casement must be at least 1m below bed level. • Where vehicle or machinery access across the waterway is required, it should be ensured that excessive disturbance of the stream bed and banks do not result from activities. • Any disturbance should not cause erosion or suspension of sediment (see **EPR** 4). • No temporary structures are to be erected within the waterway that may constitute a barrier to fish passage for more than 24hrs.	Contractor
3.14	**Trenching procedure** • Pipelines must be installed an appropriate depth below the stream bed to prevent exposure of the pipe in the future as the streambed erodes. This may require that where the streambed is found to be constituted by erosive material, a greater depth is necessary. The highest point of pipe or casement must be at least 1m below bed level. • Where vehicle or machinery access across the waterway is required, it should be ensured that excessive disturbance of the stream bed and banks do not result from activities. • Installation of pipelines through waterways with Australian Grayling present only occurs during low flow conditions between the months of January to April. • Bed composition and profile must be returned to pre-works conditions.	

EPR	Mitigation measure	Accountability

	• Any scour protection installed in the bed of a waterway must be installed at a minimum of 30cm below bed-level and covered with bed material that is naturally present within the same waterway.
	• Any engineered erosion control materials such as geotextile products are installed so that they will not be exposed to or enter the waterway under extreme weather conditions or over time as a result of erosion.
	• Backfill material used within the bed and banks of a waterway must:
	  ○ be obtained locally and replicate material existing within the waterway.
	  ○ be free of contamination including but not limited to acid sulphate soils, heavy metals, hydrocarbons.
	• Where riparian vegetation is removed or disturbed, revegetation is conducted within 6 months of completion of works.
	• Where trenching occurs in perennial waterways, or during any flow conditions other than cease to flow, the below requirements must be met:
	  ○ Temporary diversion, damning or obstruction of water flows must occur for a maximum of 7 days.
	  ○ Any temporary coffer dams constructed in the waterway use material that is free from contamination as described above.
	  ○ All coffer dam material is removed from the waterway following construction except where it meets the criteria for appropriate back-fill material as described above and does not alter the profile of the waterway.	

3.15	**Water crossing monitoring** All water crossings are to be inspected after at least 12 months, and within 24 months of completion of works during low-flow conditions to ensure that: • Revegetation is likely to be successful • No significant erosion of the bed and banks is occurring because of the works • No infrastructure installed under or adjacent to the waterway has been exposed because of erosion. Where works have resulted in a change to hydrology, a **suitably qualified aquatic fauna expert** is engaged and remedial works conducted (if appropriate) to ensure no ecological impacts that may impact Australian Grayling occur.	**TI / suitably qualified aquatic fauna expert**
	See also: EPR 13 - Rehabilitation and reinstatement.	

EPR 4 – Sediment and erosion

EPR	Mitigation measure	Accountability
4.1	**Erosion and Sediment Control Plan** An Erosion and Sediment Control Plan (**ESCP**) must be prepared by the Contractor, in accordance with Erosion and Sediment Control – the fundamentals for development in Tasmania (TEER, 2023). **TI**'s project representative will be responsible for reviewing and approving the **ESCP**. Due to the physical and temporal scale of the project, **ESCP** may be written and implemented in stages as appropriate (to be determined based on the construction schedule and in consultation with the **TI**'s project representative). In accordance with Erosion and Sediment Control – the fundamentals for development in Tasmania (July 2023), the **ESCP** must contain the following: • Site plan(s), including plan name, document version, date and author, and stage (if part of a series of staged **ESCP**s). Site plans must have a north point, scale, all property boundaries, and contours. • General soil description • Site layout, including location and approximate volume of soil disturbance, and stockpile locations. • Watercourses • Existing stormwater infrastructure • Location and details (dimensions, lining, and/or velocity control) of all proposed temporary drainage controls (including diversion drains and internal drains directing 'clean' runoff to a level spreader) • location and details of all proposed erosion controls, including location of vegetation to be retained, with **exclusion zones** clearly marked • location of sediment controls (including the location and design of stabilised site access points) • location of wash-out area and associated controls for potentially polluting activities and machinery cleaning • a statement of who is responsible for establishing and maintaining all controls (including contact details) • the installation sequence for different controls • the maintenance program for controls	Contractor / **TI**'s project representative
4.2	**Water Quality Management Plan** A Water Quality Management is to be prepared and implemented during construction works to ensure suspended sediment and turbidity remain within Default Guideline Values for Aquatic Ecosystems of the Mersey Catchment (EPA, 2021) and the ANZECC guidelines for water quality (ANZECC, 2000).	Contractor's Project Environmental Advisor

EPR	Mitigation measure	Accountability

	Appropriate monitoring sites are to be selected as follows:
	• Upstream:
	  ○ Located upstream of all watercourses crossing works and potential sedimentation inputs from the site
	  ○ Downstream of any confluences with significant creeks, streams or rivers
	  ○ Not to be undertaken less than 10m or further than 200 m upstream from the site.
	• Downstream:
	  ○ Located downstream of all construction sediment inputs (from both point and diffuse sources)
	  ○ Upstream of any confluences with significant creeks, streams or rivers
	  ○ Not be undertaken less than 20m or further than 100 m downstream of the construction site.
	• Monitoring to be undertaken by a suitably qualified person and is to be conducted in accordance with the following:
	  ○ Daily readings start at least one day prior to construction commencing.
	  ○ Minimum three upstream and downstream readings taken daily once construction has commenced:
	  ○ Prior to the commencement of daily works
	  ○ During daily works
	  ○ At the completion of daily works
	  ○ At any other time that there is a visible change in turbidity downstream resultant from site activities.
	• All water quality readings to be checked against the SWISA Turbidity Management Framework and actions taken as necessary. Where parameters exceed those specified in the Water Quality Management Plan or CEMP, works must immediately be ceased, and appropriate remedial action taken until parameters meet the above requirements.
	• A sediment curtain is installed downstream of the works to reduce the impacts of sediment disturbance.
	Sediment traps, bags, or basins are used during dewatering or where otherwise necessary to mitigate discharge of highly turbid water back to the waterway.	

4.3	All construction personnel must undergo training on the function, installation, and maintenance of erosion and sediment controls. All construction personnel must read and understand their responsibilities under the respective sections of **ESCP**.	Contractor

EPR	Mitigation measure	Accountability
4.4	Erosion and sediment controls (including diversion drains) identified in the **ESCP** will be installed prior to any ground disturbance unless impractical (e.g. when mechanical installation means are required).	Contractor
4.5	Diversion drains will be installed in locations identified in the **ESCP** to divert clean run-off from disturbed areas within the site. All clean diverted water must be directed to a stable drainage area (via a level spreader). Diversion drains will be lined with appropriately selected and installed geotextile, matting, or rock, or rock check dams will be created to reduce velocity of run-off.	Contractor
4.6	Run-off that cannot be diverted from disturbed areas will be captured/treated through an appropriate sediment control, as identified in the **ESCP**.	Contractor
4.7	Sediment laden water captured on site will be preferentially re-used on site (e.g. for dust control)	Contractor
4.8	Scour protection will be installed in locations identified in the **ESCP**, where the pipeline is likely to be affected by erosion.	Contractor
4.9	Material will be stockpiled in locations identified in the **ESCP**, away from drainage lines, on flat or gently sloping land. Stockpiles will be built as low, flat-topped, elongated mounds, less than 2m high. A soil bank or berm will be installed on the upslope side of stockpiles to divert water flow. A sediment fence or berm will be installed 1–2m downslope of the stockpile. The ends of the sediment fence must 'return' upslope at either end to capture and allow ponding of localised runoff from the stockpile.	Contractor
4.10	Stockpiles will be secured and covered with fabric or plastic prior to high intensity forecasted rain and/or wind.	Contractor
4.11	Trenching works will be completed in manageable segments (maximum 500 m) that can be progressively completed and backfilled. Trenches will be backfilled with subsoil and compacted. Topsoil will be applied and mounded to allow for soil settling prior to revegetation.	Contractor
4.12	Stabilised site access points will be constructed in locations identified in the **ESCP**, with these locations to be used as the main points of access to the **construction corridor**.	Contractor
4.13	The area of soil disturbed and exposed to erosion will be minimised at all times through staging earthworks, minimising clearance, and undertaking progressive rehabilitation in accordance with a Reinstatement and Rehabilitation Plan (see EPR 13) approved by **TI**'s project representative. Erosion controls will be installed in areas of soil disturbance, as identified in the **ESCP**.	Contractor/**TI**'s project representative
4.14	Existing ground conditions and wet weather forecasts will be taken into consideration prior to undertaking earthworks. Ground disturbing works will be stopped during high-intensity rainfall or run-off events (until conditions have returned to normal).	Contractor

EPR	Mitigation measure	Accountability
4.15	There is nil risk of dispersive/sodic soils in the **construction project area** according to the Tasmanian government LISTmap layer 'Soil Vulnerability – Sodicity Hazard'. If sodic soils are discovered, development should avoid if possible, and otherwise minimise disturbance to topsoil and vegetation in these areas, including excavation and subsoil exposure.	Contractor
4.16	Erosion along backfilled trenches will be prevented by appropriate means such as trench blocks (i.e. trench/sack breakers) and compaction of backfilled soils.	Contractor
4.17	Erosion and sediment controls will be inspected weekly (?) and maintained to ensure the performance target is met. In addition, erosion and sediment controls will be inspected before, during, and after high-intensity rainfall or run-off events (if safe to do so).	Contractor
	Disturbed areas will be shaped to suit the surrounding landform and minimise erosion. Re-profiling of the site to achieve soil stability and congruity with the surrounding landscape will be undertaken. A minimum 2 horizontal:1 vertical batter on side slopes is considered suitable to assist stabilisation. Excess rock or clean fill will be removed for beneficial reuse (in accordance with the **EPA** Tasmania **AMM** for the disposal of Clean Fill Type 1 and Type 2) or disposed of at an appropriately licenced facility (in accordance with *Environmental Management and Pollution Control (Waste Management) Regulations 2020* (Tas)). Disturbed areas will be rehabilitated in accordance with the EPR 13 – Rehabilitation and Reinstatement.	Contractor

EPR 5 – Noise and vibration

EPR	Mitigation measure	Accountability
5.1	Standard construction hours will be restricted to 7am-6pm Monday to Friday, 8am-6pm Saturday, and 10am-6pm Sundays and public holidays within the relevant municipality (per *Environmental Management and Pollution Control (Miscellaneous Noise) Regulations 2004* (Tas)), unless otherwise approved by the **TI**'s project representative.	Contractor/**TI**'s project representative
5.2	All construction equipment, vehicles and plant will be regularly serviced and maintained according to the manufacturer's recommendations, or more frequently if required, to minimise noise generation. Construction equipment, vehicles and plant will be fitted with noise abatement devices (e.g. mufflers, engine covers). Where fitted, engine covers must remain closed when machinery is in use.	Contractor
5.3	High noise generating works (e.g. blasting) will be undertaken in accordance with project specific approvals within standard construction hours.	Contractor
5.4	Where intermittent high frequency noise poses a risk of disturbance, and pending safety requirements, the least noise-intrusive reversing alarms must be used.	Contractor
5.5	Temporary site access roads and site compounds will be sited as far away as practicable from **noise sensitive premises**.	Contractor
5.6	Noise generating equipment (e.g. generators) will be sited away from **Noise sensitive premises** and/or contained within noise enclosures.	Contractor
5.7	Construction equipment, vehicles and plant will be switched off or throttled down to a minimum when not in use.	Contractor
5.8	Additional site-specific measures, such as noise attenuation barriers, are to be implemented when noise levels at the nearest **Noise sensitive premises** is likely to exceed **Background noise level (LA90,T)** by more than 5 dB(A), or otherwise cause **environmental nuisance**.. Any noise monitoring undertaken must be in accordance with the Noise Measurement Procedures Manual (EPA Tasmania, 2008).	Contractor
5.9	If a noise complaint is received in relation to the activity, the complaint must be reported to **TI** within 24 hours.	Contractor

EPR 6 – Air quality and light

EPR	Mitigation measure	Accountability
6.1	All construction equipment, vehicles and plant will be regularly serviced and maintained according to the manufacturer's recommendations, or more frequently if required, to minimise emissions.	Contractor
6.2	Known sources of odour/emissions will be sited away from sensitive receptors, with consideration for prevailing wind conditions.	Contractor
6.3	Vehicle speed limits will be set for project roads (in accordance with **EPR** 1H - R oadkill management plan). Vehicle speed limits will be observed by all construction vehicles to minimise potential dust generation on unsealed roads.	Contractor
6.4	Access roads will be constructed out of appropriate materials to minimise dust generation.	Contractor
6.5	Spray carts and/or dust suppressants will be used on dust generating areas as required.	Contractor
6.7	Burning of any materials is prohibited on site, unless in accordance with an approved vegetation management plan.	Contractor
6.8	Loads must be covered where practicable when hauling dust-generating material to or from site.	Contractor
6.9	Light pollution must be minimised through: • Changing duration of lighting – switching off when not required • Reducing trespass of lighting - shielding / directing • Changing spectrum of lighting • Changing intensity of lighting	
6.10	If all available methods of dust stabilisation fail to suppress dust and it continues to result in unacceptable impacts, construction activities may need to be temporarily halted until dust generating conditions subside or are rectified.	Contractor
6.11	Works will be suspended during high-wind conditions (50 km/h and above) if the above measures are insufficient to protect ambient air quality from pollution.	Contractor

EPR 7 – Heritage

EPR	Mitigation measure	Accountability
7.1	Areas indicated on **CEPs** as **exclusion zones** will be clearly marked in the **construction corridor** prior to construction commencing. **Exclusion zones** will be verified on site by an archaeologist. Spatial data for the **exclusion zones** will be made available to the Contractor by **TI**. There will be no impacts inside an **exclusion zone**. Information on the locations of **exclusion zones** (including how they are marked) will be included in the site induction.	Contractor / **TI** / Consulting Archaeologist
7.2	Where impacts to heritage items have been approved under a statutory approval, such as a permit or a works exemption, potential impacts will be mitigated in accordance with any applicable permit or exemption conditions.	Contractor
7.3	Site inductions will include information on Aboriginal heritage and historic heritage management and mitigation.	Contractor
7.4	In the event a potential heritage value is uncovered during construction, the relevant Unanticipated Discovery Plan will be followed for: • Aboriginal heritage (values other than skeletal material) • Historic heritage (heritage objects or features) • Skeletal material	Contractor
7.5	<u>Unanticipated Discovery Plan – Aboriginal heritage (values other than skeletal material)</u> In the event a suspected Aboriginal heritage value (other than skeletal material) is uncovered during construction, the following process must be followed, in accordance with the Unanticipated Discovery Plan (AHT, 2024): 1. Any person who believes they have uncovered Aboriginal values should notify all employees or contractors working in the immediate area that all earth disturbance works must cease immediately. 2. A temporary **exclusion zone** of at least 10m should be established around all visible Aboriginal values to protect the suspected Aboriginal site. No unauthorised entry or works should be allowed within this **exclusion zone** until the suspected Aboriginal values have been assessed by a consulting archaeologist, Aboriginal Heritage Officer or Aboriginal Heritage Tasmania (**AHT**) staff member. 3. Contact **AHT** on 1300 487 045 as soon as possible but no later than 48h from the discovery of the value and inform them of the discovery. Documentation of the find should be emailed to aboriginalheritage@dpac.tas.gov.au as soon as possible. **AHT** will then provide further advice in accordance with the *Aboriginal Heritage Act 1975* (Tas). A copy of the Unanticipated Discovery Plan (AHT, 2024) must be kept on site during all ground disturbance and construction work. All construction personnel must be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (Tas).	Contractor/Consulting Archaeologist/Aboriginal Heritage Officer/**AHT**

EPR	Mitigation measure	Accountability
7.6	<u>Unanticipated Discovery Plan – historic heritage objects or features</u> In the event a suspected historic heritage object or feature is uncovered during construction, the below process will be followed. 1. Any person who believes they have uncovered a suspected heritage object or feature must notify any machinery operators that are working in the immediate area that earth disturbance works must stop immediately. 2. Establish an **exclusion zone** with a buffer of 5 m around the suspected heritage object or feature. No entry or disturbance within the **exclusion zone** is permitted until the suspected heritage object or feature has been assessed by a qualified heritage consultant and appropriate mitigation measures identified. 3. A qualified heritage consultant must be engaged to assess the suspected heritage object or feature. The heritage consultant will notify and consult with Heritage Tasmania, the Heritage Council and the local council. 4. If the heritage object or feature is movable, then it should be recorded, photographed and a decision should be made as to whether the object or feature should be re-located. If the heritage object or feature is unmovable, then it should be recorded, photographed, and a Heritage Impact Assessment and Heritage Management Plan developed. This should be then submitted to Heritage Tasmania, the Heritage Council and the local council for review and advice on possible outcomes.	Contractor / Qualified heritage consultant
7.7	<u>Unanticipated Discovery Plan – human skeletal material</u> In the event a suspected human skeletal material is uncovered during construction, the below process will be followed, in accordance with the Unanticipated Discovery Plan (AHT, 2024): 1. Contact Tasmania Police (131 444) immediately. Under no circumstances should the suspected human skeletal material be touched or disturbed. The area should be managed as a crime scene. It is a criminal offence to interfere with a crime scene. 2. Any person who believes they have uncovered human skeletal material should notify all employees or contractors working in the immediate area that all earth disturbance works cease immediately. 3. An **exclusion zone** with a buffer of 50 m around the suspected human skeletal material must be established. No entry or disturbance within the **exclusion zone** is permitted until the suspected human skeletal material has been assessed by the Police and/or coroner. 4.	Contractor/Tasmania Police/Coroner/**AHT**

EPR 8 – Environmentally hazardous materials

EPR	Mitigation measure	Accountability
8.1	The storage, handling and transport of dangerous goods, explosives and dangerous substances must comply with the requirements of relevant state Acts and any regulations thereunder, including: • *Work Health and Safety Act 2012* (Tas) • *Explosives Act 2012* (Tas) • *Dangerous Goods (Road and Rail Transport) Act 2010* (Tas).	Contractor
8.2	All environmentally hazardous substances on site must be registered on a project dangerous goods register.	Contractor's Project Environmental Advisor
8.3	Storage and handling of environmentally hazardous materials must be handled in accordance with the applicable standards and safety data sheets for the substance.	Contractor
8.4	Environmentally hazardous material storage areas will be suitably designed to adequately contain any spills and leaks (i.e. bunded in accordance with the Bunding and Spill Management Guidelines (EPA Tasmania, 2015)).	Contractor
8.5	Spill kits must be located adjacent to all hazardous substance storage units, in refuelling and maintenance areas, and at other designated locations throughout the site. The types and sizes of spill kits on site must be selected based on the types and volumes of materials stored. Aquatic spill kits shall be available at project sites near waterways.	Contractor
8.6	Refuelling within 30 m of a watercourse is not permitted.	Contractor
8.7	Management of environmentally hazardous materials must be covered in site inductions. Construction staff working with environmentally hazardous materials will undergo spill response training, as well as safe handling and storage training.	Contractor's Project Environmental Advisor
8.8	Containment devices, including bunds, separators and catch trays, will be used wherever there is a risk of spillage.	Contractor
8.9	Construction vehicles, equipment and plant will be regularly inspected and maintained to prevent leaks of hazardous substances, such as fuel and hydraulic fluid.	Contractor
8.10	An Emergency Response Procedure, which includes a spill procedure in accordance with the Bunding and Spill Management Guidelines (EPA Tasmania, 2015), must be prepared by the Contractor. **TI**'s project representative will be responsible for reviewing and approving the Emergency Response Procedure.	Contractor/**TI**'s project representative

EPR 9 – Bushfire risk

EPR	Mitigation measure	Accountability
9.1	Regular and timely consultation must be undertaken with all relevant regulatory authorities and all relevant fire restrictions, notification requirements, and permitting procedures must be followed.	Contractor's Project Environmental Advisor
9.2	Construction must be scheduled to avoid high fire danger days to the extent practicable. Potential spark-generating activities, such as rock breaking or ripping, shall not be undertaken on days of total fire ban as declared by the Tasmania Fire Service.	Contractor
9.3	Construction activities that pose a fire risk in fire prone areas must be discontinued during extreme high fire danger periods.	Contractor
9.4	Welding blankets or other fire-resistant mats will be used at welding or grinding stations in areas where minimal clearing of vegetation has occurred.	Contractor
9.5	Machinery or equipment that may pose a potential fire hazard, e.g. petrol driven pumps, generators and other potential ignition sources, will be sited aways from flammable materials, including vegetation, as far as practicable. When this is not practicable, flammable materials, including vegetation, will be cleared from the immediate vicinity.	Contractor
9.6	Machinery will be maintained and operated so as to comply with relevant fire safety standards	Contractor
9.7	Machinery and vehicles not in use will be parked in areas free of flammable material and vegetation (e.g. not parked over shrubs, tall grass or cleared vegetation residue).	Contractor
9.8	Appropriate firefighting equipment will be stored at all work and site offices in accordance with the requirements of the relevant State fire protection requirements. Equipment will be of the required standard and will be inspected and well maintained throughout the construction phase	Contractor
9.9	Construction machinery and vehicles will be equipped with firefighting equipment (e.g. water knapsacks, rake hoes and fire extinguishers) as appropriate.	Contractor
9.10	Available construction equipment, such as earthmoving machinery and water trucks, will be kept on standby at the construction site during work operations in high fire risk areas for fire control if required.	Contractor
9.11	Construction workforce bushfire education and training will be undertaken, as appropriate, addressing fire prevention and safety, personnel responsibilities, and basic fire suppression.	Contractor
9.12	When potential spark-generating activities are conducted in a fire risk in fire prone areas a fire watch shall be maintained throughout the activity, and for not less than two hours afterwards.	Contractor

EPR	Mitigation measure	Accountability
9.13	An Emergency Response Procedure, including a fire mitigation and management plan, shall be prepared by the Contractor. **TI**'s project representative will be responsible for reviewing and approving the Emergency Response Procedure.	Contractor / **TI**'s Project Representative

EPR 10 – Waste

EPR	Mitigation measure	Accountability
10.1	The waste management hierarchy is to be applied to all potential waste streams: avoidance, reuse, recycling, energy recovery, repository storage (for future treatment/recovery), treatment, and disposal or permanent containment.	Contractor
10.2	Designated and clearly signed bins will be provided at site compounds and work sites for all waste streams. Waste will be routinely disposed of at an appropriately licenced facility.	Contractor
10.4	Opportunities for beneficial reuse of excess rock or clean fill material (meeting the definition of Fill Material (Level 1) under Information Bulletin No. 105 – Classification of Contaminated Soils (EPA Tasmania, 2018) will be investigated with surrounding landowners. If reuse is not possible, clean fill will be disposed of in accordance with the **AMM** for the Disposal of Clean Fill Type 1 and Type 2 (EPA Tasmania, 2024), or at an approved waste management facility. Any beneficial reuse outside of the **construction project area** will be assessed on a case-by-case basis to ensure there are not impacts to **MNES**.	Contractor
10.5	Hydrotest water will be re-used along test sections of the pipeline where possible.	Contractor
10.6	Hydrotest water will be preferentially discharged to land or storage dam for re-use (e.g. for irrigation) where consistent with the requirements of the *State Policy on Water Quality Management 1997*, i.e. re-use: • can be carried out in an environmentally sustainable manner • incorporates the use of best practice environmental management • will not compromise the water quality objectives for surface or groundwaters • will not give rise to an unacceptable risk to human or animal health; and • involves less net environmental risk than other strategies for dealing with the wastes.	Contractor
10.7	Controlled waste within Tasmania must be handled in accordance with the *Environmental Management and Pollution Control (Waste Management) Regulation 2020* (Tas).	Contractor
10.8	Where temporary toilet facilities are used, documented periodic inspections must be undertaken and a pump out schedule implemented and maintained.	Contractor
10.9	Burial or burning of waste is not permitted.	Contractor
10.10	Concrete and concrete washout are controlled wastes (code C100, basic solutions or bases). Excess concrete and concrete washout is not to be discharged to unprepared land, stormwater, or adjacent to waterways. Concrete washout facility must always be used, and must be bunded and stored on site (e.g. in a lined earthen bund or	Contractor

EPR	Mitigation measure	Accountability
	concrete washout bag) until the conclusion of works and then disposed of at an appropriately licenced facility or other beneficial reuse (e.g. road lining) approved by the **EPA**.	
10.11	Site compounds and work sites will be maintained to an orderly and hygienic standard.	Contractor
10.12	Copies of any approvals or licences obtained for waste disposal must be retained and a copy send to **TI** to ensure legal compliance.	Contractor/**TI**'s project representative

EPR 11 – Construction traffic

EPR	Mitigation measure	Accountability
11.1	Site access maps and Vehicle Movement Plan will be developed by the Contractor showing routes to be used by all construction personnel to access the **construction corridor**. The site induction will include information on site access routes.	Contractor
11.2	Public access via the site access routes will be restricted through adequate signage, gates and site security.	Contractor
11.3	All construction traffic will adhere to designated roads and associated speed limits, including on internal tracks.	Contractor
11.4	Dilapidation surveys will be completed for major access roads to be used during construction, to be identified in consultation with **TI**'s project representative. Access roads will be restored to to the extent required by the relevant road authority following completion of construction.	Contractor/**TI**'s project representative
11.5	Any damage to private property caused during access (e.g. to fences) will be reported to **TI**'s project representative immediately.	Contractor/**TI**'s project representative

EPR 12 – Contaminated soil and acid sulphate soils

EPR	Mitigation measure	Accountability
12.1	Acid sulphate soils (**ASS**) management plans must be developed by the Contractor for sites of known **ASS** and potential acid sulphate soils (**PASS**) (as shown on the **CEPs**) in accordance with the Tasmanian Acid Sulphate Soil Management Guidelines (DPIPWE, 2009). The plans must: • Identify the area of **PASS/ASS** • Provide procedures for the management of **ASS/PASS**, including stockpiling, remediation, treatment (lime dosing), and reuse/disposal, in accordance with relevant guidelines and standards. • Identify approval requirements for disposal	Contractor
12.2	In the event unanticipated **PASS** materials are discovered or suspected, the following must be undertaken: • Works must cease in the area, and **TI**'s project representative notified immediately, with works to remain ceased until approval to proceed has been given. • Field screening tests must be conducted in accordance with the Tasmanian Acid Sulphate Soil Management Guidelines (DPIPWE, 2009) by a **Suitably qualified expert**. • Laboratory testing must be undertaken in the event **PASS** are identified from the screening test. • In the event **ASS** are identified from the laboratory testing, an **ASS** management plan must be developed in accordance with the Tasmanian Acid Sulphate Soil Management Guidelines (DPIPWE, 2009). • Works will recommence upon approval of the management plan by **TI**.	Contractor/**TI**'s project representative/ **ASS** consultant
12.3	All known areas of **ASS/PASS** will be communicated to site personnel via site induction, toolbox talks, pre-starts and **CEPs**.	Contractor
12.4	Water runoff from **ASS/PASS** stockpiles must be contained, treated and suitably disposed of.	Contractor
12.5	If potentially contaminated materials are discovered or suspected, works must cease in the area and **TI**'s project representative notified immediately. Any potentially contaminated soil is to be sampled, tested, classified, and disposed/treated in accordance with **EPA** Information Bulletin 105 – Classification of Contaminated Soils (EPA Tasmania, 2018).	Contractor/**TI**'s project representative
12.6	When rehabilitation is required, the selection of species must include those known to be tolerant of low pH, with a preference to sedges, rushes and grasses due to their higher level of tolerance and their capacity to act as filters in acidic conditions.	Contractor

EPR 13 – Rehabilitation and reinstatement

EPR	Mitigation measure	Accountability
13.1	Rehabilitation must commence as soon as practicable according to seasonality, and no later than 30 days after the completion of construction works at each site. The timing of planting must consider seasonal and local climatic conditions, such as autumn and spring planting windows, as well as the seasonal fluctuations in rainfall. It is essential that each area and section is rehabilitated progressively, starting within 30 days, and adjusted according to seasonal variations.	Contractor
13.2	Site specific planting plans must be developed for each revegetation location. Any planting plan must: • incorporate a clear explanation of species selection, planting density and transition of species towards the target TasVeg community and associated structural components. • the plan must consider the location conditions and likelihood of success. • include monitoring measures to track implementation success i.e. 70% plant survival rate over 24 months	Contractor
13.3	Site preparation must include weed control and soil preparation (refer to Revegetation projects – a best practice guide for Tasmania, NRM North 2016)	Contractor
13.4	Revegetation is to be undertaken using local provenance seed from the corresponding vegetation community which has been impacted. Species must align to the TasVeg community description. The NRM South and Understorey Network municipal plant species list provide a guide of appropriate species for propagation and restoration – see http://www.understorey-network.org.au/municipalities.html.http://www.understorey-network.org.au/municipalities.html	Contractor
13.5	http://www.understorey-network.org.au/municipalities.htmlPlanting densities should be undertaken with the aim of reinstating the TasVeg community structure as defined by the Vegetation Condition Benchmarks e.g. 40% Tree Cover, 30% shrub cover and 30% grass and herbs for a specific community type. Planting densities should be undertaken with the aim of reinstating the TasVeg community structure as defined by the Vegetation Condition Benchmarks e.g. 40% Tree Cover, 30% shrub cover and 30% grass and herbs for a specific community type.	Contractor
13.6	http://www.understorey-network.org.au/municipalities.htmlRevegetation methods must minimise the potential introduction of weeds and pathogens. This includes using appropriately cleaned seed sources and tube-stock from nurseries which adhere to strict biosecurity protocols.	Contractor

13.7	http://www.understorey-network.org.au/municipalities.htmlPlants must be protected from herbivores through fencing areas or installing plant guards. Reducing plastic pollution is required and plant guards should be cardboard where they provide adequate protection and or if another material is used they must be recycled.Plants must be protected from herbivores through fencing areas or installing plant guards. Reducing plastic pollution is required and plant guards should be cardboard where they provide adequate protection and or if another material is used they must be recycled.	Contractor
13.8	http://www.understorey-network.org.au/municipalities.htmlMeasures for rehabilitating and reinstating watercourse crossings must include: Measures for rehabilitating and reinstating watercourse crossings must include: • Consideration of flow dynamics and the likelihood of rehabilitation success • The use of coarse woody debris or other natural structures to slow water where river characteristics are likely to limit the success of rehabilitation • Dense replanting with10,000 plants/ha must be used where stream morphology allows i.e. slow sweeping bends and straight stretches. • Plantings must include a mixture of trees, understorey and ground cover species to ensure quick coverage of bare ground and longer-term binding of soil with deep rooted plants	Contractor
13.9	http://www.understorey-network.org.au/municipalities.htmlReinstatement of habitat structural elements for small mammals: • Any habitat features (such as timber, rocks, and other materials) that can be removed during pipeline construction should be stored and replaced within the construction area as part of the restoration work. • If habitat features are stockpiled on the edge of the construction corridor, they must be assessed for wildlife use by a qualified ecologist before they can be reinstated back into their original location.	Contractor
13.10	Species selection for restoration of specific habitat should include grasses and sedges which are quick growing and essential for cover such as Poa spp and Lomandra spp	Contractor
13.11	Long term monitoring must be undertaken on a 5 yearly basis to ensure rehabilitation and restoration targets are achieved.	**TI**
13.12	Swift Parrot (*Lathamus discolor*) habitat restoration focuses on forage reinstatement. The forage trees must be either *Eucalyptus globulus* or *E. ovata*. Dense plantation style restoration is appropriate for forage with density of 10,000 trees per hectare. This density encourages fast growth and flowering.	
13.13	**Rehabilitation near occurrences of *Caladenia* sp.**	Contractor

	Facilitated natural regeneration of any disturbed area within 50 m of optimal C. tonellii habitat must allow threatened orchid species every opportunity to utilise the disturbed open ground. If natural regeneration is at odds with rehabilitation plans required for other purposes, then it is recommended that planting density of shrubs, rushes, and sedges is minimal within areas immediately adjacent to optimal habitat (the area equivalent to the pre-clearance search area).

3. Contractor management plans

The **EPRs** identify and reference management plans to be prepared by the contractor (post-approval of the project), summarised in Table 3-1. These management plans require detailed information on the specific site conditions and construction methodology that are currently unknown. The management plans must meet the minimum standards identified the **EPRs** (including requirements relating the **MNES**) and will be subject to review and approval by **TI**. The management plans must incorporate any relevant conditions of approval issued for **the Project**.

Table 3-1 Summary of management plans to be prepared by the contractor (post approval)

Management plan	**Relevant EPR**	**Reference document/standards**
Weed and disease management plan	**EPR** 2 **EPR** 1B.11	• Weed and Disease Planning and Hygiene Guidelines (DPIPWE, 2015) • Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens (NRM South, 2010) • Hygiene protocols for the control of diseases in Australian frogs (Murray, et al., 2011)
Erosion and sediment control plan	**EPR** 4 (exc. 4.2)	• Erosion and Sediment Control – the fundamentals for development in Tasmania (TEER, 2023)
Emergency response procedure	**EPR** 8.10 **EPR** 9.13	• Bunding and Spill Management Guidelines (EPA Tasmania, 2015) • Bushfire guidelines
Vehicle Movement Plan	**EPR** 11.1	N/A
ASS Management Plans	**EPR** 12.1	• Tasmanian Acid Sulphate Soil Management Guidelines (DPIPWE, 2009)
Water quality monitoring plan	**EPR** 4.2	• Default Guideline Values for Aquatic Ecosystems of the Mersey Catchment • An Introduction to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000)

4. Construction Environmental Plans and Construction Environmental Tables

The Construction Environmental Plans and Construction Environmental Tables will be developed for each section of the **construction corridor** to detail the location-specific values/impacts and required mitigation measures.