Rehabilitation implementation

6.1 Life Of Mine Rehabilitation Schedule

Figure 8 depicts the current extent of disturbance at the Mine Site (i.e. the mining domains). Plans 3 and 4 present the indicative rehabilitation schedule for the Mine Site by depicting the areas of focus for rehabilitation research and studies at the Mine during each 5-yearly increment between the commencement of this Plan and mine closure. Whilst rehabilitation of the Waste Rock Emplacements at the Mine Site has commenced, rehabilitation monitoring reports undertaken in September 2020 identified targets for improvement of rehabilitation outcomes.

It is noted that successful rehabilitation of the Mine is dependent on the outcomes of rehabilitation research and trials identified in Section 9. Further studies are necessary to determine the causes and appropriate corrective action. As such, the life of mine rehabilitation schedule is indicative only.

The Mine has been under care and maintenance since 2016. Mining operations are planned to recommence in June 2023, for a period of 3 years to support the mining operations at Avoca Tank, before decommissioning, rehabilitation and closure of the Mine. As only parts of the Mine will be required during the operation of the Avoca Tank Mine, rehabilitation of the remaining areas will continue and active steps will be taken to progress the understanding of the scope of works required and an appropriate implementation schedule.

The rehabilitation schedule for the Mine, as presented on **Plan 3** and **Plan 4**, is summarised as follows.

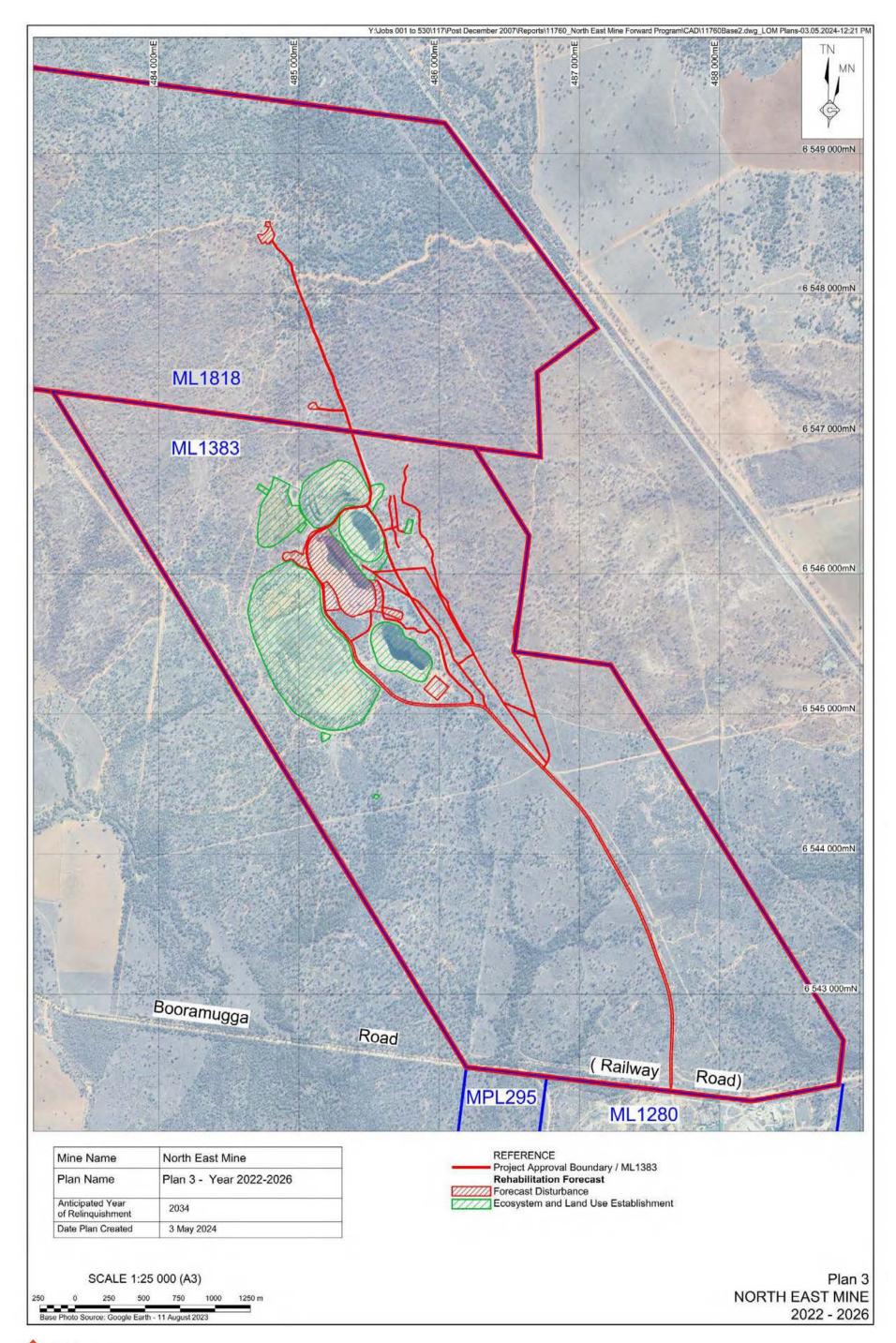
• 2022 to 2026 (**Plan 3**):

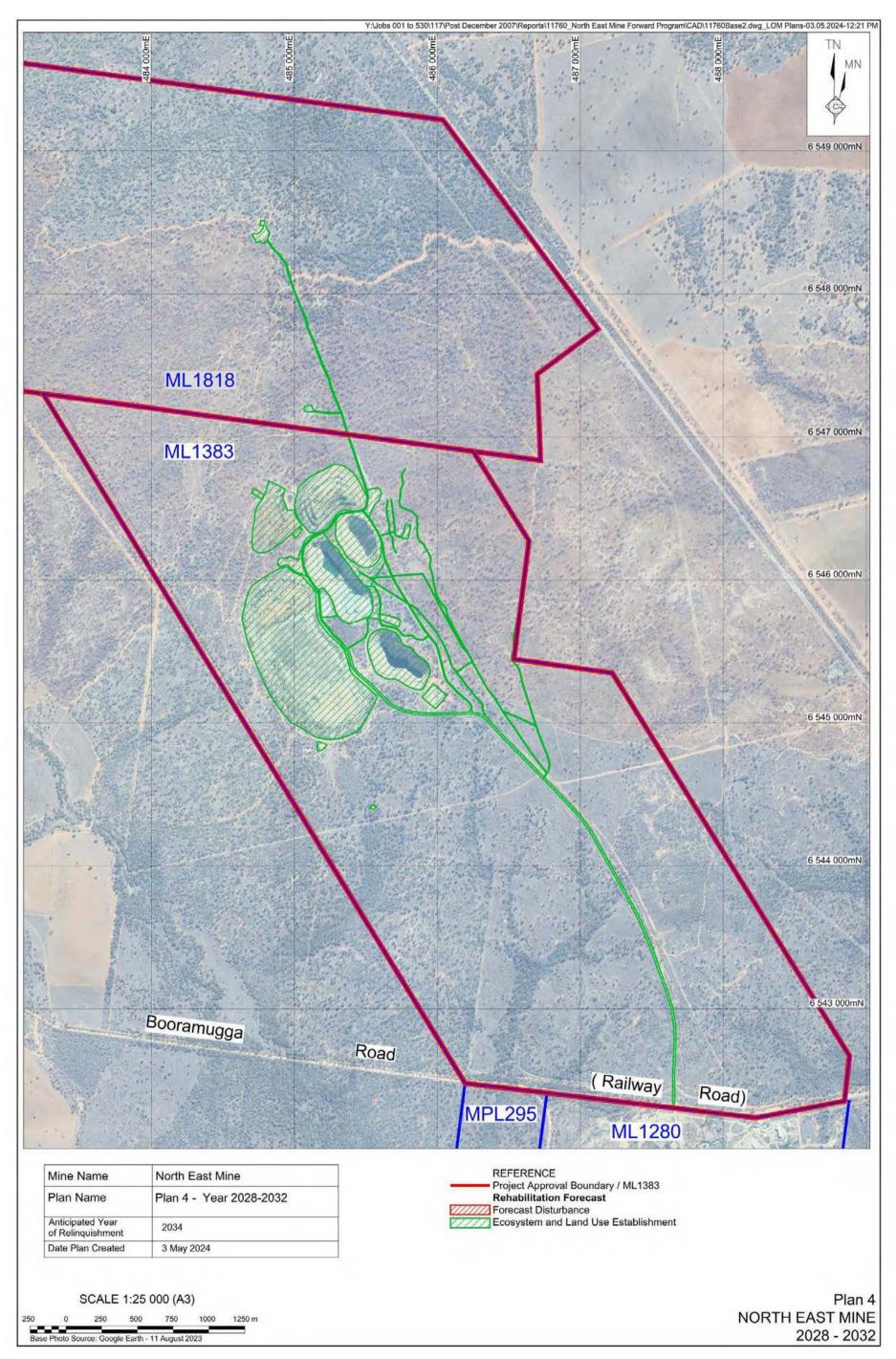
- No specific rehabilitation will be completed on the Larsens, Hartmans and North East Pits during this time due to the recommencement of mining operations.
- Rehabilitation research and studies focused on the Waste Rock Emplacement landform to occur early 2023, including landform evolution modelling.
- Implement corrective actions identified in research and studies for waste rock emplacements and final voids in early 2024.
- Waste Rock Emplacement remedial revegetation works to be completed by June 2024.
- Infrastructure decommissioning and demolition works to occur following cessation of mining operations in 2026.

• 2027 to 2031 (**Plan 4**):

- Whole of site decommissioning, landform establishment, growth medium development and ecosystem and land use establishment and developments phases of rehabilitation to occur across all mining domains.
- It is anticipated that the rehabilitation of all mining domains and the successful establishment of all final land use domains (up to the Ecosystem and Land Use Establishment phase, as a minimum) will be completed by 2035 with a further four years of monitoring and maintenance (to 2039).







Phases of Rehabilitation and General 6.2 **Methodologies**

6.2.1 Active Mining Phase

REHABILITATION MANAGEMENT PLAN

The following subsections provide a summary of the risks and opportunities for rehabilitation associated with the active mining phase across all mining domains within Mine Site. Each subsection also summarises the status and actions that are in progress to support rehabilitation of the Mine. These management measures will be applied during the active mining phase as progressive rehabilitation or site management in readiness for future rehabilitation activities.

6.2.1.1 Soils and Materials

Existing Environment

No further landforms or areas within the Mine Site are known or suspected to require capping as part of rehabilitation. Based on the above, this subsection only addresses topsoil and subsoil as growth medium. Information on existing capped emplacement areas within the Mine Site is provided in Sections 6.2.1.4.

Existing Assessments - Soils

Soils in the Girilambone-Hermidale region vary with specific location in depth and characteristics. Soils within the Girilambone region have been identified as consisting of sands, red-brown sandy gravels and colluvial soil. Silty clays and sandy loams predominate on the hill flanks and plains. The surrounding regional soil is generally consisting of two different soil landscapes, as identified in the EIS for the Avoca Tank Project (RWC, 2015). The Cobar Land System is comprised of shallow gravely loamy soils. The Mineshaft Land System has shallow, stony, sandy, and loamy soils.

No formal soils assessments have been conducted for the North East Copper Mine. However, test pitting within the Avoca Tank Mine Site undertaken by Mr Greg Stephenson of Tritton Resources Pty Ltd identified five different soil profiles. **Table 13** presents a brief description of each profile.

Soils within the ML 1818 are identified as Class 6 land, or land with very severe limitations in accordance with OEH (2012). This corresponds with the current land use for the Mine Site, which includes infrequent grazing agriculture.

Ongoing Controls

Growth Medium

No formal soil assessment has been conducted for the North East Mine Site. However, results from soils assessments and testing that have been undertaken for other mines within the Tritton Copper Operations is used to inform soil management.

In order to preserve the quality and quantity of the soil resource a number of measures are in place, including progressive topsoil stripping, minimised re-handling of topsoil, and visual inspections as part of site environmental and rehabilitation monitoring. Soil resources have been progressively stripped during previous mining activities and stored through stockpiling within the Mine Site for progressive and future use in rehabilitation activities (see stockpile locations on Figure 8).



Table 13
Soil Profiles

Profile	Description
Soil Profile 1	Red coloured, sandy loam with abundant gravel from the surface to 35cm. Below this, the soil becomes more clay rich, with less gravel. Roots of trees/shrubs were observed to a depth 32cm.
Soil Profile 2	Red coloured, sandy loam with abundant gravel from the surface to 39cm. Below this, the soil becomes more clay rich, with occasional gravel. Roots of trees/shrubs were observed to a depth 27cm.
Soil Profile 3	Red coloured, sandy loam with abundant limited gravel to a depth of 25cm. Below this, gravel is abundant to a depth of 34cm where the soil becomes more clay rich, with rare gravel. Roots of trees/shrubs were observed to a depth 25cm.
Soil Profile 4	Red coloured loam with rare gravel, except at the surface where gravel is common. Below a depth of 25cm, the soil becomes more clay rich. No roots were observed.
Soil Profile 5	Red coloured loam with abundant gravel from the surface to 23cm. Below this, the soil becomes more clay rich, with abundant gravel. Roots of trees/shrubs were observed to a depth 40cm.
Source: Tritton Reso	urces Pty Ltd.

The majority of topsoil and subsoils that were stockpiled during development of the Mine Site have been used during rehabilitation of the waste rock emplacements. Approximately 7,600m³ of topsoil is stockpiled for future use in rehabilitation. No further topsoil or subsoil stripping is planned at the Mine Site.

Topsoil stockpiles are stored no higher than 2m to maintain the quality and integrity of the resource for future use in rehabilitation. Stockpiling areas are included in regular visual site inspections to identify potential impacts to stockpiled material, including damage from vehicle access, and weed and pest activity.

Controls to be Implemented

Soil and material resources within the Mine Site will continue to be managed in accordance with existing management practices.

Rehabilitation Requirements

• Topsoil and Subsoil (Growth Medium)

Based on current disturbances, approximately 61,500m³ of growth medium will be required for the rehabilitation of the Mine Site.

Based on the current growth medium stockpile register, approximately 7,600m³ of growth medium is currently stockpiled within the Mine Site.

Based on the above, there is potential for a deficit in growth medium of approximately 53,900m³, or approximately 88% of the total requirement.

The Company is in the process of undertaking a review of the topsoil and subsoil inventories for all three of the Company's Mine Sites within the Girilambone region to determine if there are adequate volumes of soil for rehabilitation activities.



6.2.1.2 Flora

Existing Assessments

Final land uses within the Mine Site generally consist of mixed native vegetation communities that are commensurate with surrounding vegetation and land uses. **Table 19** (refer Section 6.2.5.2) presents the targeted flora species for use in rehabilitation.

Existing Assessments

EnviroKey has undertaken multiple ecological assessments, over numerous years, within the Mine Site and at the Company's nearby operations. As a result, a comprehensive understanding of the Mine Site and surrounds has been developed. The following are ecological assessments that have been drawn upon for preparation of the current assessment.

- Flora and Fauna Study of the Murrawombie and North East Mine (ML 1280, ML 1383 and MPL 295), 2011 (EnviroKey, 2011a) within the Mine Site.
- Flora and Fauna Impact Assessment: Proposed ROM Pad Extension, TRL North East Site (ML1383), 2011 (EnviroKey, 2011b) covering an area immediately to the north of the Mine Site.
- Ecological Assessment: Proposed Avoca Tank Exploration Project, 2012 (EnviroKey, 2012a) covering an area to the north of the Mine Site.
- Ecology Assessment: Proposed Avoca Tank Mining Project, 2014 (EnviroKey, 2014) covering an area to the north of Mine Site.

The above previous ecological assessments undertaken by EnviroKey Pty Ltd were supplemented by resources describing the classification of vegetation communities in western NSW (Benson, 2006 and 2008 and Benson *et al.* 2006) and the OEH threatened species, populations and ecological communities of NSW predictor database (OEH, 2014a) to develop a representative status of the existing flora and fauna environment within the Mine Site.

The six plant communities identified as occurring within the Mine Site are shown on **Figure 6** and include:

- Benson ID 82 Western Grey Box Poplar Box White Cypress Pine tall woodland on red loams mainly of the eastern Cobar Peneplain Bioregion;
- Benson 72 White Cypress Pine Poplar Box woodland on foot slopes and peneplains mainly in the Cobar Peneplain Bioregion. This vegetation community occurs in one small cluster within Benson 103
- Benson ID 103 Poplar Box Gum Coolabah and White Cypress Pine Shrubby Woodland mainly in the Cobar Peneplain Bioregion;
- Benson ID 105 Poplar Box Grassy Woodland on flats mainly in the Cobar Peneplain and Murray – Darling Depression Bioregions;
- Benson ID 119 Sandplain Mulga Tall Shrubland Open Shrubland of the semiarid and arid climate zones; and
- Benson ID 176 Green Mallee White Cypress Pine very tall Mallee Woodland on gravel rises mainly in the Cobar Peneplain Bioregion.



Target Species and Communities

The proposed final vegetation types and covers are shown on **Plan 1** and include:

- Native Ecosystem Area consisting of modified native and exotic grassland plant communities within the Tailings Storage Facility mining domain; and
- Agricultural Grazing consisting of modified native and exotic woodland plant communities within all remaining areas of the Mine Site excluding the Active Mining Area and Water Management Area mining domains.

In summary, no specific Plant Community Types are proposed to be established as part of the final land use. Rather, the final vegetation types will consist of modified plant communities comprised of mixed native species commensurate with surrounding vegetation and land uses.

For the Native Ecosystem Areas, DnA Environmental (2024) state exotic pasture species are unlikely to persist in the semi-arid environment and will not be sustainable in the longer term without ongoing intervention. Therefore, native grasslands similar to those in the surrounding derived grassland areas are likely to provide the most reliable outcomes and sustainability of the vegetation cover system in the longer-term within the Native Ecosystem Areas. Exotic species may be considered suitable for use with native species within areas proposed to be managed for agricultural production where ongoing maintenance would form part of typical land management practices. Exotic species may also be used for more-rapid stabilisation of surfaces where required, to give time for native species to establish and eventually out-compete exotic species in the long term.

For the Agricultural – grazing areas, the reference plant communities will be the modified Poplar Box Grassy Woodlands (Benson ID103 and 105) that are common within and in the vicinity of the Tritton Copper Operations. DnA Environmental (2024) states that all remnant vegetation within the ML's, including the reference sites, have been subjected to some form of disturbance, in particular clearing, over grazing, erosion and "woody weed invasion". The reference sites are, however, typical of the local environment.

Further information is presented in Section 6.2.5.2 and **Table 19**.

Ongoing Controls

Management of flora within the Mine Site is undertaken in accordance with the:

- Flora and Fauna Management Plan: Tritton Mine (ML1544), Murrawombie Mine (ML1280), North East Mine (ML1383) and Avoca Tank Project (ML1818); and
- Weed Management Plan: Tritton Mine (ML1544), Murrawombie Mine (ML1280), North East Mine (ML1383) and Avoca Tank Project (ML1818).

These plans will continue to guide implementation of programs to limit and reduce impacts to native flora within the Mine Site.



Controls to be Implemented

General Management of Flora

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Management of flora within the Mine Site is undertaken generally in accordance with the *Flora* and *Fauna Management Plan* and *Weed Management Plan*. During rehabilitation, each Plan will continue to be used to guide implementation of programs to limit and reduce impacts to native flora and fauna within the Mine Site. Management of existing flora populations and resources within the Mine Site will help to maintain genetic integrity and ecosystem resilience throughout operations including rehabilitation.

Propagation Resource Management

Revegetation strategies will likely include a combination of the use of seeds and tubestock, where relevant. Management of seed resources is further discussed in Section 9.2.1.

Two main sources of seed material will be used during rehabilitation of the Mine Site:

- in-situ seed bank and other vegetative material within stockpiled growth medium; and
- seed collected from surrounding areas within and in the vicinity of the Mine Site
 that are owned and/or controlled by the Company, and areas where access and
 collection are permitted.

All seed and propagation material collection will be undertaken by or in consultation with suitably qualified revegetation practitioners.

Propagation material for woodland species will be sourced from local populations, where practicable. To promote retention of existing genetic integrity, DnA (2024) recommends sourcing material from viable, healthy populations ideally located within 20km of the Tritton Copper Operations.

DnA (2024) state that the areas of derived native grassland within and in the vicinity of the Mine Site are suitable for use as a source of propagation material. Dominant grasses within the local native pastures typically set seed early October – November (spring) and March – April (autumn) depending on seasonal conditions. DnA (2024) states the follow methods would be suitable for collection of mature seeds from surrounding native pastures.

- Hand collection (brushcutters, scythes, mower catchers).
- Mechanical brush-harvesters.
- Baling using conventional farm machinery.
- Silage harvesters.

In addition to the above, DnA (2024) identifies that planning for harvesting periods will be critical and will require consideration of the following key components.

- Identifying suitable areas for harvesting, including consideration of:
 - low weed density;
 - high diversity and abundance of desired species;
 - accessibility; and
 - proximity to the rehabilitation area to minimise costs;



- Engaging specialist contractors with suitable equipment, if required.
- Ensuring appropriate access rights are attainted, where required.
- Ensuring appropriate handling of collected materials.

As a result of the continued implementation of the above management plans and revegetation strategies, flora-related risks to rehabilitation are considered to be low.

The Company will begin a Seed Balance Strategy in late 2023 to ensure that sufficient seed is collected, or purchased, in order to achieve the rehabilitation objectives outlined in Section 4.2 (refer Section 9.2.1).

6.2.1.3 Fauna

Existing Environment

Existing Assessments

The following fauna assessments have been undertaken within and in the vicinity of the Mine Site.

- Flora and Fauna Impact Assessment: Proposed ROM Pad Extension, TRL North East Site (ML1383), 2011 (EnviroKey, 2011b) covering an area immediately to the north of the Mine Site.
- EnviroKey (2011b) Flora and Fauna Study for Murrawombie and North East Mine.
- EnviroKey (2014) Ecology Assessment: Proposed Avoca Tank Project, Girilambone, NSW.
- EnviroKey (2015) Ecological Assessment for the proposed Murrawombie Open Cut Extension, which included an assessment of the southern extent of the Mine Site.

In summary, several fauna species listed under the EPBC Act and the BC Act, have been identified as occurring within the Mine Site.

Target Fauna and Habitat

No specific target fauna species are identified as part of the proposed rehabilitation objectives for the Mine Site.

Notwithstanding the above, rehabilitation completion criteria relating to management of grazing pressure from native and introduced species will require specific management practices during rehabilitation.

Ongoing Controls

Ongoing management of fauna within the Mine Site is undertaken in accordance with the *Flora* and Fauna Management Plan. General management activities include:

- regular fauna monitoring;
- exclusion of stock from vegetated areas of the Mine Site;



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- regular pest monitoring and control;
- reduction in speed of mobile and heavy equipment in areas known to be populated or used by fauna;
- providing training and awareness to employees and contractors; and

Controls to be Implemented

The *Flora and Fauna Management Plan* will continue to be implemented during rehabilitation for general management of fauna within the Mine Site.

Management of grazing pressure through agricultural activities, exclusion fencing, and feral and native animal control programs will continue to be implemented to manage fauna-related risks for establishment of vegetation communities.

As a result of the continued implementation of the above management plans, fauna-related risks to rehabilitation are considered to be low.

6.2.1.4 Rock/Overburden Emplacement

Existing Environment

Waste Rock Emplacement

Waste rock mined during surface mining operations was placed within one of two Waste Rock Emplacements, as described in **Table 14** and as shown on **Figure 2**.

Table 14
Waste Rock Emplacement Summary

	Waste Rock Emplacemen	nt
Feature	Harmans/Larsons	North East
Area (approx.)	88.8ha	21.5ha
Height (approx.)	250m AHD	250m AHD
Number of 10m Lifts	3	3
Maximum Slope (approx.)	18%	18% (lower slopes)
		38% (upper slopes at angle of repose)
Volume (approx.)	6.3Mm ³	2.6Mm ³
Construction Completion Date	2000	2000

Waste rock mined during underground mining, including during the development of the Avoca Tank Project, is either placed directly underground as backfill within completed mining areas, or placed within the Hartmans Open Cut. When required, waste rock may be used as backfill in areas of observed instability.

Rehabilitation of the Waste Rock Emplacements was undertaken progressively during construction, with significant progress occurring following completion of the placement of waste rock. Since that time, certain areas within the emplacements have been identified where vegetation has failed to develop. The Company anticipates remedial action may be required in these areas prior to Mine closure.



Capping

Both the Hartmans/Larsons Waste Rock Emplacement and North East Waste Rock Emplacement were designed to allow encapsulation of Potentially-Acid-Forming (PAF) waste rock; however, due to revised characterisation of the material encountered during mining which resulted in significantly less PAF material being mined, only Hartmans/Larsons Waste Rock Emplacement was required to be used. Approximately <30,000 Bank Cubic Meters of PAF material was excavated then encapsulated within the emplacement.

Further information on the handling of PAF material within the Mine Site is provided in Section 6.2.1.8.

Ongoing Controls

No additional waste rock emplacements are required to be constructed within the Mine Site, other than the ongoing placement of waste rock within the Hartmans Open Cut.

Monitoring of the completed Waste Rock Emplacements occurs as part of routine regular site inspections and maintenance. Further information on ongoing environmental monitoring is provided in Sections 6.2.6 and 8.

Controls to be Implemented

The Company is in the process of commissioning a review of the current condition of the rehabilitation/revegetation for the waste rock emplacements. The anticipated scope of the review will include identifying the extent of the areas where vegetation has not developed as expected, as well as identification of the potential and/or likely causes. Following the results of the review, this Plan may be revised in accordance with any key recommendations given. Further information on potential remedial measures is provided in Section 6.2.6.

In addition to the above, the Company anticipates that Landform Evolution Modelling (LEM) may be required to identify potential long-term risks associated with the constructed landforms within the Mine Site. Further information on LEM and other long-term assessments is provided in Section 9.

6.2.1.5 Waste Management

Management of all wastes generated at the Tritton Operations is undertaken in accordance with the *Waste Management Plan*. Management of the use and disposal of hydrocarbons and chemicals is also undertaken in accordance with the *Hydrocarbon and Chemical Management Plan*.

It should be noted that no staff buildings, workshops or significant laydown areas are located within the Mine Site. Based on the above, management of waste material generated through activities located within the Mine Site is generally undertaken at either the Murrawombie or Tritton Mine Sites.



North East Mine and Avoca Tank Project

Waste produced at any mine within the Tritton Copper Operations is classified into different categories. These include:

- Process Wastes: includes acid sulphate soils, overburden material, general mine wastes, topsoils, subsoils and other processing wastes.
- Non-process Waste: includes any solid or liquid (or combination) that is leftover, surplus or an unwanted by-product whether of value or not, that is generated at any Aeries operation.
- Non-hazardous waste: Wastes which are not ignitable, corrosive, reactive or toxic.
- Hazardous Waste: Any waste containing significant quantities of a substance that may present danger to human health and/or the environment when released into the environment or is improperly managed.

Process Waste Management

Management of overburden (i.e., topsoils and subsoils) is discussed in Section 6.2.1.1.

Management of waste rock is discussed in Sections 6.2.1.4 and 6.2.1.8.

Non-process Waste Management

Waste disposal and materials handling practices at the Tritton Copper Operations aim to mitigate and manage any risks to the environment, including current and future land uses. In most cases, non-production waste will be collected on the relevant Mine Site and either disposed of within the landfill located at the Tritton Mine Site, or removed for disposal or recycling by a suitably qualified contractor. Table 15 presents an estimate of the non-production waste and briefly describes how each class of waste is stored and subsequently removed from Mine Site.

Minor maintenance or other administrative activities may occur at the Mine Site to maintain the condition of infrastructure or to service equipment used for progressive rehabilitation. Table 15 presents an estimate of the non-production waste and briefly describes how each class of waste will be stored and subsequently disposed of or removed from mines within the Tritton Copper Operations.

Table 15 **Non-Production Waste Management**

Page 1 of 2

Waste Type	Storage / Management	Removal / Disposal
	Covered bins or skips located at lunch areas, offices, outside workshops and elsewhere as required. Where these bins are located in open areas they will be fitted with animal proof lids.	Collected on a regular basis by a licensed contractor and transported to an appropriately licensed facility for disposal.
General Recyclables	Covered bins or skips located at lunch areas, offices, outside workshops and elsewhere as required. Where these bins are located in open areas they will be fitted with animal proof lids.	Collected on a regular basis by a licensed contractor and transported to an appropriately licensed facility for recycling.
Waste Oils and Greases	Placed within the bunded laydown pad within the workshop area at Murrawombie Mine Site. Where required, smaller, temporary storage containers may be positioned close to work areas, with the contents of those containers transferred to the larger storage tank.	Collected on an as needs basis by a licensed contractor and transported to an appropriately licensed facility for recycling.



Table 15 (Cont'd) Non-Production Waste Management

Page 2 of 2

Waste Type	Storage / Management	Removal / Disposal	
Batteries	Placed within a covered and marked used battery storage area at the Murrawombie Mine Site until removed from Mine Site.	Collected on an as needs basis by a licensed contractor and transported to an appropriately licensed facility for recycling.	
Tyres	Placed within a marked used tyre storage area at the Murrawombie Mine Site until removed from site.	Tyres will be disposed of at a licensed waste management facility or removed by a third party approved to recycle tyres.	
Scrap Metal	Stored in a specified area within the Murrawombie Mine Site's workshop area or elsewhere as required.	Collected on an as needs basis by a scrap metal recycler.	
Source: Tritton Resources Pty Ltd			

Management measures targeting the treatment and disposal of contaminated waste materials (e.g., contaminated growth medium) are detailed in Section 6.2.2.4.

6.2.1.6 Geology and Geochemistry

Existing Environment

The Company or its predecessors have been operating the North East Copper Mine since 1996. The Company has continued intermittent exploration within the Mine Site and on adjacent land since that time. As a result, the geology and mineralisation of the Mine Site are well understood.

Copper mineralisation occurs within a thinly laminated to massive lenticular quartzite horizon as well as within surrounding sericite-chlorite-quartz schists. Styles of mineralisation include: massive, thinly laminated to banded, disseminated as well as fracture fill-ins in oxidised rocks. Dominant copper-bearing minerals include malachite, chalcocite, native copper and chalcopyrite. Assessments completed for the original EIS for the Mine (RWC, 1990) identified that nine distinct ore types have been identified on the basis of mineralogical variations and associations.

Information on management of PAF material is presented in Sections 6.2.1.4 and 6.2.1.8.

Ongoing Controls

The geochemical characteristics of waste rock were considered during preparation of the *Waste Rock Characterisation and Management Plan* which incorporates the management of waste rock at the Mine Site and the Company's other operations. The waste rock has previously been assessed for its net acid generation potential, that is, the potential for sulphide materials within the waste rock to oxidise to form a low pH or acidic leachate when exposed to oxygen.

Section 6.2.1.4 describes the approved strategy for waste rock management and Section 6.2.1.8 describes the risks associated with material prone to acid mine drainage.



Controls to be Implemented

As a result of the historic mining and exploration activities undertaken within the Mine Site and surrounding land, and the proposed approach to managing waste rock at the Mine Site, the risks associated with unknown or unexpected geological or geochemical features is considered to be low. Based on the above, the *Waste Rock Characterisation and Management Plan* will continue to be implemented.

6.2.1.7 Material Prone to Spontaneous Combustion

As no material within the Mine Site is prone to spontaneous combustion, no specific risks to rehabilitation associated with spontaneous combustion have been considered.

6.2.1.8 Material Prone to Generating Acid Mine Drainage

Existing Environment

As described in Section 6.2.1.4, and Section 6.2.1.6, PAF waste rock has previously been generated at the Mine Site and within the Company's other operations in the region. PAF waste rock is identified based on resource definition drilling. The principal current source of PAF material for the Mine Site is material mined as part of the Avoca Tank Mine; however, ongoing testing has only identified very low levels of PAF material to date.

Waste rock material balances presented in the EIS for the Avoca Tank Mine identified a total of approximately 319kt of waste rock will be produced during underground mine development, classified as follows.

- Class 1 Weathered, non-acid forming waste rock suitable for use during rehabilitation operations as a subsoil growth medium.
- Class 2 Transitional and unweathered, non-acid forming waste rock with sulphur concentrations of <1%.
- Class 3 Potentially acid forming waste rock with sulphur concentrations of >1%. This class of waste rock would also include material where the acid generation potential is classified as "uncertain", if encountered.

Approximately 5,000m³ or 10,000t of PAF (i.e. Class 3) material is anticipated to be generated throughout the life of the Avoca Tank Mine.

Ongoing Controls

The Waste Rock Characterisation and Management Plan 2023 describes the process for testing, separation and management of acid forming materials for the Tritton Copper Operations. In summary, no further permanent storage/encapsulation of PAF material is anticipated to occur.

PAF waste rock brought to the surface will be managed in one of two ways.

• Initially the waste rock would be placed solely within the Hartmans Open Cut Pit. Once mining operations have progressed sufficiently, that material would preferentially be transported back underground and placed into completed stopes.



Once completed stopes become available for backfilling operations, potentially acid
forming waste rock would be placed directly into completed stopes and would not
be brought to the surface at all. Once placed within completed stopes, the potential
for further generation of acidic leachate would be limited as a result of the limited
availability of oxygen for oxidation reactions.

Based on an industry standard produced by Environment Australia and site expertise, rock samples are retrieved while in-situ in order to continuously build a database of compositional rock samples to enable effective management of the waste rock stream. The sampling and characterisation process is based on four overarching steps - Plan, Sample, Model and Check.

Formal sampling of waste materials within the Hartmans Open Cut Pit occurs at least quarterly in accordance with Company sampling procedures. In addition, visual inspections of recently deposited waste rock, combined with ad-hoc sampling of suspected PAF materials, is undertaken to further control risks related to Acid Mine Drainage.

Controls to be Implemented

The Waste Rock Characterisation and Management Plan describes the process for testing, separation and management of acid forming materials. Given the continued application of the Waste Rock Characterisation and Management Plan, and the implementation of the controls outlined in Section 3, the risk of acid mine drainage resulting from the ongoing operation of the Mine is considered to be low.

Historic operations have involved the placement of NAF waste rock in the emplacements on the Mine. Apparent failure of revegetation on these waste rock emplacements may be an indicator of acid generating materials. Investigations of the cause of revegetation failure will be undertaken under the rehabilitation program and include considerations of potential acid generation in landforms under rehabilitation.

6.2.1.9 Ore Beneficiation Waste Management

As no processing occurs within the Mine Site, no management measures related to rejects or tailings are required. Information on the management of these materials is provided in the RMPs for the Tritton Copper Mine.

It should be noted that the approval for the Murrawombie Copper Mine permits the construction of a Heap Leach Pad at the southern extent of ML 1383 and immediately north of the Murrawombie Mine Site. If constructed, the operation and rehabilitation of that Heap Leach Pad will be undertaken in accordance with the RMP for the Murrawombie Copper Mine.

6.2.1.10 Erosion and Sediment Control

Existing Environment

Erosion and sediment controls implemented at the Mine Site are described in detail in the *Erosion* and Sediment Control Plan included in the Water Management Plan for the Mine. There are moderate risks to erosion and sediment control associated with operation of the Mine.



Ongoing Controls

No surface water management infrastructure is required for the Avoca Tank Mine Site.

The Water Management Plan and the Erosion and Sediment Control Plan 2016 incorporate specific design, construction and maintenance protocols for erosion and sediment control structures in accordance with the requirements of Landcom (2004) and DECC (2008). In summary, clean and potentially contaminated water is separated through a series of sediment basins and diversion drains constructed throughout the Mine Site (see **Figure 10**). Existing water management has proved to be effective at separating and managing clean and potentially contaminated water.

Surface water is managed in accordance with the *Water Management Plan* and based on the categorisation of water into the following three categories.

- Clean Water runoff from non-operational, clean areas.
- Dirty Water runoff from disturbed areas containing levels of suspended solids.
- Contaminated Water runoff generated from operational areas that can lead to potentially contaminated water by means of concentrations from heavy metals, hydrocarbons, process slurry, acidification etc.

Therefore, the management of surface water at the Mine Site is guided by the following principles.

- diverting clean water away from disturbed areas;
- collecting coarse sediments in runoff from disturbed areas;
- collect and contain any chemicals or process solution within the system on site; and
- reuse of water where practicable for processing or dust suppression.

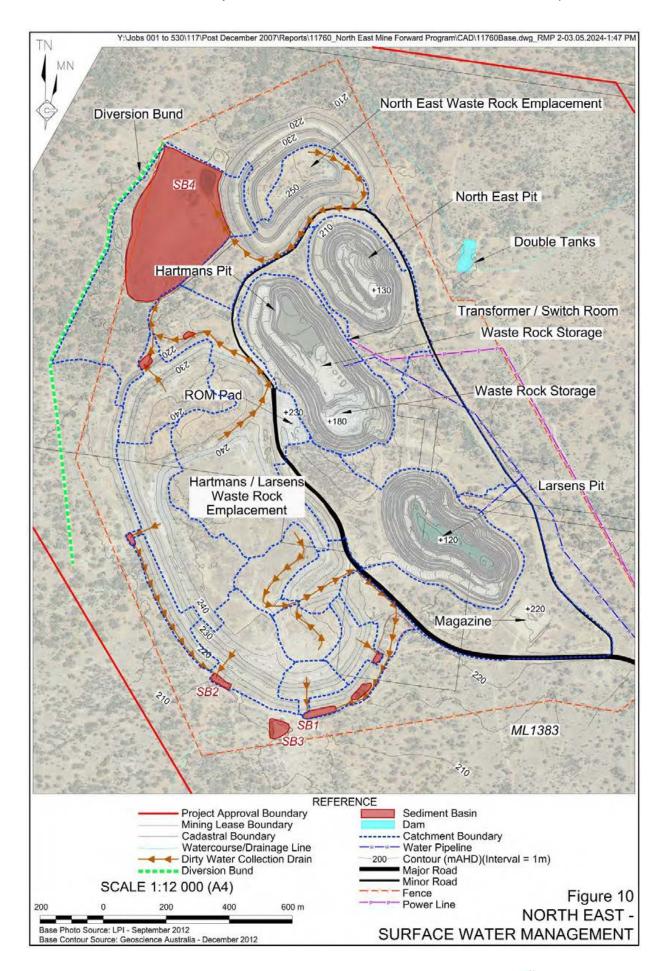
The Company utilises diversion drains or banks to direct runoff into various storages to reduce catchment size and divert clean runoff away from the site (**Figure 10**). Sediment retention basins are used in catchments where there are exposed soils but little to no risk of contamination occurring. Sediment basins are designed to capture and retain runoff up to the 5 day 90th percentile rainfall event. Containment dams are used to capture runoff from catchments containing potentially contaminated material. Storm water storage is for clean water entering the site from external catchments. Containment dams are designed to capture the volume of water from the 100 year 72-hour storm event. Water storage locations are presented on **Figure 10**.

Controls to be Implemented

The Water Management Plan and Erosion and Sediment Control Plan will continue to be implemented throughout rehabilitation of the Mine Site.

Erosion and sedimentation risks are likely to change as areas of the Mine Site progress through the stages of rehabilitation. The Company will undertake periodic reviews of relevant management plans in consideration of landform and land use changes as part of the rehabilitation and closure planning process. Additional erosion monitoring locations may be established across the Mine Site, as required.







Temporary erosion and sediment control measures that may be implemented during high erosion-risk periods/activities include but are not limit to the following.

- Installation of sediment fencing and/or straw bale filters to manage impacts of increased sediment generation on existing water management infrastructure and other downstream environments.
- Use of relatively fast germinating/establishing temporary ground stabiliser species such as sterile and/or agricultural pasture species (depending on advice from revegetation specialists.
- Use of organic/synthetic mulches and/or surface binding agents.

6.2.1.11 Ongoing Management of Biological Resources for Use in Rehabilitation

Management of stockpiled growth medium is described in Section 6.2.1.1.

Management of stockpile seedbanks includes the following.

- Stripping of vegetation with soils to maintain existing seedbanks and other biologically active components of soils.
- Stockpiling methods which promote plant development and growth (when respread) and minimise soil loss.
- Regular pest and weed monitoring and management, including weed control, to reduce pressure from grazing and competition.

Management of existing vegetation and plant communities within and in the vicinity of the Mine Site helps maintain ecosystem resilience and productivity. As the sourcing of propagation material from locally occurring species form the basis of revegetation strategies for the Mine Site (excluding exotic pasture species), these activities form part of an overall risk management strategy for management of biological resources.

Required Topsoil Depths

Current rehabilitation planning anticipates a minimum depth of 100mm of growth medium will be required for revegetation activities.

Propagation of Resources for Revegetation

Propagation of plant material will primarily be undertaken via germination of seed material (stored within re-spread soil), and primarily directly from material sown within areas undergoing revegetation.

Salvage and Storage of Habitat Structures

Salvage of habitat features for rehabilitation has progressively occurred over the development of the Mine Site. In general, habitat features such as tree hollows and large rocks have been directly relocated to non-disturbed areas of the Mine Site. Minor volumes of biological resources (i.e. woody material) have been stockpiled outside of key operational areas. Biological resource



stockpiles are recorded in the Biological Resource Stockpile Register, including the location and type of stockpile as well as a photographic record. It should be noted that no specific rehabilitation objectives relate to fauna and/or fauna habitat.

During any further disturbance activities, any significant habitat features will be salvaged and in first instance placed directly within un-disturbed areas of the Mine Site. If direct placement is not practicable, resources will either be stockpiled in existing stockpile locations, or within a new stockpile and subsequently recorded within the Biological Resource Register.

6.2.1.12 Mine Subsidence

Underground mining methods are modified to suit the grade and geometry character of the ore body, which will be determined over time as more data becomes available from drilling and development within the mineralisation. No subsidence is anticipated to occur within the Mine Site.

Open stope methods may use material recovered from temporary stockpiles within the open cuts as backfill. The backfilling of open stopes will prevent any subsidence due to mining. Minor subsidence risk will remain for any underground mining operation.

6.2.1.13 Management of Potential Cultural and Heritage Issues

39 Aboriginal heritage sites are known of be located within ML1383 and ML1818. Items identified in previous surveys of land surrounding the Mine Site are displayed on **Figure 2** and will remain in the landscape following mine closure.

Ongoing Controls

Management of heritage across the Tritton Copper Operations is undertaken in accordance with the *Cultural Heritage Management Plan*, which identifies the key management structure and responsibilities for all personnel and contractors.

Key management measures relating to heritage include the following.

- Heritage training as part of site inductions for all personnel and contractors.
- Avoid disturbance of all known heritage sites within the Mine Site as far as practicable.
- Requirement for Surface Disturbance Permits prior to any disturbance, including vegetation removal.
- Exclusion of all activities within 50m of a known heritage site without specific approval from the General Manager.
- Implementation of an Unexpected Finds Protocol.
- Installation of temporary fencing/flagging around identified heritage sites within 50m of proposed disturbance areas.



Controls to be Implemented

During rehabilitation, management of heritage within the Mine Site will continue to be undertaken in accordance with the *Cultural Heritage Management Plan*.

Given the highly disturbed nature of the existing landscape it is not likely that any items of cultural significance remain to be located. No specific post-mining management obligations are or will be required following rehabilitation of the Mine Site. In addition, it is not expected that rehabilitation of the Mine Site will present any risks to non-Aboriginal heritage. Notwithstanding, prior to mine closure the Company will undertake heritage survey and risk assessments to ensure that mine closure activities do not impact on heritage within the Mine Site.

6.2.1.14 Exploration Activities

No surface exploration activities are planned within the Mine Site. Notwithstanding, in the event of exploration activities requiring rehabilitation, all exploration-related disturbance will be rehabilitated in accordance with relevant guidelines and industry best practice. This may include the following key activities.

- Removal and/or lawful disposal of all consumables and waste.
- Removal of drill cores.
- Cap and rehabilitate all drillholes.
- Removal of all surface infrastructure and mobile plant.
- Visual assessment of residual disturbance/rehabilitation areas to identify potential contaminants.

6.2.2 Decommissioning

6.2.2.1 Site Security

No public access to the Mine Site is currently permitted, with access restricted by rural fencing.

The open cut voids at the Mine Site are currently surrounded by suitable safety bunds which will be maintained throughout the life of the Mine. The adequacy of the bunds will be reassessed, as necessary, during and following completion of mining operations in the open cuts. The bund will be repaired / upgraded, as required. Following decommissioning and rehabilitation, the open cut voids will continue to be secured by safety bunds and, if necessary, a fence will be installed, and access restricted through a lockable gate.

During rehabilitation of the Waste Rock Emplacements, the areas will be fenced, if required, to minimise as far as practicable inadvertent disturbance by mine-related activities and to control grazing by pest species, domestic stock and native fauna until the revegetated areas have become sufficiently established. Once vegetation has become sufficiently established, exclusion fencing will be managed as and in conjunction with surrounding agricultural land management.



6.2.2.2 Infrastructure to be Removed or Demolished

Table 16 presents a list of the site features to be decommissioned to achieve the final land use, including identification of key management actions that may be required. While no conditional requirements for the decommissioning of specific infrastructure are included as part of the approval for the Mine, general commitments for the removal of key infrastructure are included as part of the EIS, as shown in **Table 3**. Notwithstanding, any infrastructure not required for the final land use will be subject to engineering assessments to identify potential risks associated with closure and decommissioning activities, where required.

Table 16
Requirements for Infrastructure to be Removed or Demolished

Page 1 of 2

			Page 1 of 2
Mining Domain ¹	Assets	Decommissioning Requirements	Key Actions Required
1 – Infrastructure Area	Roads: The North East Haul Road, Avoca Tank Access Road, and various access tracks.	Depending on final requirements, roads may be required to be reduced in width. Where roads are not required for the post-mining land use they will be deep ripped to scarify the surface and seeded with covering crops and understorey species.	None required.
	General surface infrastructure including: ROM Pad, Contractors Area and buildings including the Magazine, Transformer/Switch Room and portal for underground operations. Ventilation rises associated with North East and Avoca underground mines.	Contractors Area and other minor infrastructure from previous mining activities has been rehabilitated. The ROM Pad will be rehabilitated at closure. All buildings located within open pit areas have been decommissioned and removed. The only remaining building infrastructure is the Magazine that is of transportable design and will be removed from the Mine Site. Power infrastructure will be disconnected and removed from site. Ventilation rises will be capped and sealed in accordance with relevant guidelines.	Preliminary Contamination Assessment to identify potential unknown contamination for ROM Pad (possible). Engineering Assessment (or otherwise suitable) for capped ventilation rises (likely).
	A water pipeline (approximately 300mm diameter) also connects the Mine Site with water management structures at the Murrawombie Copper Mine. The water pipeline is positioned in the shallow V- trench.	The water pipeline will be removed at mine closure.	None required.
3 – Water Management Area (Clean Water)	Double Tanks Dam and the North Dam are considered to be clean water dams. Small dams to the south of mining areas are located within the Mine Site but are former farm dams and not used for mining operations.	Clean water dams are to remain in the landscape as farm dams.	None required.



Table 16 (Cont'd) Requirements for Infrastructure to be Removed or Demolished

Page 2 of 2

Mining Domain ¹	Assets	Decommissioning Requirements	Key Actions Required
3 – Water Management Area (Potentially Contaminated Water)	A small dam to the south of the rehabilitated Hartmans/Larsens WRE may receive potentially contaminated runoff from the WRE and is therefore considered a contaminated water storage.	The dam to the south of the Hartmans/Larsens Waste Rock Emplacement will be rehabilitated and retained in the landscape as a farm dam. It is anticipated that sediment captured in the dam will be relocated to the pit floor. Contamination assessments will be used to identify potential treatments or removal requirements.	Contamination Assessment to identify potential contamination and/or remediation requirements, and suitability for retention (likely). Engineering Assessment (or otherwise suitable) to confirm suitability for retention and identify final land use maintenance requirements (possible).
4 – Waste Rock Emplacement Area	Includes the existing Hartmans/Larsons and North East Waste Rock Emplacements.	To be retained as part of the final landform. No further shaping/landform establishment required. Minor works associated with remediation of the upper surface and water management infrastructure may be required.	None required.
6 – Active Mining Area (Open Cut Void)	Includes the three Open Pit voids (North East Pit, Hartmans Pit and Larsens Pit), haul roads that access the floor of the Pits, and the portal and decline for access to underground workings.	All access to underground workings will be decommissioned and secured to prevent entry.	Engineering/Geotech nical Assessment of portal seal prior to sign-off (likely).
8 – Other (Topsoil Stockpiles)	Areas of the Mine Site that contain topsoil stockpiles.	Topsoil will be applied during rehabilitation activities and the surface of these areas revegetated.	None required.
	s shown in Figure 8 .		
Source: Tritton Res	sources Pty Ltd.		

6.2.2.3 Buildings, Structures and Fixed Plant to be Retained

Figure 7 and **Plan 1** shows key infrastructure and structures to be retained as part of the final land use. **Table 17** identifies key infrastructure to be retained including key actions required to support retention. All infrastructure to be retained will be surveyed and recorded on a plan (or suitable alternative) with a suitable caveat developed to provide that they are readily identifiable for future land holders.



Table 17 Requirements for Infrastructure to be Retained

Page 1 of 2

	1		Page 1 of 2
Mining Domain ¹	Assets	Retention Requirements	Key Actions Required
1 – Infrastructure Area	Roads: The North East Haul Road, Avoca Tank Access Road, and various access tracks.	The main access road through the Mine Site (i.e., from the Murrawombie Mine to the Avoca Tank Mine) will be retained to support final land use. Depending on final requirements, roads may be required to be reduced in width.	None required.
	General surface infrastructure including: ROM Pad, Contractors Area and buildings including the Magazine, Transformer/Switch Room and portal for underground operations. Ventilation rises associated with North East and Avoca underground mines.	No infrastructure to be retained.	Preliminary Contamination Assessment to identify potential unknown contamination (possible).
	A water pipeline (approximately 300mm diameter) also connects the Mine Site with water management structures at the Murrawombie Copper Mine. The water pipeline is positioned in the shallow V- trench.	No infrastructure to be retained.	None required.
3 – Water Management Area (Clean Water)	Double/Twin Tanks Dam and the North Dam are considered to be clean water dams. Small dams to the south of mining areas are located within the Mine Site but are former farm dams and not used for mining operations.	Clean water dams are to remain in the landscape as farm dams.	Preliminary Contamination Assessment to identify potential unknown contamination (possible). Engineering Assessment (or otherwise suitable) to confirm suitability for retention and identify final land use maintenance requirements (possible).



Table 17 (Cont'd) Requirements for Infrastructure to be Retained

Page 2 of 2

Mining Domain ¹	Assets	Retention Requirements	Key Actions Required
3 – Water Management Area (Potentially Contaminated Water)	A small dam to the south of the rehabilitated Hartmans/Larsens WRE may receive potentially contaminated runoff from the WRE and is therefore considered a contaminated water storage.	The dam to the south of the Hartmans/Larsens Waste Rock Emplacement will be rehabilitated and retained in the landscape as a farm dam. It is anticipated that sediment captured in the dam will be relocated to the pit floor.	Contamination Assessment to identify potential contamination and/or remediation requirements, and suitability for retention (likely).
			Engineering Assessment (or otherwise suitable) to confirm suitability for retention and identify final land use maintenance requirements (possible).
4 – Waste Rock Emplacement Area	Includes the existing Hartmans/Larsons and North East Waste Rock Emplacements.	To be retained as part of the final landform. No further shaping/landform establishment required. Minor works associated with remediation of the upper surface and water management infrastructure may be required.	Engineering/Geotech nical Assessment prior to sign-off (likely).
6 – Active Mining Area (Open Cut Void)	Includes the three Open Pit voids (North East Pit, Hartmans Pit and Larsens Pit), haul roads that access the floor of the Pits, and the portal and decline for access to underground workings.	The final voids will be retained. Sealing of portal to be undertaken by suitably qualified persons. Abandonment bunding to be maintained/constructed to reduce risk of inadvertent vehicle access to final void.	Engineering/Geotech nical Assessment prior to sign-off (likely).
8 – Other (Topsoil Stockpiles)	Areas of the Mine Site that contain topsoil stockpiles.	No infrastructure to be retained.	None required.
Note 1: Domains a	s shown in Figure 8 .		
Source: Tritton Res	sources Pty Ltd.		

Short-term risks associated with the retention of nominated infrastructure and structures are relatively low as these features have primarily been retained for safety purposes (e.g. safety bunds, security fences) or to facilitate access to areas of the Mine Site.

Long-term risks to public safety and the environment associated with retained infrastructure and structures will only occur in the absence of regular maintenance. Roads will need to be inspected following high intensity rainfall events to ensure that conditions remained suitable for safe access to publicly accessible areas. Failure of roads will potentially contribute to the generation of sediment laden water which may impact water quality within local watercourses.



As part of the decommissioning and landform establishment phases of rehabilitation operations, structural and engineering assessments will be carried out as required prior to the relinquishment of retained and newly constructed infrastructure. Any necessary repair, replacement or re-design works recommended as part of these assessments will be carried out and assessed by a suitably qualified engineer before relinquishment of the Mine Site.

6.2.2.4 Management of Carbonaceous/Contaminated Material

Existing Environment

As part of decommissioning of the Mine Site during cessation of surface mining activities, contaminated material was identified within the former contractors area (also known as 'Macmahons Camp'). Contaminated material was removed from the fuel farm and machinery park up areas, and was encapsulated within Hartmans/Larsons Waste Rock Emplacement.

Risks to contaminated or polluted land principally relate to the potential for formation of acid mine drainage and contaminated water storage. Based on the above, the following areas/components of the Mine Site would have the potential for the occurrence of contaminated material (see **Figure 2**).

- Sediment Dams (low risk).
- All other contaminated water management infrastructure (i.e., drains, Settling Pond) (low-medium risk).
- ROM Pad (medium high risk).

Ongoing Controls

Management of risks associated with handing, storage, and use of contaminated or otherwise hazardous material is undertaken in accordance with the following.

- Waste Rock Characterisation and Management Plan for the identification and management of PAF material.
- Environmental Management Plan for general environmental management, including handling of hazardous material.
- Water Management Plan and Erosion and Sediment Control Plan for identification and management of water management infrastructure.
- Pollution Incident Response Management Plan.

The Company has operated the Mine Site since 1995, and during the intervening period has not experienced significant issues relating to hydrocarbon management. Hydrocarbons and other chemicals are stored in specified areas within the Murrawombie and Tritton Mine Sites, with hydrocarbons stored in bunded areas in accordance with the AS1940. Any identified contamination will either be remediated or removed prior to site relinquishment. The Company operates a dedicated bioremediation facility at the Tritton Copper Mine for treatment of contaminated soils.



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The Company has developed a contaminated site register to record any known contamination. All 'at risk' areas are subject to contamination assessments, and remediation is undertaken as required.

The Company also conducts regular groundwater and surface water monitoring to ensure that contaminated material is not polluting the surrounding environment. This enables the Company to remediate any contamination issues through groundwater purging and surface water treatment and/or containment.

Controls to be Implemented

Contamination Assessment

Risk controls identified as part of the rehabilitation risk assessment include implementation of survey and testing within historical mining areas to identify unknown contamination risks, and contamination assessments within all known 'at risk' areas (see previous subsection), with all consequent remediation activities undertaken as required. Following remediation, validation sampling will be used to identify residual contamination and verification of the concentration of any detected compounds against relevant guidelines.

Removal and Management of Contaminated Material

Contaminated material identified in exceedance of relevant guidelines may be:

- treated in-situ;
- excavated for treatment either on-site or off-site; or
- excavated for disposal either on-site (e.g., for disposal of PAF) or at a licenced disposal vicinity.

If required, handling and treatment plans for contaminated material may be developed by or in consultation with suitably qualified persons.

<u>Timing of Testing and Remediation Activities</u>

In general, contamination assessments where risks are considered by the Company to be more known/understood, will be undertaken during the decommissioning phase of rehabilitation. Timing of any remediation activities will depend on the extent of contamination (i.e., volume/area of contaminated material, and any requirements for use of said material as part of landform development or growth medium development. The outcomes of the material balance within the Mine Site will be used to identify and prioritise any relevant contamination assessments, as required.

It is therefore not expected that contaminated land or pollution will present a risk to rehabilitation of the Mine Site.



6.2.2.5 Hazardous Materials Management

Existing Environment

The risks associated with hydrocarbon contamination have been addressed in relation to contaminated or polluted land (Section 6.2.2.4).

Ongoing Controls

Ongoing controls regarding the handling, storage, use and disposal of hazardous materials is undertaken in accordance with:

- Environmental Management Plan 2023 for general environmental management, including handling of hazardous material; and
- Pollution Incident Response Management Plan.

Hazardous materials management is principally concerned with the use of explosives, as well as handling of contaminated materials. Management of hazardous materials located within other Mine Sites is provided in relevant RMPs for those sites.

Controls to be Implemented

Risk controls identified as part of the rehabilitation risk assessment include a hazardous materials assessment/audit to be undertaken prior to decommissioning of areas/infrastructure with relatively increased use/occurrence of hazardous materials. That assessment will be used to identify the location and volume of hazardous materials within the Mine Site, including a qualitative assessment of the condition of all storage infrastructure. Due to existing management measures implemented for explosives transport, handing and storage it is not expected that this will present a risk to rehabilitation of the Mine Site.

6.2.2.6 Underground Infrastructure

Existing Environment

Underground infrastructure that will require specialist capping/closure includes the portal within the Open Cut and the ventilation shaft/emergency access/egress points.

Other infrastructure associated with underground mining generally includes pipelines, electrical transmission cables, communication lines, and other removable infrastructure such as rooms and emergency bunkers.

Controls to be Implemented

Portals within open cut void will be backfilled with waste rock and sealed to prevent access. Existing fencing will be retained during and after sealing and decommissioning to prevent unauthorised access to underground workings and to the open cut final voids. Services and infrastructure associated with the vent rises will be disconnected and removed prior to the shaft being sealed with a suitable concrete cap, with temporary security fencing established during sealing works to prevent unauthorised access.



Salvageable infrastructure that can be relocated or sold will be removed where practicable. No specialist assessments or otherwise relating to salvageable infrastructure are anticipated to be required. Groundwater levels within the underground workings will be left to return to natural levels. No discharge of groundwater is expected to occur, and no specific measures to manage groundwater accumulation in underground workings are considered necessary. Quarterly groundwater quality sampling will continue to be undertaken for a minimum of two years following cessation of mining operations.

6.2.3 Landform Establishment

6.2.3.1 Water Management Infrastructure

Infrastructure to be Retained

Key mining-related water management infrastructure to be retained is identified in **Table 17** and **Plan 1**. In summary, existing surface water management infrastructure within the Mine Site is anticipated to be retained to support the final land use. Infrastructure required to support the Avoca Tank Mine will be maintained until no longer required for operational purposes. Nonclean water infrastructure may be subject to contamination and engineering assessments during decommissioning to confirm suitability for retention and/or identify remediation measures that may be required. The Company will undertake groundwater modelling and water balance modelling, to understand the specific risks associated with surface water and groundwater at the Mine Site. This information will be included in a detailed Post-Closure Water Management Plan to control the risks.

Table 18
Water Management Infrastructure Rehabilitation

Structure	Retained or Removed	Treatment / Action Required
North Dam	Retained	Contamination Assessment.
		Engineering Assessment, including spillway design (if retained).
Twin Tanks	Retained	Contamination Assessment.
		Engineering Assessment, including spillway design.
Sediment Basins	Retained	Contamination Assessment.
Stilling Ponds	Retained	Engineering Assessment, including spillway design (if retained).
Contaminated Water Pipeline	Removed	Clean water flush prior to removal.
Drop Down Drains	Retained	Engineering assessment to confirm/inform long-term performance/management.
Diversion Bunds	Retained	Assessment to confirm long-term requirements for retention. May be removed if required.



6.2.3.2 Final Landform Construction: General Requirements

The proposed final landform of the Mine Site is shown on **Plans 1** and **2**, and consists of:

- water management/storage infrastructure (see Section 6.2.3.1)
- waste rock emplacements (see Section 6.2.3.4);
- final voids (see Section 6.2.3.4); and
- a generally safe, stable, and non-polluting landform.

The following presents an overview of the general requirement of the key design aspects of the above.

Geotechnical

Geotechnical-related risks to rehabilitation of the Mine Site include stability of the waste rock emplacements and stability of final void walls.

The design and construction of the North East and Hartmans/Larsons Waste Rock Emplacements was undertaken progressively over the life of the Mine. The design of the landform has been determined based on results from extensive geotechnical and geochemical testing of embankment and tailing materials. Operational performance/stability is monitored and assessed during active mining, and any areas of instability are identified and repaired during operational phases in consultation with relevant Government agencies.

The geotechnical stability is a critical factor of the design of the Open Cuts and is monitored regularly as part of ongoing operational monitoring. Monitoring data is used to confirm predicted performance and identify potential modes or points of failure.

During the landform establishment phase of rehabilitation, additional geotechnical assessments may be undertaken to identify risks and/or opportunities relating to long-term geotechnical stability of the final landform. In addition to the above, the Company will also undertake landform evolution modelling for all high-risk constructed landforms to develop detailed designs for long-term stability of the landforms (see Section 9.2.6). The designs will be prepared at least 18 months prior to implementation to allow for adequate budget and scheduling.

Geochemical

Geotechnical constraints relating to rehabilitation of the Mine Site are identified in Sections 6.2.1.6 and 6.2.1.8. In summary, geochemical constraints are not considered to present a significant risk during landform establishment.

Erosion

The principal erosion-related risk in regard to the final landform will be the long-term erosional stability of the Hartmans/Larsons Waste Rock Emplacement due to the encapsulation of PAF material. The long-term performances of the existing water management infrastructure located on the waste rock emplacements will be assessed as part of the Post-closure Water Management Strategy. Modification to or additional drop down drains may be required to ensure erosion risks are minimised as far as practicable prior to relinquishment.



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Erosion modelling will form part of Landform Evolution Modelling undertaken as part of rehabilitation planning (see Section 9.2.5).

Further information on pre- and post-closure water management infrastructure, including erosion and sediment infrastructure and/or controls, is provided in Sections 6.2.3.1, 6.2.6.2, and 9.2.3.

Visual Amenity

The final landform of the Mine Site will be generally consistent with the surrounding landscape and capable of supporting native ecosystem and agricultural grazing. Excluding the waste rock emplacements and the final void, the gentle slopes of the final landform will be relatively consistent with the pre-mining landscape. Impacts to visual amenity are not considered to be a significant risk due to the location of the Mine Site, and prevalence of native vegetation.

6.2.3.3 Final Landform Construction: Reject Emplacement Areas and Tailings Dams

Waste Rock Emplacements

No further significant landform establishment activities are anticipated to be required for the waste rock emplacements within the Mine Site. Minor remediation works may be undertaken, if required. This may include re-stabilisation of surfaces, and/or construction/modification of surface water management infrastructure. Landform profiling of the existing Waste Rock Emplacement at the Mine Site has resulted in a stable landform, however on many of the slopes the steepness of the angle of repose has resulted in a lack of successful revegetation of endemic grassland species. A *Rehabilitation Strategy* has been developed by DnA Environmental to determine adequate rehabilitation methodologies to guide successful revegetation. The North East and Hartmans/Larsons Waste Rock Emplacements will form part of the scope of any Geotechnical and LEM assessments undertaken prior to relinquishment.

6.2.3.4 Final Landform Construction: Final Voids, Highwalls and Low Walls

Existing Environment

The existing open pit voids have been generally stable since completion of mining; however, failures have been identified within all three of the open cut puts. Previous failures have been inspected and remediation actions (i.e. backfilling of high-risk areas with NAF waste rock) have been undertaken within Hartmans Pit. Monitoring of these areas continues as part of operational health and safety monitoring. If appropriately managed, long-term instability is not considered to be a significant risk to surrounding land uses.

Controls to be Implemented

Further assessment will be undertaken to determine a safe approach to rehabilitating and securing these pits. This may involve further earthworks or securing a wider area around each pit with a combination of fencing, bunding and signage identifying the safety risks. Waste rock generated from Avoca Tank will be stored within the southern section of Hartmans Pit. The waste rock emplaced in the southern section of the Hartmans Pit is also stabilising the failure in the southern wall of the pit.



An assessment of the geotechnical stability of the final open cut void landform will be undertaken following cessation of mining operations within the Mine, or within the Avoca Tank Mine Site. In the event that the review indicates that the risk of long-term instability within the open cut is not acceptable, the TARP procedures identified in Section 10.2 will be implemented.

The final voids will be secured by a safety bund, fenced and access restricted through a lockable gate. Clean water diversions will be established to divert clean water from entering the voids. All access to underground workings will be sealed or otherwise made inaccessible.

The impact of the final voids on surface water and groundwater quality and quantity will form part of the Post-closure Water Management Strategy to be undertaken prior to Mine closure. It is anticipated that the final voids at the Mine Site will be a groundwater sink. However, groundwater modelling and water balance modelling of the pits will be undertaken to confirm this is the case. In addition to the above, future licensing requirements will be determined by the Post-closure Water Management Strategy.

6.2.3.5 Construction of Creek/River Diversion Works

No creek or river diversions are proposed as part of the rehabilitation works and close of the Mine Site.

6.2.4 Growth Medium Development

Material Characterisation

Risk controls identified as part of the rehabilitation risk assessment include geochemical characterisation of growth medium and capping materials during stripping. Further testing may be implemented to identify risks and opportunities relating to material characterisation such as fertility, erodibility, and the potential use of ameliorants, if required.

Ameliorants and Strategies

Depending on the results of existing or future material characterisation assessments, amelioration and/or selective handling strategies may be required to be developed and implemented.

Amelioration, if required, may include the use/application of fertilisers, lime, gypsum and/or organic matter. In consideration of the proposed final land use for the Mine Site, largely consisting of agricultural grazing, typical agricultural products and machinery will likely be highly applicable and therefore no specialist strategies or equipment is anticipated to be required.

Erosion and Sediment Control

Ongoing monitoring and management of existing surface water management infrastructure during all phases of rehabilitation will help to ensure that all necessary infrastructure is functioning as intended/required.

Temporary erosion and sediment controls that may be used during establishment of groundcovers are identified in the *Erosion and Sediment Control Plan 2016* and may include the use of sediment fencing, straw bale filters.



The application of mulches, including plant matter or Hydromulch, may be required during periods of elevated erosion risk. In general, rehabilitation scheduling will be undertaken in consideration of long-term meteorological patterns to determine optimal timing for key activities and as such, the application of mulches is not anticipated to be required outside of exceptional circumstances.

Growth Medium Establishment

Deep ripping of in-situ substrates will be implemented where required to promote water infiltration and encourage root penetration and development. Ripping will occur along contours to reduce erosion risks on sloped landforms, where practicable. Topsoils/subsoils will be placed within or adjacent to areas undergoing rehabilitation and material will be spread and shaped using appropriate machinery such as bulldozers and graders. Tillage of surfaces to integrate substrates and promote water infiltration may be implemented where required.

Seasonal Considerations

Table 19 presents a summary of the regional climate statistics, as recorded at the Nyngan Airport AWS (051039), located approximately 50km south-southeast of the Mine Site. An AWS is located near the town of Girilambone; however, that station (Girilambone (Okeh) AWS Site No. 51164) has only been operational since 2017 and therefore long term seasonal information can not be determined at this time.

In summary, average temperatures are higher throughout December to March when mean temperatures are above the annual average. Rainfall follows a similar distribution, with above annual average rainfall (36.8mm) occurring in January, February and March. Average 9am show more seasonal variation compared to windspeeds at 3pm. Average 9am and 3pm windspeeds are higher than the annual average from October to March, and from September to February, respectively.

Statistics Feb Mar Apr Dec Annual Jan Jul Aug Sep Oct Nov Jun 33.4 Mean Max Temp (°c) 34.4 30.6 25.7 20.7 17.1 16.5 18.5 22.7 26.7 30.1 25.8 Mean Min Temp (°c) 19.6 19.3 16.5 11.9 7.8 5.0 3.8 4.7 7.8 11.5 15.1 11.7 Mean Rainfall (mm) 51.2 46.3 41.9 34.2 35.6 33.8 28.7 29.5 27.6 34.2 36.0 445.6 13.6 13.3 12.9 10.9 9.6 8.7 9.2 10.3 12.6 13.7 13.8 11.8 Mean 9am Wind Speed (km/h) 10.5 Mean 3pm Wind Speed (km/h) | 12.8 | 12.0 | 12.0 | 10.8 11.2 12.1 13.1 14.1 14.2 13.4 12.4 Source: Bureau of Meteorology Climate Data Online - Nyngan Airport (051039), accessed 17/03/2023

Table 19
Regional Climate Statistics

Consideration of long-term regional, and short-term local meteorological patterns will be undertaken during the planning of key rehabilitation activities, such as during landform establishment and growth medium development. In general, as rainfall is relatively consistently low, impact from high rainfall events is not anticipated to present significant risks to rehabilitation outside of extreme weather conditions.

Should adverse conditions delay vegetation establishment, the following management and mitigation measures may be implemented by the Company.

- Increase frequency/scope of routine/targeted inspections.
- Apply measures to increase soil water holding capacity such as mulch.



- Apply additional growth medium if erosion of existing material is considered unacceptable.
- Commission additional specialist reports/assessment to ascertain scope of potential impacts and identify any remedial actions, such as supplementary planting or revision of target species selection.

Sourcing of Additional Growth Medium

If required, (and subject to any required approvals) a suitable source of additional soil material / growth medium will be identified, including the need for importation of material from off site, and an investigation into measures that may be implemented to ameliorate other materials to make them suitable for use as a growth medium will be conducted.

6.2.5 Ecosystem and Land Use Establishment

DnA Environmental (DnA) have prepared a Rehabilitation Strategy (DnA, 2024) to guide ecosystem and land use establishment at the Mine Site. The following subsections present a summary of the Rehabilitation Strategy that will be applied to the ecosystem and land use establishment phase of rehabilitation.

6.2.5.1 Revegetation Methodology

Revegetation Using Seeds

DnA (2024) has identified a combination of revegetation methods that may be used for revegetation at the Mine Site, summarised as follows.

- Seed sowing of a mix of species identified in **Table 20**, using:
 - hand broadcasting;
 - seed spreaders;
 - brush-matting;
 - hydro-mulching; and / or
 - aerial sowing.
- Direct seed application, facilitated by strategic planning for seed collection to occur simultaneously with final landform completion to provide the following benefits:
 - seed can be directly distributed onto revegetation areas;
 - long-term storage not required;
 - no drying or processing of seed required;
 - native seeds are adapted for natural burial; and
 - need for pre-treatments is reduced as the seed is allowed to weather and germinate naturally when conditions are optimum.



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- Seed-bearing native pasture hay application, to provide the following benefits:
 - effective in early stope stabilisation for highly sodic and dispersive soils (refer Section 6.2.1.1) (DnA, 2024);
 - accelerates soil and ecological development and function;
 - decomposition of hay provides nutrients and organic matter required for sustaining microbial function and plant growth;
 - provides immediate soil surface protection and protection against erosion; and
 - provides an additional source of local grassland seed.

To ensure adequate seed availability for rehabilitation activities, a Seed Balance Strategy will be conducted, which will include a seed inventory and forecast, supported by a seed collection and procurement strategy to ensure that an adequate seed collection schedule is in place (see Section 9.2.1).

Revegetation Using Tubestock

A combination of the seeding and planting techniques will be utilised by the Company for revegetation of the Mine Site. Tubestock will be ordered, as required, in accordance with the Rehabilitation Strategy (DnA, 2024).

Tubestock of tree and shrub species will be planted in accordance with the Rehabilitation Strategy and summarised as follows.

- Local provenance seed will be collected and supplied to a local and qualified nursery provider at least six to twelve months prior to planting to allow adequate propagation time. Other sources of material may be required to be used depending on availability of resources.
- Tubestock will be at least 25cm in height and have a well-established root system.
- Planting will be undertaken by an experienced planting team between April and August after suitable rainfall events have resulted in suitable soil moisture conditions.
- Where practicable, plants will be watered in on the day of planting to settle soil around the root ball and remove voids which would otherwise increase the rate of moisture loss around the plant. Watering in will take place no more than 24 - 48hours post planting.
- During the three to six month establishment period, the frequency of watering will depend on the prevailing climatic conditions at the time of planting and thereafter. Watering will be frequent enough to maintain adequate soil moisture to prevent water stress and repressed growth during establishment.
- On average, the density of mature tubestock will be 150 stems per hectare accounting for up to 50% mortality. The density of juvenile or shrub trees will be approximately 600 shrubs per hectare.
- Tubestock will be planted approximately 8 to 12m apart.



6.2.5.2 Target Species

Native Ecosystem Woodland and Agricultural Grazing Domains

Table 20 presents an indicative and non-exhaustive list of species identified by DnA (2024) that may be used during revegetation of the native ecosystem and agricultural grazing areas of the Mine Site (refer **Figure 7**). The species listed in **Table 20** represent those which have been identified within analogue sites representative of the target vegetation types. While all species listed are suitable for revegetation of native ecosystem and agricultural grazing areas, favourable key species have been identified.

Table 20
Mine Rehabilitation Species List

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Growth Form	Scientific Name	Common Name
Trees	Acacia doratoxylon	Currawang
	Acacia excelsa	Ironwood
	Brachychiton populneus	Kurrajong
	Callitris glaucophylla	White Cypress Pine
	Eucalyptus intertexta	Gum Coolibah
	Eucalyptus populnea	Bimble Box
	Eucalyptus viridis	Green Mallee
	Geijera parviflora	Wilga
Shrubs	Acacia deanei	Deane's Wattle
	Acacia decora	Western Silver Wattle
	Acacia hakeoides	Hakea Wattle
	Acacia oswaldii	Miljee
	Dodonaea viscosa subsp. cuneata	Wedge-leaf Hopbush
	Dodonaea viscosa subsp. mucronata	A Hopbush
	Eremophila deserti	Turkey Bush
	Eremophila longifolia	Emubush
	Eremophila mitchellii	Budda
	Eremophila sturtii	Turpentine
	Senna artemisioides subsp filifolia	Punty Bush
	Senna artemisioides subsp. X artemisioides	Silver Cassia
	Senna artemisioides subsp. zygophylla	Senna
Sub-shrubs	Atriplex semibaccata	Creeping Saltbush
	Atriplex spinibractea	Spiny-fruit Saltbush
	Atriplex stipitata	Mallee Saltbush
	Chenopodium desertorum	Mallee Goosefoot
	Enchylaena tomentosa	Ruby Saltbush
	Maireana microphylla	Eastern Cottonbush
	Maireana villosa	Blue Pearlbush
	Ptilotus sessilifolius var. sessilifolius	Crimson Foxtail
	Ptilotus spathulatus	Pussy Tails
	Salsola australis	Buckbush
	Sclerolaena muricata	Black Roly Poly
	Sclerolaena parviflora	Mallee Copperburr



Table 20 (Cont'd) Mine Rehabilitation Species List

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Growth Form	Scientific Name	Common Name
Herbs	Brachyscome ciliaris var. ciliaris	Variable Daisy
	Calotis cuneifolia	Purple Burr Daisy
	Calotis lappulacea	Yellow Burr Daisy
	Chrysocephalum apiculatum	Common Everlasting
	Convolvulus erubescens	Australian Bindweed
	Einadia nutans	Climbing Saltbush
	Erodium crinitum	Blue Storksbill
	Glycine tabacina	Variable Glycine
	Leptorhynchos tetrachaetus	Beauty Buttons
	Maireana enchylaenoides	Wingless Fissure Weed
	Minuria leptophylla	Minnie Daisy
	Oxalis perennans	Yellow Wood-sorrel
	Portulaca oleracea	Pigweed
	Ptilotus polystachyus	Long Tails
	Ptilotus spathulatus	Pussy Tails
	Rhodanthe corymbiflora	Small White Sunray
	Rhodanthe floribunda	Common White Sunray
	Sida corrugata	Corrugated Sida
	Sida cunninghamii	Ridge Sida
	Solanum ellipticum	Velvet Potato Bush
	Solanum ferocissimum	Spiny Potato Bush
	Swainsona microphylla	Poison Swainson-pea
	Vittadinia cuneata	Fuzzweed
	Vittadinia pterochaeta	Rough Fuzzweed
	Vittadinia sulcata	A Fuzzweed
	Wahlenbergia stricta	Tall Bluebell
	Xerochrysum bracteatum	Golden Everlasting
Grasses	Anthosachne [Elymus] scabra	Common Wheatgrass
	Aristida behriana	Bunch Wiregrass
	Aristida jerichoensis	No. 9 Wiregrass
	Aristida ramosa	Threeawn Grass
	Austrostipa scabra	Speargrass
	Bothriochloa macra	Red Grass
	Chloris truncata	Windmill Grass
	Chloris ventricosa	Tall Windmill Grass
	Cynodon dactylon	Couch
	Digitaria divaricatissima	Umbrella Grass
	Enneapogon intermedius	Nineawn
	Enneapogon nigricans	Blackheads
	Enteropogon acicularis	Curly Windmill Grass
	,	



Table 20 (Cont'd) Mine Rehabilitation Species List

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Growth Form	Scientific Name	Common Name
Grasses	Eragrostis parviflora	Lovegrass
(Cont'd)	Eragrostis setifolia	Neverfail
	Eriochloa creber	Cup Grass
	Monachather paradoxus	Bandicoot Grass
	Panicum effusum	Hairy Panic
	Paspalidium constrictum	Knottybutt Grass
	Rytidosperma caespitosum	Wallaby Grass
	Sporobolus caroli	Fairy Grass
	Themeda triandra	Kangaroo Grass
	Thyridolepis mitchelliana	Mulga Mitchell Grass
	Walwhalleya subxerophila	Cane Panic
Source: DnA (2024) – modified after Table 3-3		

6.2.5.3 Management of Emergent Vegetation

Management measures to be implemented for protection of emergent and/or juvenile vegetation may include:

- exclusion of vehicles and stock from revegetation area;
- increased monitoring frequency to identify effectiveness of revegetation methodologies and for early identification of potential risks; and
- increased frequency of weed and pest monitoring and controls prior to, during, and following vegetation establishment to ensure pest pressure is kept to a minimum while vegetation is more at-risk.

6.2.5.4 Habitat Enhancement

Any stockpiled habitat features within the Mine Site will be distributed throughout areas to be rehabilitated. This may include large woody debris salvaged during vegetation clearing (see Section 6.2.1.11) or large rocky debris from confirmed NAF stockpiles. If required, distribution of habitat features may be undertaken in consultation with suitably qualified persons.

6.2.6 Ecosystem and Land Use Development

6.2.6.1 Weed and Pest Management and Monitoring Program

Weed and pest management is currently undertaken in accordance with the *Weed Management Plan 2021*. In summary, weeds at the Mine Site are currently managed through bi-annual controls that include spraying and physical removal, where necessary. Feral animals are monitored through regular visual inspections and include reactive measures such as short-term baiting programs and trapping.



While weeds and non-native fauna impacts are a risk to revegetation success, it is expected that they will continue to be managed until such time as the completion criteria are met and the mining leases are relinquished. The Company anticipates that weed and pest management across the Tritton Copper Operations will be undertaken in consideration of the results of rehabilitation monitoring reports, namely observations of weed and pest occurrence made by suitably qualified person(s). Management activities, including monitoring and control frequencies, may be revised in accordance with any recommendations. Furthermore, it is anticipated that weeds and nonnative fauna will remain in the final landform, however the pervasiveness of species will be consistent with or below that of the surrounding landscape. Therefore, the need for ongoing controls are considered to be a relatively minor risk for the successful rehabilitation of the Mine Site.

6.2.6.2 Environmental Management and Monitoring Program

Surface Water

Diversion structures will be monitored quarterly to ensure that they are in acceptable condition and still fit for purpose. Surface water monitoring in the sediment basins will be undertaken monthly to check for any potential contamination. If there is any contamination found, an investigation into identifying the source of contamination will commence immediately. Surface water in the containment dams will be monitored monthly for contamination. If contamination is found, it will be managed in accordance with the *Water Management Plan*.

A detailed Post-Closure Water Management Plan will be developed to determine management of erosion and sediment control at the Mine Site post closure (see Section 9.2.2).

Groundwater

Groundwater monitoring is conducted either monthly or quarterly, in accordance with the EPL 4501 or the RAP monitoring requirements. The groundwater monitoring locations, frequency, analysis requirements and performance criteria are presented in the *Water Management Plan*.

6.2.6.3 Revegetation Management and Monitoring

Ecological management of rehabilitated lands will consist of regular monitoring, review and response to identify any revegetation and maintenance requirements to achieve final land use. Monitoring will consist of a combination of regular visual inspections undertaken by Company personnel and semi-regular formal monitoring assessments undertaken by suitably qualified persons. The Company will undertake a photo-point and annual monitoring program for all rehabilitated areas of the Mine Site as they are progressively rehabilitated. The Company will report the results of the monitoring program in the Annual Rehabilitation Report. All information collected by Company personnel will be made available during formal monitoring assessments, if required. Areas of sparce or failed vegetation will be investigated by a suitably qualified person and a remedial action plan put in place to ensure sustainable vegetation is established in these areas.

In response to outcomes of the monitoring program, the Company will undertake maintenance or remedial works as required, which will be reported on in the Forward Program.



These may include the following.

- Earthworks or stabilisation measures to repair erosion;
- Repair drainage structures and de-silt sediment control structures;
- Additional seeding or planting;
- Application of fertilisers and/or mulches;
- Application of gypsum or lime to control pH and improve soil structure;
- Fencing maintenance and repair;
- Irrigation system maintenance and repair;
- Bushfire management; and
- Implementation of weed and pest control measures.

6.2.6.4 Land Management and Infrastructure Maintenance

Site infrastructure including roads, security and stock-proof fencing, safety bunds and signage will be inspected on a minimum of an annual basis. Additionally, infrastructure vulnerable to erosion (e.g. unsealed roads, safety bunds, clean water diversions will be inspected following significant rainfall events (i.e. \geq 25mm within 24 hours).

The results of infrastructure inspections as well as records of annual infrastructure maintenance activities and costs will be included as part of an Annual Rehabilitation Report until relinquishment.

6.3 Rehabilitation of Areas Affected by Subsidence

No incidences of mine subsidence have been identified as occurring within the Mine Site or as a result of mining operations associated with the Mine. As outlined in Section 6.2.1.13, subsidence represents a low risk to rehabilitation at the Mine Site. As such, no specific subsidence-related management and maintenance programs are required at the Mine.

