

Environmental Effects Report
Hawkes Creek North
June 2022 REV H

***Tasmanian
Advanced
Minerals Pty Ltd***
(ABN 51 122 089 221)



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Appendix A – Flora and Fauna Report

1. Introduction

This Environmental Effects Report and Development Application has been developed by Tasmanian Advanced Minerals (TAM) to seek approval from the Environment Protection Authority and Circular Head Council. The proponent is seeking approval for silica extraction activity, adjacent to an existing approved activity also undertaken by TAM.

The proponent has been operating similar activities across north west Tasmania and has complied with local and State government regulations relating to their operations.

A Notice of Intent (NOI) for the Increase in Production was submitted to the Tasmanian Environment Protection Authority (EPA) 17 November 2019. The EPA subsequently provided project specific guidelines and this Environmental Effects Report (EER) has been prepared in accordance with these guidelines (dated December 2019).

TAM prepared and submitted a referral under the *Environment Protection and Biodiversity Conservation Act 1999* in March 2021, with a determination provided in May 2021 that the activity was not a controlled action.

Following exploration activity at Hawkes Creek North (HCN), TAM has decided to seek approval to extract raw silica from HCN for processing at its approved Stennings Road facility. HCN provides a diverse raw silica resource to TAM enabling them to provide high quality processed silica to meet market specifications for screen technology.

1.1 Objectives

This EER has been prepared in accordance with the *Environmental Effects Report Guidelines – Hawkes Creek North Silica Mine, December 2019* (referred to as the guidelines).

The objectives of the EER are to provide the Board of the EPA and Circular Head Council with information to consider the potential environmental effects of the project.

The EPA has classified the activity as a Level 2a, in accordance with the *Environmental Management and Pollution Control Act 1994 (EMPCA)* following consideration of the NOI.

The activity classification as confirmed to the proponent in correspondence from the EPA on 17 December 2019.

2. Part A – Proponent Information

TAM is an Australian owned mining operator and manufacturer of high grade silica flour from three silica mines in northern Tasmania at Blackwater, Corinna and Hawkes Creek and an Inert Waste Facility (IWF) at Calder. All raw silica is processed at the TAM facility off Stennings Road, Wynyard.

TAM exports the silica for use in the latest screen technology common in mobile phones, computers and televisions. TAM began operations in Tasmania in 2007 and has mined at Blackwater since 2008, with the other mines and IWF commencing operations regularly since 2008. TAM has a sound compliance record with EPA, Councils and Mineral Resources Tasmania and operates its activities and facilities in a safe manner.

TAM is continuously responding to downstream processor requirements and market demand for silica. HCN aims to give TAM greater ability to meet these requirements, allowing the full capacity of the factory be realised and providing security for existing employees at Stennings Road and the TAM mines.

A summary of current Level 2 permits and Councils permits held by TAM are:

- Blackwater, Far West Deposit, Corinna, Hawkes Creek mines
- Inert Waste Facility at Calder
- Processing Factory on Stennings Road

Proponent
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3. Existing Hawkes Creek Mine

The existing Hawkes Creek Mine has been operational since 2011 with silica extracted using excavators (generally < 30t capacity), screened and stockpiled on site and later transported to Wynyard for further processing.

The operations are very stable, have little environmental impact and TAM have been compliant with all environmental requirements during operations.

It is the intent of TAM to use the staff, equipment and existing road network to extract and transport raw silica from the new HCN operation to the existing Hawkes Creek Mine, where the raw silica will be screened and stockpiled prior to being transported to Wynyard for further processing.

4. Part B Hawkes Creek North (HCN) Description

4.1 Objective

The objective of the HCN is to continue TAM's operational preference, that is, to have various silica deposits (with different chemical profiles) in Northern Tasmania, that TAM uses to maintain stable feed blends at their processing facility in Wynyard.

HCN provides several benefits to TAM, including:

- Reducing the quantity of *out of specification* silica from all TAM operations, by 'improving' the chemical profile of extracted silica using higher quality silica from HCN;
- Stabilising the chemical profile of silica available for the processing facility feed;
- Having a high quality resource adjacent to existing operations with the ability to utilise operational support from the existing Hawkes Creek Mine;
- Utilising existing management and resources at the adjacent Hawkes Creek Mine.

All silica from HCN transported to the existing Hawkes Creek Mine for screening and stockpiling prior to being transported to Wynyard for processing.

HCN will not be a stand-alone operation. It will use all machinery, labour, transport, supervision and management from the Hawkes Creek Mine operations. This allows existing infrastructure to be utilised and avoids unnecessary duplication of facilities, reduces the footprint of HCN and provides a secure supply chain for TAM.

Consultation with Circular Head Council indicates storing raw silica on the existing Hawkes Creek Mine will comply with the local government planning provisions. This is discussed further in the Development Application later in this document.

4.1.1 Rationale and Alternatives

HCN was selected as it is located immediately adjacent to TAM operational support and processing facilities that avoids duplication of these facilities and management for a relatively small deposit and short mine life. HCN also has existing road infrastructure providing access to existing Hawkes Creek Mine.

HCN will complement other mines operated by TAM and is located close to the Wynyard processing facility

4.2 Location

HCN is located on ML 5M/2018, a 295 ha lease granted by Mineral Resources Tasmania (MRT) on 8 March 2019. HCN is located on a ridgeline, in a forested area, currently accessed via a gravel road, historically used by local forestry operations.

The location of the ML is provided in Figures 1 and 2. A nominal operational map is provided in Figure 3. There is no known current use on the HCN mining lease, and it is unknown when the last operations occurred.

4.3 Extraction Limit

The requested extraction limit for HCN is 3846 m³ per year or 5000 tonnes per year at 1.3m³/t. The expected mine life is 8-10 years.

4.4 Silica Resource

TAM has undertaken an exploration program in 2010 – 2012 to identify silica quality, quantity, depth and depth of overburden.

Silica has been identified to 0.3-5m below existing ground level with a thin layer of soil and vegetation. It is anticipated a 14 - 30 tonne excavator will be used to extract the silica and direct load into a 30 tonne articulated truck for transport.

4.5 Impact on Existing Hawkes Creek

HCN will not impact Hawkes Creek Mine. Because HCN is located adjacent to Hawkes Creek Mine it can take advantage of:

- Existing staff, oversight, amenities and machinery from Hawkes Creek Mine to undertake the extraction activities at HCN;

A general layout plan of the key Hawkes Creek Facilities is provided in Figure 4.

4.6 Activities on Site

4.6.1 General Description

The activities to be undertaken at HCN are:

Prior to operations:

- Improve existing road access for heavy vehicle movements (fill potholes, ensure sufficient gravel on existing road pavement etc); and
- Remove debris and over hanging trees to improve visibility and safety on the existing former forestry roads between Hawkes Creek and HCN.

Operations:

- Construct a bund wall around the toe of the workings using stripped vegetation and topsoil. This is primarily aimed to control and capture any runoff; however, runoff is expected to be minimal due to the porous nature of the silica;
- Extract approximately 5000 tonnes of raw silica per year from 1.6ha pit,
- Transport the raw silica from HCN to the existing Hawkes Creek mine, for screening/primary processing and transport to Wynyard;
- It is proposed to establish a pond for treating operational runoff; and
- Rehabilitate the extraction area once extraction has ceased, with overburden.

Figure 1: Regional Site Location

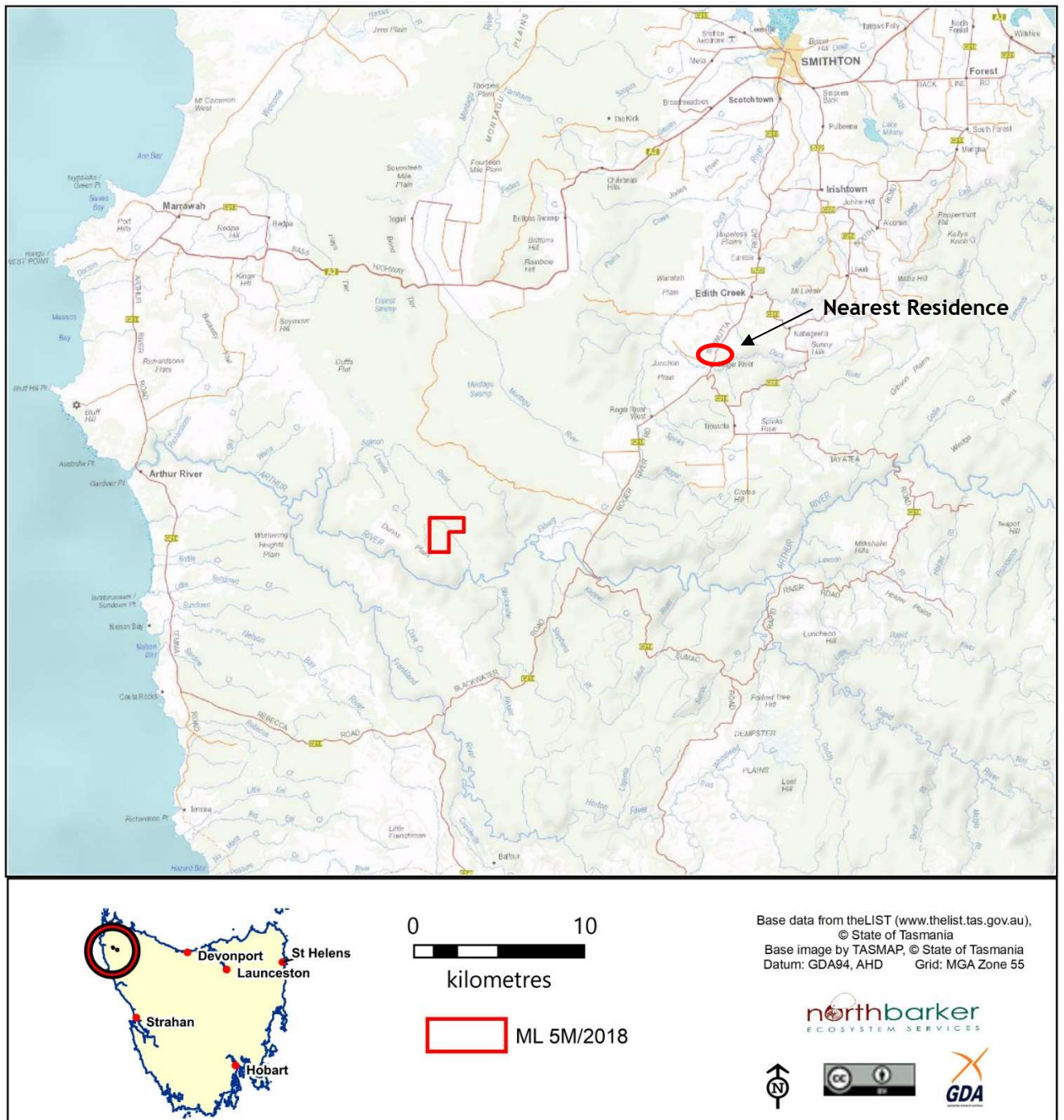


Figure 2: Local Site Location

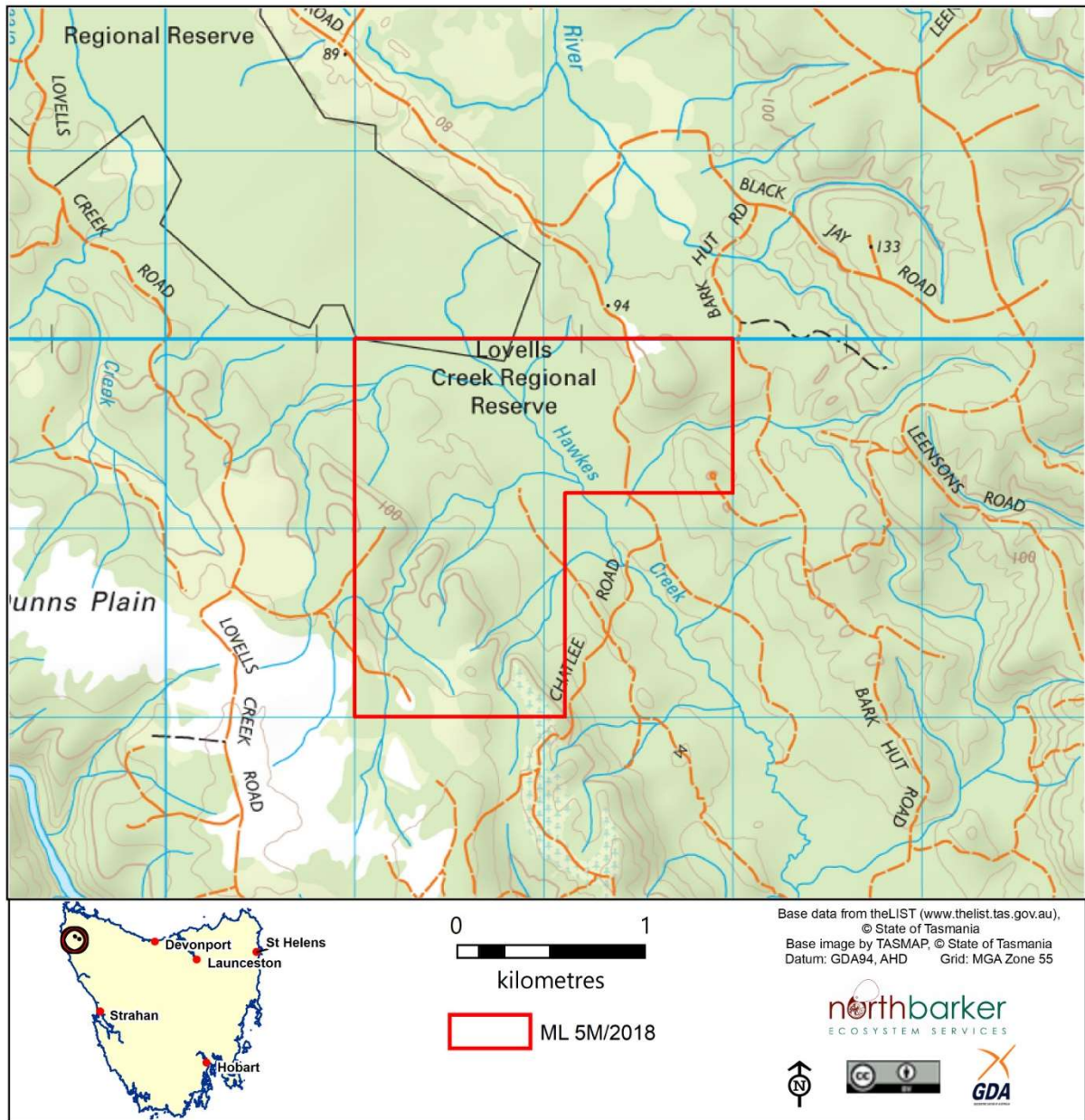


Figure 3 Mine Layout



Figure 4: Hawkes Creek Features Map



4.6.2 Site Layout

The site layout would consist of the following, as illustrated in Figure 3:

- Existing gravel road into the lease (former Forestry Tasmania road);
- Approximately 3 m high vegetative bund extending around the toe of the extraction area, controlling runoff from extraction area;
- A pit, generally 1.6ha in size and 3m deep (depth based on findings from exploration activity);

There is no need to have the following facilities or infrastructure on site because it is provided for at the existing Hawkes Creek Mine:

- Office space and staff amenities.
- Light and heavy vehicle parking (including visitors).
- Screening and stockpiling area.
- Fuel storage/hazardous substances banded areas.

4.7 Infrastructure and Equipment

HCN is a straightforward and relatively small operation. The only equipment required for operations will be:

- Excavator (silica extraction, loading into trucks, cell and bund construction and rehabilitation);
- Water Cart (dust suppression as needed); and
- Articulated truck movements carting silica to Hawkes Creek Mine.

The only infrastructure at HCN will be:

- Existing access road;
- Extraction cells;
- Pond to control/contain any pit runoff.

4.8 Operating Times

The operating hours will be as per below, transporting raw/extracted silica to existing Hawkes Creek Mine for screening.

- 0530-1900 Monday to Sunday.

This is outside the guidance provided by Quarry Code of Practice, however given the extraction method is with an excavator only, this is unlikely to create any unacceptable noise level for the nearest resident 6km away. The transport route from HCN to Hawkes Creek is via internal roads between the two mining leases and does not pass any sensitive receptors.

Note - the operating hours at Hawkes Creek are 0700-1900 Monday to Sunday, therefore no silica from HCN will be transported to HCN before 0700.

4.9 Staffing

The existing staff from Hawkes Creek Mine operations will be resourced to the HCN. 2-3 staff will be required at full operations (excavator operator, articulated truck driver, supervisor).

4.10 Transport

All silica extracted from HCN will be transported to Hawkes Creek mine using existing forestry roads. Once at Hawkes Creek Mine, silica will be screened and stockpiled.

5. Site Details

Current Condition

The site is covered in mature regrowth vegetation, with no formal use. A gravel road has been formed through the lease and provides ready access to the nominal pit location.

Topography

The main portion of the Land where extraction activities are to occur is formed on a low ridgeline covered in mature regrowth vegetation. The ridgeline is aligned NW-SE.

An ephemeral drainage line exists at the south east end of the mining lease. The drainage line is approximately 500 mm wide and is aligned east-west across the lease. The drainage line reports to Hawkes Creek, 558m to the east of the nominal pit location, in the valley at the foot of the steep slopes forming the ridgeline where extraction activities occur.

Sensitive Receptors

There are no known sensitive receptors within 5km of the Mining Lease boundary. The closest sensitive receptor is located on Leensons Road, nominally 6 km from the Mining Lease boundary.

Access

Access to the lease and proposed pit location will be provided for via Chatlee Road and via existing gravel roads. No new roads are required to be formed for the HCN mine to be realised.

The existing gravel road will be maintained to provide a safe, trafficable surface for operational needs.

Zoning

The mining lease is zoned *Rural Resource* under the Circular Head Planning Scheme 2021. Extraction activities are permitted under the Planning Scheme (Figure 5).

Land Tenure

The land tenure is *Permanent Timber Production Land* according to www.theLIST.tas.gov.au

Geology

The geology is generally summarised as *interbedded siliceous gravel, quartz sand and clay* in the 1:25,000 geological maps.

This is consistent with observations on site during the exploration program, which confirmed that an economic quantity of suitable silica exists.

Soils

Soils observed during site investigations and test pitting are described as a thin layer of topsoil with clay.

European Heritage

There is not expected to be any European Heritage values within the proposed pit due to its location within a regrowth forest, therefore no specific European Heritage investigation was undertaken or is planned to be undertaken.

Aboriginal Heritage

TAM engaged Cultural Heritage Management Australia (CHMA) to complete an Aboriginal Heritage Assessment of a 37 ha portion of the mining lease - where operations are likely to be concentrated along the ridgeline.

No sites or items of Aboriginal significance were identified in the survey area and Aboriginal Heritage Tasmania (AHT) accepted the findings of the report.

Surface Water

At the south eastern end of the proposed mining area is an unnamed drainage line of Hawkes Creek, formed in a topographical depression. The drainage line will not form part of the works and is outside the south east boundary of the extraction areas.

The drainage line is unlikely to provide any beneficial reuse for downstream users due to distance to users, the low flows observed on site and influences from other downstream catchments. The drainage line is likely to only have flow following rainfall and no flow during low rainfall periods.

There is little substrate observed in the drainage line. Generally, the substrate is mud and rotting vegetation and unlikely to provide suitable habitat for a diverse range of species, however, the drainage line may support local snail species. Further discussion is provided in Part C.

Ground Water

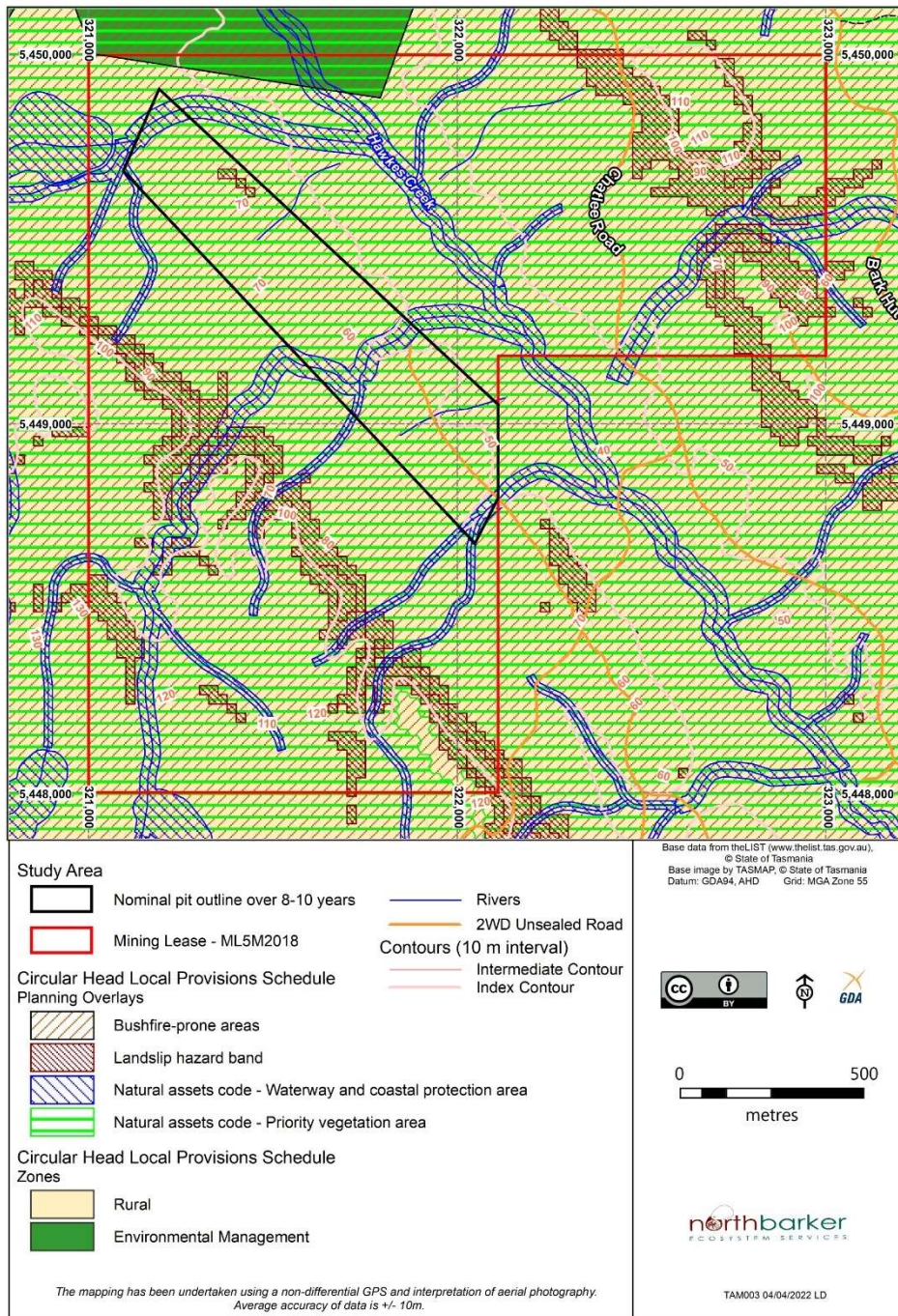
No groundwater uses are thought to exist on site and no uses are recorded on the DPIPW E groundwater information access portal. No groundwater was intercepted during the exploration program.

There is no operational requirement to take groundwater and operations will not discharge to groundwater.

Existing Infrastructure

The only existing infrastructure on site is a gravel access road and vegetation that can be stripped, stockpiled and used for rehabilitation.

Figure 5 Land Zoning Hawkes Creek North



6. Part C – Potential Environmental Effects and Management

6.1 Flora and Fauna

North Barker Ecosystems Services (NBES) were engaged by TAM to undertake a Flora and Fauna assessment of the ML to identify if any flora and or fauna exist that require specific management to protect their habitat or comply with regulatory requirements.

NBES undertook two surveys on site, a reconnaissance survey of the proposed extended lease area was undertaken on the 27th February 2019. This involved recording high level information from where ready access was achievable on the site.

TAM then engaged NBES to undertake a further survey which specifically targeted threatened fauna to supplement earlier desktop/reconnaissance assessments of the area. The surveys were undertaken by a two-person team on the 10th and 11th of June 2020. Additional flora species were recorded to supplement earlier survey work.

The full report is provided in Appendix A and summarised below.

6.1.1 Vegetation Communities

Five vegetation communities were documented from the extended lease area. These were

- (RMT) Nothofagus - Atherosperma rainforest
- (WBR) Eucalyptus brookeriana wet forest
- (WNR) Eucalyptus nitida forest over rainforest
- (WOR) Eucalyptus obliqua forest over rainforest
- (WOU) Eucalyptus obliqua forest undifferentiated

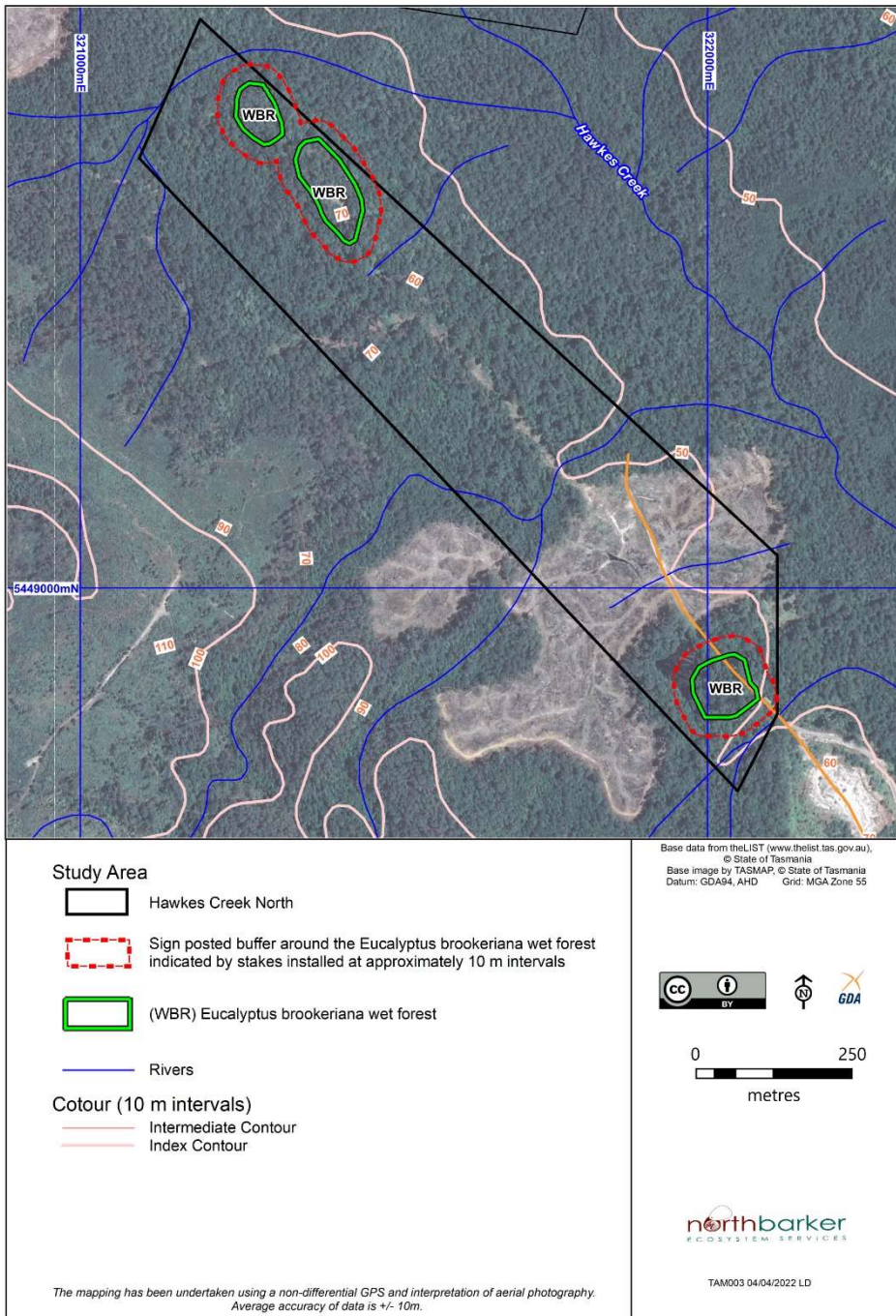
WBR is listed as threatened under the Nature Conservation Act 2002 and as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999*. The listing of WBR on the EPBC is a significant change since the time of the earlier report when the community was not listed under the Commonwealth legislation until 4 July 2019.

The development footprint includes 3 stands of WBR of 0.5, 0.97 and 0.7 ha. The EPBC listing advice requires that any area of > 0.5 ha that meets the condition criteria that define the threatened ecological community cannot be converted without the approval of the Commonwealth minister.

A 30m wide perimeter buffer around the WBR populations will be established, consistent with the EPBC decision recommendations (see Figure 6). Further details are provided in the management commitments.

TAM has actively managed WBR on Blackwater Mine since 2008 and has recent experience in applying a buffer from operations. The mine management has established the buffer and maintained this during operations.

Figure 6 WBR Buffer Area for Protection at Hawkes Creek North



6.1.2 Flora

Fifty-six vascular plants were recorded. None of these species are listed as threatened under either the Tasmanian Threatened Species Protection Act 1995 or the Environment Protection and Biodiversity Conservation Act 1999.

One threatened species of lichen (*Menegazzia minuta*) has potential to occur in the study area. It is restricted to the canopy twigs of *Eucryphia lucida* (leatherwood) trees in thamnic rainforest in the west of the State. It has only been recorded by one person at two locations (3 records) that are more than 85 km apart. Its habitat is common and widespread in western Tasmania. It is highly likely to be more common and widespread as well but is seriously under surveyed simply due to the difficulty in assessing its canopy habitat. A survey would be difficult to justify as well as destructive.

6.1.3 Mammals

Suitable ground burrows/hollows for Tasmanian devils and spotted-tailed quolls were identified but no activity was recorded. The survey followed regulatory guidelines. The DPIPW pre-clearance den management protocol will have to be implemented on each potential den before works can proceed.

A very low incidence of traffic at high-risk times for roadkill is anticipated on the roads that are already shared with forestry traffic that passes through the site to the Roger River Road.

6.1.4 Raptors

The study area contains a range of nest habitats with mature eucalypt, occasional old growth trees, rainforest with blackwood present. An aerial survey of the study area and buffer in 2019 did not record any eagles' nests within 500 m. Although nests may be present further afield no records of nests found as a result of searches related to forestry operations in the vicinity present a constraint.

The nearest known eagle nest is more than 1 km. The location of the record has been logged. It is further away than it is from the existing operation and is surrounded by new plantation and recently converted forest and ongoing forestry operations. No mitigation is recommended for this nest record and none is warranted based on the search of a 500 m buffer.

No Grey Goshawk nests were recorded from ground-based searching in 2020, although a bird was heard calling within the study area. The goshawk habitat is suboptimal and so does not meet the Forest Practices Authority (FPA) criteria for high quality habitat and as such no mitigation through offset is required.

6.1.5 Invertebrates

Despite the Arthur catchment being considered an important location for the Giant Freshwater Lobster (GFL), the surface waters in the impact area are unlikely to contribute significantly if at all, as a source population. Consequently, no significant impact is anticipated on the GFL.

The habitat is likely to be utilised at a low density from time to time. The habitat should be protected sufficiently to sustain its quality by implementing appropriate measures to protect water quality. These measures should ensure that fines and pollutants are not able to enter the streams.

Giant Freshwater Lobster: The two larger streams have low to moderate habitat quality when assessed using the Forest Practices technical notes for juvenile GFL. However, the predominance of fine silt throughout all streams decreases the quality of the habitat for juvenile GFL. Litter and gravel sampling failed to locate any juvenile GFL. The two permanent streams in the study area are likely to support adult GFL from time to time as there are small pools and coarse woody debris in the streams.

Freshwater hydrobiid snails: The small creeks have suitable habitat for threatened freshwater hydrobiid snails. They were not surveyed for after agreement from DPIPW E that avoidance measures are adequate and so no disturbance is anticipated.

Keeled snail: Survey for Keeled snail in all vegetation communities failed to locate any specimens although suitable habitat is present on the site. The ridgeline silica deposits may not be suitable if they express as a surficial sandy substrate – there were fewer snails of other species found on the ridgeline generally.

Marawah skipper is unlikely to be present as *Carex appressa* was only present as occasional plants throughout the study area.

6.1.6 Weeds and Pathogens

No declared weeds or pathogens were recorded during the survey. TAM maintain an active weed management program across all mining sites to ensure no weeds are imported or transported between sites, due to the common sharing of equipment between co-located sites.

The key management measures implemented by TAM currently and will be used at HCN are:

- All vehicles/equipment travelling to HCN and that have been in weed populated areas, should be cleaned before travelling to HCN to limit any spreading of known weeds;
- Soil should not be transported to and from HCN; and
- Any machinery moving between sites will be cleaned using the guidance provided in the *Department of Primary Industries Parks Water and Environment (DPIPWE) 2015 Weed and Disease Planning and Hygiene Guidelines* prior to entering HCN or access road.

6.1.7 Legislative Implications

Based on assessments against EPBC significant impact criteria no significant impacts are likely without a need for mitigation. Any impact on streams should be minimised for crossing and avoiding sedimentation from mining spoil. If streams are avoided then no significant impacts are anticipated on matters of national environmental significance and as such referral is not recommended.

If stream sedimentation is avoided no Permits are required under the Tasmanian TSPA.

6.1.8 EPBC Referral

TAM prepared and submitted a referral under the EPBC Act on 29 March 2021 and the activity was not deemed a controlled action on 17 May 2021, if the activity was undertaken using the following prescriptions to avoid significant impacts on listed threatened species and communities:

Measures to protect the Tasmanian Devil (*Sarcophilus harrisi*):

1. The den survey and management protocol must be implemented within the action area prior to any impact occurring

Measures to protect Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (*Eucalyptus ovata* / *E. brookeriana*).

2. Prior to carrying out any operation that may cause disturbance within 30m of the plant community, a fence or similar method will be used to delineate the 30m buffer identified in Figure 6

Measures to protect the Tasmanian Wedge-tailed Eagle (*Aquila audax fleayi*)

3. No impact may occur during the breeding period within 500 m of any known and active Tasmanian Wedge-tailed Eagle (*Aquila audax fleay*) nests or within the 1 km line of site from any known and active eagle nests.

6.1.9 Management Commitments

The following management commitments are made based on the Flora and Fauna survey and EPBC Assessment:

Pre-clearance Commitments:

Commitment 1: Protect the WBR by applying a 30m buffer prior to carrying out any operation that may cause disturbance

Commitment 2: Apply the den survey and management protocol to ensure all den opportunities are decommissioned once proven to be inactive and vacant.

Commitment 3: Complete an eagle nest survey of a 1 km radius if site clearance has not commenced within 2 years of the last eagle nest survey. Check with FPA to determine currency at that time¹.

Commitment 4: Ensure that water quality management systems are in place to protect all streams

Commitment 5: Ensure a site hygiene and weed management plan is developed and practices are in place to minimise the introduction and spread of weeds and plant pathogens

Operational Commitments:

Commitment 6: The site will display signs warning of the presence of all wildlife and indicate a recommended maximum speed of 60 km between dusk and dawn between the site and public roads. The signs should be located at the exit from the site. On public roads all wildlife speed reduction warning signs will be obeyed and compliance reinforced the signs at the exit from the site.

Commitment 7: Ensure that water quality management systems are operating as intended and maintain or adapt as required.

Commitment 8: Ensure site hygiene practices are maintained to minimise the introduction and spread of weeds and plant pathogens

Commitment 9: Monitor weeds and plant diseases and control weeds annually in the appropriate flowering period

6.2 Surface Water

6.2.1 Existing Conditions

At the south eastern end of the proposed mining area is an unnamed drainage line of Hawkes Creek, formed in a topographical depression. The drainage line will not form part of the works and is outside the south east boundary of the extraction areas. Drainage lines in relation to extraction activities are illustrated in Figure 3.

The drainage line is unlikely to provide any beneficial reuse for downstream users due to distance to users, the low flows observed on site and influences from other downstream catchments. The drainage line is likely to only have flow immediately following rainfall.

¹ Existing advice indicates a new survey will be required after February 2021

There is little substrate observed in the drainage line. Generally, the substrate is mud and rotting vegetation and unlikely to provide suitable habitat for a diverse range of species, however, the drainage line may support local snail species

The drainage line is not listed on the Conservation of Freshwater Ecosystems Database (CFEV - <https://wrt.tas.gov.au/cfev/login.jsp>). The CFEV database aims to ensure that priority freshwater values are appropriately considered in the development, management and conservation of the state's water resources.

The CFEV is populated by a statewide audit and conservation evaluation of Tasmania's freshwater-dependent ecosystems, which used existing environmental data to identify where aquatic values exist and their overall priority for conservation management. The FWD or the drainage line could not be found in the CFEV database, it is assumed the drainage line does not contain appropriate conservation values and of low conservation value and therefore does not meet the criteria to be included in the CFEV database.

The site specific flora and fauna survey has identified that the drainage line may be suitable habitat for hydrobiid snails and their habitat should be protected from operations.

The key risks to the drainage line and hydrobiid snail are:

- Encroachment of extraction effort on the channel, disturbing channel habitat
 - This is a low risk of occurring because a bund will be constructed from stripped vegetation and overburden and located at the toe of the pit. This will provide a clear delineation of the extraction activity with the drainage line and capture any pit runoff to prevent it entering the drainage line.
- Sediment/silica laden water entering the drainage line and smothering habitat or snails themselves, reducing light and disrupting flow in the channel:
 - A runoff detention area will be constructed within the bund and extraction area to capture and treat any in pit runoff prior to entering the drainage line. A perimeter cut off drain will also be constructed above the current extraction area to divert any catchment runoff away from the extraction area and bund, reducing the volume of runoff that needs to be managed prior to discharge and maintaining catchment flows into the drainage line.
 - Silica is relatively free draining, allow water to drain through it, rather than ponding on the surface. This is the experience at Blackwater and Hawkes Creek.

6.2.2 Bund

TAM will construct a 3m high bund wall at the toe of the cells to intercept any operational runoff and direct flows east to a settling area. The bund will be constructed using stripped vegetation and topsoil.

The bund will be approximately 4 m wide at the base, possibly wider, to ensure the structural integrity and the bund does not become unstable or a hazard to the drainage line or works inside the pit.

All areas of extraction will be bunded to direct surface waters to the sediment ponds (Figure 3), to prevent any offsite discharges.

6.2.3 Surface Water Detention

TAM recognise that any pit water must be controlled and captured prior to entering the drainage line to maintain the habitat for potential snail populations, water quality for downstream users and to maintain environmental values.

The key principles of surface water detention are:

- Minimise the exposed surface area at any one time to limit the potential for erosion of disturbed soils or silica;
- Control water flow across the pit by diverting 'up slope' clean water around the HCN pit and into the down gradient catchment (Clean Water Diversion); and
- Provide a suitably sized detention area for solids settling of pit runoff, prior to entering the drainage line (Sediment Detention Pond).

6.2.4 Sediment Detention Pond

The sediment detention ponds will be established during stage 1 to capture and provide primary treatment of in pit drainage water. Additional sediment ponds will be added as extraction advances. Initial locations of the ponds are identified in Figure 3.

Catchment water will be diverted around the workings and rainfall within the extraction area will be diverted to the sediment ponds.

Given the extraction limit of 5000t, it is not deemed necessary that a large scale pond is required for operations. In pit management is deemed the most appropriate option to avoid clearing vegetation for an intermittent operations.

The design and operation of the pond has been taken from guidance provided in *Managing Urban Stormwater Soils and Construction Volume 2E Mines and Quarries. Department of Environment and Climate Change NSW 2008.*

The sediment pond will be designed to withstand a 1:20 rainfall event, using rainfall data collected from the Bureau of Meteorology site at Burnie. This is the closest reliable rainfall record. The estimated catchment size is approximately 4000 m² based on contour data provided on www.thelist.tas.gov.au and the operations are on a ridgeline, therefore are not expected to manage catchment flows.

The following criteria were used to determine the pond suitability:

- 1:20 rainfall event
- 1.05 rainfall multiplier
- 120 mm design rainfall intensity for the event over a 5 minute period (BOM data at Burnie)
- 88 l/s design flow
- 22,000 L (22 kL) run off generated in a 5 minute event

The sediment pond will be approximately 9 m wide and 12 m long and 0.6 m deep, which provides for approximately 75kL of storage or approximately 3-4 days storage for a 1:20 rainfall event. From experience on the TAM mine sites in northern Tasmania, the storage time is likely to be higher due to the permeability of the silica which is relatively free draining and therefore less volume of rainfall will drain to the sediment pond.

Short circuiting of the pond is a low risk due to the design of the inlet and outlet pipes which are located to maximise circulation through the pond.

A 200mm diameter PVC pipe will be installed in the wall of the pond to establish the outlet. Outfall protection may be needed to prevent erosion at the outlet. If this is deemed a risk during construction, rick pitching will be used to line the outfall and reduce erosion protection.

6.2.5 Clean Water Diversion

TAM will establish a clean water diversion (CWD) around the active cell to prevent catchment flows into the workings and into the sediment pond. It is also an operational advantage to keep the silica as dry as possible.

The CWD will be a V notch channel constructed by TAM in the active cell, immediately upgradient of the working area. The CWD will be consumed as the mining effort continues and re-established for each new cell.

The CWD will follow the natural contour(s) and may drain in two directions, due to the operations being on a ridge line. The CWD will drain to a vegetated area and be constructed to avoid creating erosion or a secondary sediment control issue.

The CWD will be sized as appropriate for the specific location it is constructed in. It is not deemed appropriate at this stage to nominate a specific size e.g. 1:5 or 1:20 return period, due to the location on a ridge line, the relative intermittent operations and the CWD will be consumed and re-established as mining advances. Establishing a permanent CWD is likely to create a larger operational footprint than is necessary in this location.

TAM will be using excavators on site so can quickly respond to the need to increase the size or alignment of the CWD. The HCN is located adjacent to Hawkes Creek operations, so oversight and management is located nearby.

The intention is to rehabilitate the worked out extraction areas, once target silica is removed to a stockpile. The rehabilitation will use the stripped vegetation. This approach reduces the area of exposed ground that would create a sediment laden runoff and stabilises the worked out areas.

Commitment 10: A bund will be constructed around the toe of the pit to capture any pit runoff

Commitment 11: A sediment detention pond will be created to detain pit runoff for primary treatment prior to discharge to the drainage line

Commitment 12: A clean water diversion will be constructed above the pit to divert catchment water around the active working areas. If during mining operations, the diversion needs to be increased in size, TAM will perform this work immediately.

6.3 Aboriginal Heritage

Cultural Heritage Management Australia (CHMA) were engaged by TAM to undertake a cultural heritage investigation of the mining area on the lease.

There were no items of significance and the report was provided to AHT and EPA, but is not included in the EER for cultural sensitivity and heritage protection reasons.

6.4 Significant Areas

There are no significant areas on the site according to www.thelist.tas.gov.au or the local planning scheme.

The proposal (either construction or operations) will not have a noticeable impact on any current or future local significant areas.

6.5 Dust Emissions

6.5.1 Existing conditions

There is no known dust emission from the ML due to the absence of any activities. The dominant wind direction is from the west.

6.5.2 Potential Impact

HCN will not have stationary emission points during works. Dust sources on site are associated with the following activities:

- Heavy and light vehicle movements on internal roads;
- Stripping and stockpiling of topsoil and or vegetation; and
- Extraction activities.

These sources will become an actual dust source when these activities are combined with prolonged windy and dry conditions. On their own, these activities are unlikely to generate a dust emission migrating outside the Land.

Impact to the visibility on roads due to the surrounding standing vegetation with well developed understory and mid story vegetation, providing screening to reduce air borne spread of dust.

On rare occasions, dust may settle on roofs that collect rainfall for drinking water use, however due to the HCN location, this is deemed very unlikely due to their location being 6km from the ML.

According to the Acceptable Standard in the Quarry Code of Practice (QCP), dust should not normally be visible crossing the boundary of the premises. The QCP does concede that environmental factors, such as wind conditions, may on occasion, make the retention of all visible dust on the site impossible.

In such cases, the operator must take all reasonable actions to ensure that the emission of dust from the premises is minimised.

Roads within the boundary of the premises must be watered or sealed when necessary or when directed by the approval authority, to minimise environmental nuisance. Trucks must utilise effective dust control measures such as tarpaulins, load dampening when travelling by public roads.

Generally, dust produced by the operation of the quarry or by transport, must be effectively controlled to the satisfaction of the approval authority.

6.5.3 Assessment of Effects

TAM's standard extraction method is to minimise the area of exposed silica. Not only does this method reduce contamination of the silica, but it also significantly reduces the potential for dust emissions by reducing the size of the dust prone area at all times. Cells will also be rehabilitated after extraction ceases to reduce the dust prone potential.

Heavy machinery movements are not expected to be a significant dust source because the internal gravel road is sheeted to provide a trafficable surface, reducing the dust potential. Dust emissions from the silica in the dump truck are unlikely due to the low speeds the dump truck can safely travel at on the internal road (generally < 25 km/h) and overhanging vegetation (up to 20 m high) providing either protection from winds or the ability to 'trap' any silica emissions. Further, the silica is typically moist during extraction, providing a binding effect and less dust prone. Experience at Blackwater and other TAM operations indicates silica in the dump truck is not a dust source.

TAM currently manages dust emissions using a water cart and this has proven to be an effective management option. This strategy will be used at HCN.

The impact of any dust emissions is likely to be aesthetic only, discolouring vegetation. No impact on surrounding public road network (5km) or nearest residential properties is expected (6km from ML).

Dust monitoring is not proposed because of the successful dust controlling strategies used by TAM at existing Hawkes Creek. Further the HCN is 6 km to the nearest existing house and surrounded by

trees, which provides some protection from winds and acts as a screen to reduce the potential for dust to migrate beyond the HCN.

6.5.4 Management Measures

The following management measures are made

Commitment 13: If nuisance dust is generated by HCN operations (including transport), operations will cease and a water cart will be used to control dust emissions.

Commitment 14: Existing vegetation screens will be maintained to provide protection from winds

Commitment 15: A water cart will be used on internal roads if required

Commitment 16: Cells will be progressively rehabilitated to reduce the potential for dust emissions

6.6 Liquid Effluent

There will be no liquid effluent created by the proposed works. There is no processing on site, no manufacturing, no point of discharge for liquid effluent.

Further discussion of potential surface water impacts are discussed in other areas of the EER.

6.7 Solid Waste

If extraction commences, the only source of solid waste is employees and the extraction itself creating the following waste streams:

- Lunch room wastes (plastic, paper, containers) which will be very minor in quantity from 1 operator and 1 articulated truck driver. All lunch room facilities are provided for at the adjacent Hawkes Creek Mine and will be used, rather than duplicate facilities on the small and intermittent operations at HCN.
- All waste silica will be stored on the existing Hawkes Creek Mine and transported back to HCN to back fill the extraction area once extraction ceases, or be directly used as backfill at HCN in areas where extraction has ceased. This material is not deemed a 'solid waste' under this EER as it is the same material that was extracted, has not been altered physical or chemically. It is simply out of specification silica that can be reused as rehabilitation material on HCN where it was extracted.

No management commitments are deemed necessary.

6.8 Noise Emissions

6.8.1 Existing Conditions

There is no known noise emissions on the ML, the only source of adjacent noise is the existing Hawkes Creek Mine and other operations in the areas.

6.8.2 Assessment of Effects

HCN is a straightforward and relatively small operation. The only equipment required for operations will be:

- 14-30t Excavator (silica extraction, cell and bund construction and rehabilitation);
- Water Cart (intermittent use, dust suppression); and
- 1 x Articulated truck movements carting silica.

No blasting is proposed as part of operations.

The operations are unlikely to create an unacceptable noise emission that is noticed outside the ML. Current operations by TAM using the same extraction method and equipment at Hawkes Creek and Blackwater, has not created any noise complaints raised to either TAM, EPA or local Council.

HCN will source all machinery and workforce from the adjacent Hawkes Creek Mine, therefore as works progress at HCN there is a corresponding decrease at Hawkes Creek. Accordingly, there is not expected to be a net increase in noise emission in the wider area.

Extraction at HCN is likely to occur in an intermittent basis, rather than continuous operations, because equipment and labour is shared from the adjacent Hawkes Creek Mine. Extraction is likely to be 1000-2000t at a time. A 30t excavator could raise this quantity of shallow silica on site in 2-3 days, therefore the equipment is only operating for short and intermittent amounts of time and unlikely to impact the local amenity.

The nearest resident is approximately 6km from ML boundary. At this distance the combinations of the stands of vegetation providing a natural noise barrier, intermittent workings, only two pieces of machinery working at a time, noise emissions are unlikely to be noticeable beyond the ML.

6.8.3 Management Measures

The following management measures will be implemented:

- All equipment will be maintained according to manufacturers' requirements
- No excessive revving of the engine will be undertaken

6.9 Traffic and Transport

There is no traffic on the ML currently as no operations occur on site.

If the project is approved, all raw silica will be transported along existing ML roads to Hawkes Creek mine for stockpiling, screening and storage until it is necessary in the manufacturing process at Wynyard.

All silica extracted from HCN will be transported to Wynyard using the existing internal gravel road, past the TAM workings at Hawkes Creek (using existing road) and to Chatlee Road.

At the 5000t extraction limit, and assuming 100% of silica extracted from HCN is within specification and suitable for processing, 5000t would be 125 truck movements per year or 2 -3 truck movements per week (48 weeks of the year) on Chatlee Road to Stennings Road in Wynyard.

The production from HCN, will see a corresponding decrease in production at Hawkes Creek, therefore there is no net increase in traffic movements.

The Chatlee Road, Rodger River Road and Stennings Road are suitable width, site distance and geometry for heavy vehicle transporting raw silica and no alterations to the road network are required.

6.10 Off-Site Impacts

The proposal is not expected to cause any off-site impacts as all manufacturing activities occur on site, within the existing buildings. No new facilities, infrastructure, roads, loading/unloading facility or assets are required offsite to realise the increase in production.

No changes to the approved existing mining operations or inert waste dumps are required for this proposal to be approved.

No management measures are deemed necessary.

6.11 Hazardous Substances and Chemicals

The operations do not have any need for hazardous substances or chemicals. The only materials needed on site are:

- Diesel/oil/lubricants for heavy/light vehicles and machinery (diesel is stored in 300L transfer tank in vehicle tray)
- Grease cartridges for excavators (500 ml cartridge)

The diesel is contained in a transfer tank compliant with AS1940 and AS2809.2 in in the tray of a utility light vehicle. The tank capacity is 300L. Only sufficient fuel for the particular day is carried to the site. Oils and lubricants are also stored within the bund to capture any minor drips. Waste oil will not be removed from equipment at HCN.

In the event of a spill, a spill kit is located on the trailer and the abundance of sand and machinery on site allows the proponent to quickly respond to a spill by building a bund with sand and control any migration.

The diesel is dispensed using a conventional trigger and gun, reducing potential for overfilling (due to auto shut off) and a spill would be limited to 1 draw of the hose, generally < 1L. No chemicals are needed for operations.

6.12 Site Contamination

No potentially contaminating land use activities have occurred on the site. The proposed use of the land has the potential to cause localised contamination during refuelling, however no historical refuelling incidents have been recorded that may give rise to local contamination.

No further discussion is deemed necessary.

6.13 Sustainability and Climate Change

The increase in production is unlikely to have a noticeable impact on climate change and will not impact local, State or Federal governments achieving climate change policies.

Impacts from varying climates and more intense weather events has the potential to impact the site and potential offsite impacts, however this can be managed using existing management protocols and controls discussed in this EER.

The site will continue to derive sustainable outcomes with large scale water recycling to reduce raw water demand.

6.14 Rehabilitation and Decommissioning

It is proposed to rehabilitate the cells after extraction has ceased to maintain compliance with the *Quarry Code of Practice* (QCOP, May 2017)² and limit potential for disturbed ground to impact localised water quality. Rehabilitation immediately following extraction has been a successful strategy implemented by TAM their other mines.

The maximum open and unrehabilitated area would be 1.6 ha.

The rehabilitation strategy for HCN is as follows:

- Rehabilitation will be undertaken by TAM employees or contractors, overseen by the Hawkes Creek Mine Manager;
- The aim of the rehabilitation is to return the landscape to a similar topography and condition to that of pre-extraction works;
- The extraction area will be stabilised following extraction to remove any unstable materials, establish benches where deemed necessary and ensure the perimeter cut off drain is operational and follows the localised contour;
- Any cell infrastructure will be removed (e.g. pegs/tape outlining cell boundaries, Karst exclusion zone markers);
- The stockpiled strippings from the cell establishment (top soil and vegetation placed in a bund around the toe of the extraction area) will be returned to the excavated cell. Stripped soil will be directly spread over the cell, then overlain with the stripped trees, and smaller vegetation. This strategy is consistent with section 6.9.2 of the QCOP.
- Rehabilitation will be undertaken immediately after extraction has finished in each cell and as the adjacent cells are established. This aims to limit the open area at the HCN at any one time and due to the intermittent nature of the extraction at Stage 1 and controlled, methodical extraction at stage 2, this strategy should be readily achieved by TAM.
- TAM will continue to engage with specialist sub consultants to undertake weed identification and in the event weeds are established after rehabilitation weed control will be completed by TAM employees.
- Access to and around the lease will be maintained during rehabilitation for access to additional silica resource and for maintenance, weed control and firefighting.

If a short-term cessation of activities is to occur, then the following actions would be taken:

- EPA notified and kept up to date with the short-term cessation
- All machinery removed from the site
- All diesel/oil/lubricants removed from the site
- Worked areas made safe, reduce drop offs
- Signage updated with current phone numbers for the proponent
- Continuous oversight from the proponent and locally based employees to ensure the site remains safe and secure and no environmental risks arise e.g. sediment control ponds are checked

There have been no historical reasons for a short-term closure, however it may happen into the future unexpectedly.

² Environment Protection Authority (2017) *Quarry Code of Practice* 3rd Edition, EPA Tasmania, Hobart, Tasmania

The following management commitments are made:

Commitment 17: A decommissioning and rehabilitation plan will be provided within 12 months after approval is granted for HCN

6.15 Hazard and Risk Assessment

TAM has recently completed a hazard and risk assessment of all extraction operations to ensure risks are identified and adequately addressed to limit or eliminate impact on the local environment, staff, assets and adjacent TAM operations.

The purpose of the qualitative risk assessment is to identify the potential environmental impacts to values around, downgradient, and downstream of the ML.

For the purposes of the risk assessment, the potential environmental values are:

- Adjacent land uses
- The Arthur River catchment
- Known environmental values around the site.

The consequence and probability are considered in the risk assessment for each risk and defined below in Table 1.

Table 1: Definition of Risk Assessment Terms

Consequence	Category	Description
	Catastrophic	Substantial offsite impacts to environment, long term environmental damage and remediation required. Failure of existing and future management controls at the HCN
	Major	Offsite impacts to specific environments, medium term environmental damage, remediation required and non-compliant with EPN
	Significant	Some offsite impact
	Minor	Minimal off site impact, on site impact requires remediation
	Negligible	No identifiable onsite or off site impacts
Probability	Category	Description
	Almost Certain	Expected to occur all of the time
	Likely	Expected to occur most of the time
	Probable	Might occur
	Unlikely	May occur, but not expected
	Rare	Only to occur under exceptional conditions

The risk matrix used for the IWD is provided below in Figure 7.

Figure 7: Risk Matrix

		Likelihood or Probability				
		Negligible	Minor	Significant	Major	Catastrophic
Potential Consequence	Almost Certain	11 M	16 M	20 H	23 E	25 E
	Likely	7 M	12 M	17 H	21 H	24 E
	Probable	4 L	8 M	13 M	18 H	21 H
	Unlikely	2 L	5 L	9 M	14 M	19 H
	Rare	1 L	3 L	6 L	10 M	15 M

A summary of the key risks and controls are summarised in Table 2. This list is not exhaustive and concentrates on the key risks only, additional risks may become apparent over time and will be added to this list.

Table 2: Hazard Risk Assessment

Aspect/Hazard	Issue	Pre Control Risk	Control Measure	Post Control Risk	Responsible Person	Timeframe
Site Management	Environmental values not identified	24E	TAM to provide a site induction to all staff and contractors of environmental values and permitting requirements	14M	TAM	Continuous
	Works outside ML		TAM to adequately mark the ML boundaries near extraction areas		TAM	Upon commencement
	Unresponsive to incidents at ML	24E	Management by TAM to ensure issues raised are addressed in a timely manner	9M	TAM	As required
Traffic/Transport	Truck roll over on internal roads or machine roll over on extraction area	19H	TAM will ensure the road is fit for operations prior to use by the moxy truck using the road, including suitable site distance, no pot holes and geometry	9M	TAM	Prior to extraction
	Overloading trucks before leaving mine	19H	TAM uses hydraulic loading scales on the loader to ensure no trucks are overweight	9M	TAM	Loader operator and truck drivers
Operational	Dust	9M	TAM maintains a dust management plan for silica dust to ensure overexposure does not occur	5L		At all times
	Fire (either offsite or on site generation)	9M	TAM maintain water carts on site for dust suppression and to condition screened silica so can use to suppress a fire as needed	5L		At all times, heightened awareness in summer

7. Part D – Management Commitments

The following management commitments are made to support this project (Table 3)

Table 3: Summary of Management Commitments

Commitment No	Commitment	Responsibility	Timeframe
Commitment 1	Protect the WBR by applying a 30m buffer, however maintain drainage to the WBR to ensure the existing populations can survive	Mine Manager	Prior to any clearing
Commitment 2	Apply the den survey and management protocol to ensure all den opportunities are decommissioned once proven to be inactive and vacant.		
Commitment 3	Complete an eagle nest survey of a 1 km radius if site clearance has not commenced within 2 years of the last eagle nest survey. Check with FPA to determine currency at that time ³ .		
Commitment 4	Ensure that water quality management systems are in place to protect all streams		
Commitment 5	Ensure a site hygiene and weed management plan is developed and practices are in place to minimise the introduction and spread of weeds and plant pathogens		
Commitment 6	The site will display signs warning of the presence of all wildlife and indicate a recommended maximum speed of 60 km between dawn and dusk between the site and public roads. The signs should be located at the exit from the site. On public roads all wildlife speed reduction warning signs will be obeyed and compliance reinforced the signs at the exit from the site.		During Operations
Commitment 7	Ensure that water quality management systems are		

³ Existing advice indicates a new survey will be required after February 2021

	operating as intended and maintain or adapt as required		
Commitment 8	Ensure site hygiene practices are maintained to minimise the introduction and spread of weeds and plant pathogens		
Commitment 9	Monitor weeds and plant diseases and control weeds in an annual spring cycle		
Commitment 10	A bund will be constructed around the toe of the pit to capture any pit run off		
Commitment 11	A sediment detention pond will be created to detain pit runoff for primary treatment prior to discharge to the drainage line		
Commitment 12	A clean water diversion will be constructed above the pit to divert catchment water around the active working areas. If during mining operations, the diversion needs to be increased in size, TAM will perform this work immediately.		
Commitment 13:	If nuisance dust is generated by HCN operations (including transport), operations will cease and a water cart will be used to control dust emissions.	TAM	When required
Commitment 14:	Existing vegetation screens will be maintained to provide protection from winds	TAM	At all times during operations
Commitment 15:	A water cart will be used on internal roads if required	TAM	When required
Commitment 16:	Cells will be progressively rehabilitated to reduce the potential for dust emissions	TAM	When required
Commitment 17:	A decommissioning and rehabilitation plan will be provided within 12 months after approval is granted for HCN	TAM	Within 12 months of approval

8. Part E - Consultation

A summary of consultation to date is provided in Table 2. Only targeted consultation has been undertaken to date, consistent with the proposed installation of new equipment, which will be largely unnoticed by the surrounding community.

Table 2: Consultation to date

Consultation Party	Method	Topic of Discussion	Outcome
Mineral Resources Tasmania	Email and Face to Face	New mining lease and mining operations	New ML issued
Environment Protection Authority	Email	Notice of Intent, Project specific guidelines and EER	NOI accepted and PSG issued to assist the development of the EER
Circular Head Council	Phone	Requirements for new Development Application	New DA is required for the project

8.1 Future Consultation

Future consultation is limited to regulatory agencies only. The advertising period will provide time for public comment, should there be any issues not adequately addressed in the approval documentation.

9. Part F – Development Application

9.1 Site

The proposed site is referred to by the following details below and The LAND is defined by the co-ordinates of the Mining Lease.

Property Address	Kaywood Road, Temma
Property ID	3383975
Authority	Forestry Tasmania
Mining Lease	5M/2018

TAM has engaged with Forestry Tasmania to seek permission for the proposed HCN.

9.2 Planning Scheme

9.2.1 Land Use Control Document

The subject site is controlled in land use terms by the *Tasmanian Planning Scheme – Circular Head, 2021* (the Planning Scheme).

9.2.2 Zone

The subject site is zoned *Rural* under the Planning Scheme. This zoning extends some considerable distance around the site.

9.2.3 Overlays

There is a Potential Landslip Overlay covering part of the site, although the risk level is low due to the absence of any habitable buildings as part of the proposal and relatively shallow workings and small scale of works.

9.2.4 Definitions

Within the Planning Scheme are a series of definition within which each use should fit. If there is no exact fit the Planning Scheme then reverts to the concept of “best fit”.

In this instance the use/development can be best classed as *Extractive Industry*

Extractive Industry	use of land for extracting or removing material from the ground, other than <u>Resource development</u> , and includes the treatment or processing of those materials by crushing, grinding, milling or screening on, or adjoining the land from which it is extracted. Examples include mining, quarrying, and sand mining.
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9.3 Zone Purpose

9.3.1 Zone Purpose Statement

The purpose of the Rural Zone is:

To provide for a range of use or development in a rural location:

- (a) where agricultural use is limited or marginal due to topographical, environmental or other site or regional characteristics;*
- (b) that requires a rural location for operational reasons;*
- (c) is compatible with agricultural use if occurring on agricultural land;*
- (d) minimises adverse impacts on surrounding uses.*

To minimise conversion of agricultural land for non-agricultural use.

To ensure that use or development is of a scale and intensity that is appropriate for a rural location and does not compromise the function of surrounding settlements.

TAM Comment: The general area has a long history of being mined. Mining is a key feature of the purpose of the zone – being a resource based industry. The site is surrounded by forestry operations which again is a feature of the Local Area Objectives and the Desired Character Statements. The proposal is deemed to maintain the Zone Purpose and will not compromise the functions of the planning scheme in this Zone.

9.4 Use Table

Within the Rural zone Extractive Industry is a *Permitted Use* within the Use Table (20.2)

9.5 Use Standards

Within the Zone are Use Standards which need consideration for discretionary uses only. As the Proposal is a Permitted Use none of the Use Standards apply in this instance.

9.6 Development Standards

9.6.1 Building Height

Objective:

To provide for a building height that:

- (a) is necessary for the operation of the use; and
- (b) minimises adverse impacts on adjoining properties.

Acceptable Solutions Performance Criteria

A1

Building height must be not more than 12m.

P1

Building height must be necessary for the operation of the use and not cause an unreasonable impact on adjoining properties, having regard to:

- (a) the proposed height of the building;
- (b) the bulk and form of the building;
- (c) the separation from existing uses on adjoining properties; and
- (d) any buffers created by natural or other features.

TAM Comment: No buildings are proposed for the Use, therefore the proposal fully complies with the Acceptable Solution A1.

9.6.2 Setbacks

Objective:

That the siting of buildings minimises potential conflict with use on adjoining sites.

Acceptable Solutions

A1

Buildings must have a setback from all boundaries of:

- (a) not less than 5m; or
- (b) if the setback of an existing building is within 5m, not less than the existing building.

P1

Buildings must be sited to provide adequate vehicle access and not cause an unreasonable impact on existing use on adjoining properties, having regard to:

- (a) the bulk and form of the building;
- (b) the nature of existing use on the adjoining properties;
- (c) separation from existing use on the adjoining properties; and
- (d) any buffers created by natural or other features.

A2

Buildings for a sensitive use must be separated from an Agriculture Zone a distance of:

- (a) not less than 200m; or
- (b) if an existing building for a sensitive use on the site is within 200m of that boundary, not less than the existing building.

P2

Buildings for a sensitive use must be sited so as not to conflict or interfere with an agricultural use within the Agriculture Zone, having regard to:

- (a) the size, shape and topography of the site;
- (b) the prevailing setbacks of any existing buildings for sensitive uses on adjoining properties;
- (c) the location of existing buildings on the site;
- (d) the existing and potential use of adjoining properties;
- (e) any proposed attenuation measures; and
- (f) any buffers created by natural or other features.

TAM Comment: No buildings are proposed, therefore the Proposal fully complies with the Planning Scheme

9.6.3 Access for New Dwellings

This provision does not apply as no new dwellings are proposed.

9.6.4 Development Standards for Subdivisions

This provision does not apply as no subdivision is proposed.

9.7 Scheme Codes

Within the Planning Schemes are a series of Codes which need considered. Only those deemed applicable will be discussed:

9.7.1 Road and Railway Assests Code

Not applicable as it does not apply in the Local Provisions Schedule

9.7.2 Local Heritage

No places, precincts, Landscape Precincts or significant trees are triggered by the Proposal.

9.7.3 Scenic Protection

The proposal does not trigger any scenic protection areas or corridors under the Planning Scheme

9.7.4 Coastal Inundation Code

The proposal is some distance from the Coast and does not trigger this code.

10. Conclusion

The proponent is seeking approval to commence extraction at HCN, to seek high quality silica on a site that is complementary to adjacent TAM operations, allowing TAM to utilise existing labour, machinery and management to oversee operations.

The proponent has provided commitments for key environmental areas of water quality, noise and dust, with the commitments being consistent with the level of risk and outcomes achievable using the existing level of experience and management on site.

The proponent complies with environmental regulations and the proposal is unlikely to be noticeable to surrounding land uses or impact the local environment.

Appendix A Flora and Fauna Report

