Notice of Intent
South Blackwater Mine
Tasmanian Advanced Minerals

Final June 2021

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

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1. Introduction

Tasmanian Advanced Minerals (TAM) is seeking to develop a new silica mine in north-west Tasmania, off Blackwater Road, referred to as South Blackwater Mine (SBM).

The location is approximately 12 kilometers west of Trowutta and is immediately south of the operational Blackwater Mine. The regional and local location of the proposed SBM is provided in Figures 1 and 2 with a high level mine features illustration provided in Figure 3.

The proposed operations will include silica extraction and primary processing (screening and stockpiling) before the silica is transported to Wynyard for further processing. All operations will utiilise labour and equipment from the adjacent Blackwater Mine and all material will be transported from SBM, via the existing road network through Blackwater and onto Roger River Road to Wynyard.

The proposed South Blackwater Mine will complement the existing extraction activities and preserve the longevity of the Wynyard Processing Facility.

TAM is seeking Level 2 approval from the Tasmanian Environment Protection Authority (EPA) and Circular Head Council for South Blackwater, and aim to commence extraction in 2021, or sooner if approval is granted.

2. Purpose of Notice of Intent

The purpose of the Notice of Intent is to:

Initiate the approval process under the *Environmental Management and Pollution Control Act 1994;*

Introduce the proponent and the project to the Board of the Environment Protection Authority (EPA);

Provide an overview of the proposed South Blackwater, operational details, location, and consultation; and

Provide sufficient information to the EPA to allow the project specific guidelines to be prepared and issued to TAM.

3. Background and Proponent

TAM is an Australian owned mining operator and manufacturer of high-grade silica flour from operations in Northern Tasmania. 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 2006 and has level 2 operations at Blackwater, Far West Deposit, Hawkes Creek, Corinna and Wynyard.

TAM is continuously searching for high grade silica to maintain the chemical profile required to meet screen technology specifications and limit waste silica volumes. The proposed mine at South Blackwater will provide TAM with raw silica for processing at the Wynyard manufacturing facility to supplement decreasing resources at Blackwater.

The proponent details are as follows:

Proponent
Proponent: Tasmanian Advanced Minerals Address: 19 Stennings Road, Wynyard, 7325 Responsible Person: Chris Stuart Contact Number: 03 6442 2600 Email: chris.stuart@tasam.com.au ABN: 51 122 089 221 ACN: 122 089 221

4. South Blackwater Mine

4.1 Objective

The objective of the proposed SBM 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.

The proposed SBM provides a high volume of good quality silica, that is close to existing operations at Blackwater and has little overburden. The silica profile at SBM is similar to Blackwater and is easily accessible using existing mine equipment, expertise and methodology. This provides a seamless transition from existing operations.

Initially, a small deposit that provides a speciality blend and a larger deposit that will become the major component of the feed blend at the Wynyard Facility will be developed at SBM as operations and silica resources at Blackwater reduce.

SBM will not be a stand-alone operation, it will use all machinery, labour, transport, oversight, and management from the nearby Blackwater operations. This allows existing infrastructure to be utilised and avoids unnecessary duplication of facilities.

4.2 Mining Lease

The Mining Lease (ML 3M/2020) was granted by Mineral Resources Tasmania (MRT) on 12 April 2021.

The ML covers an area of 1676 Ha and adjoins the boundaries of existing approved operations at Hawkes Creek (27M/2009) and Blackwater (6M/2016). This approach allows TAM to utilise existing assets on both operations to extract and undertake primary processing of Silica extracted from two primary deposits at SBM.

The key assets that existing operations provide to SBM are the road network that does not require new external roads to be constructed into SBM. Two internal roads are planned to be constructed to link the SBM with the existing internal network at Blackwater.

There is no formal use on the mineral lease, and it is unknown when the last operations occurred.

4.3 Deposit Locations

The ML has several discrete deposits of usable silica in two strike lines. The western strike line (which includes the Kuppe deposit) runs in a northwest to southeast orientation from the southeast corner of 27M/2019 and continues towards the southern boundary of the Land to the east of Blackwater Rivulet.

The eastern strike line (which includes the Big Keppel deposit) runs in a northeast to southwest orientation from near the intersection of Blackwater Road and mining lease 6M/2016. Nominal locations of Kuppe and Big Keppel are provided in Figure 4.

Both deposits will be accessed via existing former forestry roads, with some road extensions. Further detail on any road extensions would be included in the formal Level 2 approval documents.

4.4 Extraction Limit

The requested extraction limit is 75,000 tonnes per year. The anticipated mine life is 20 years.

Figure 1: Regional Location of South Blackwater

Figure 2: Local Location of South Blackwater

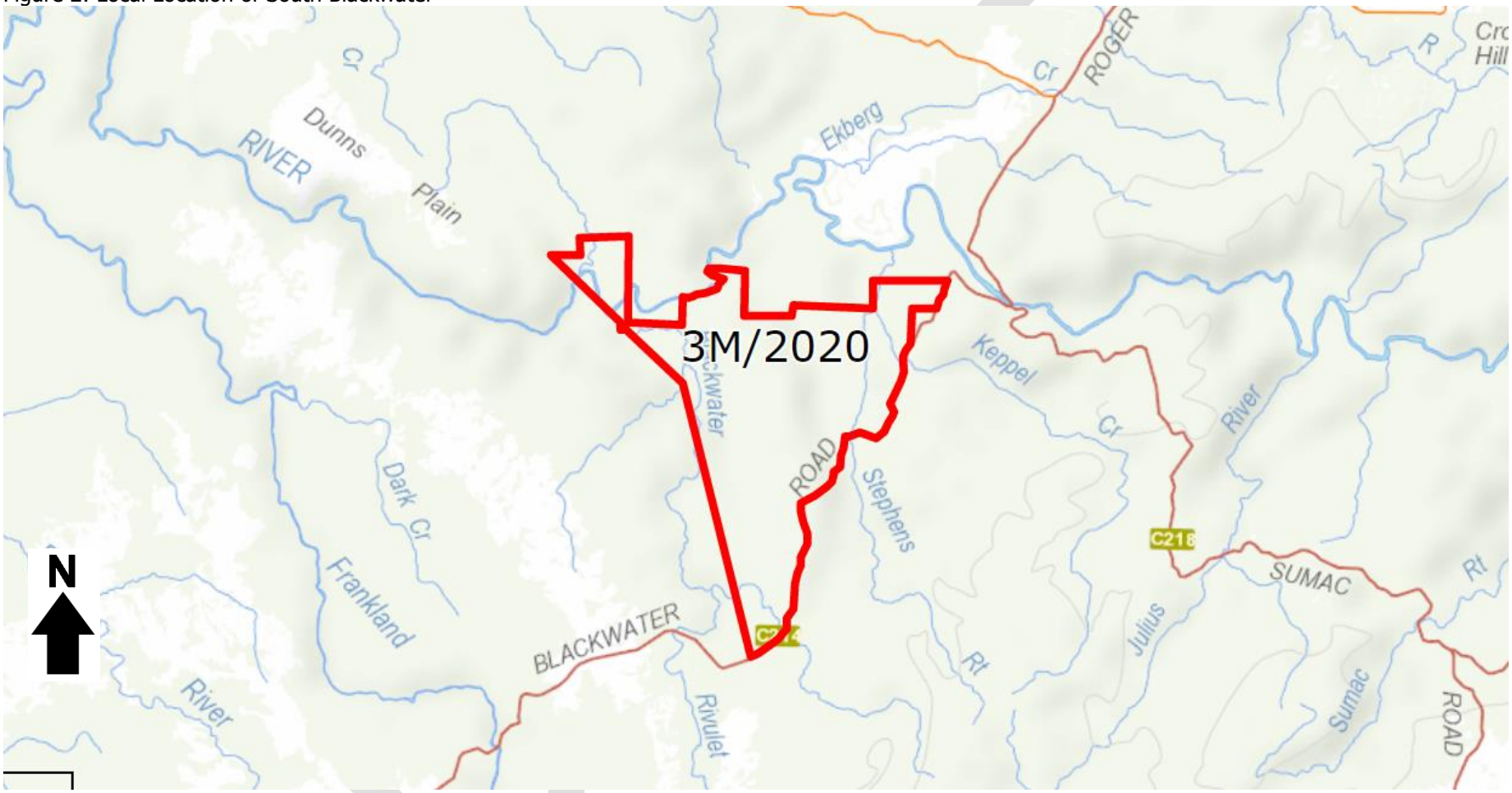


Figure 3: Locations of Key Silica Deposits

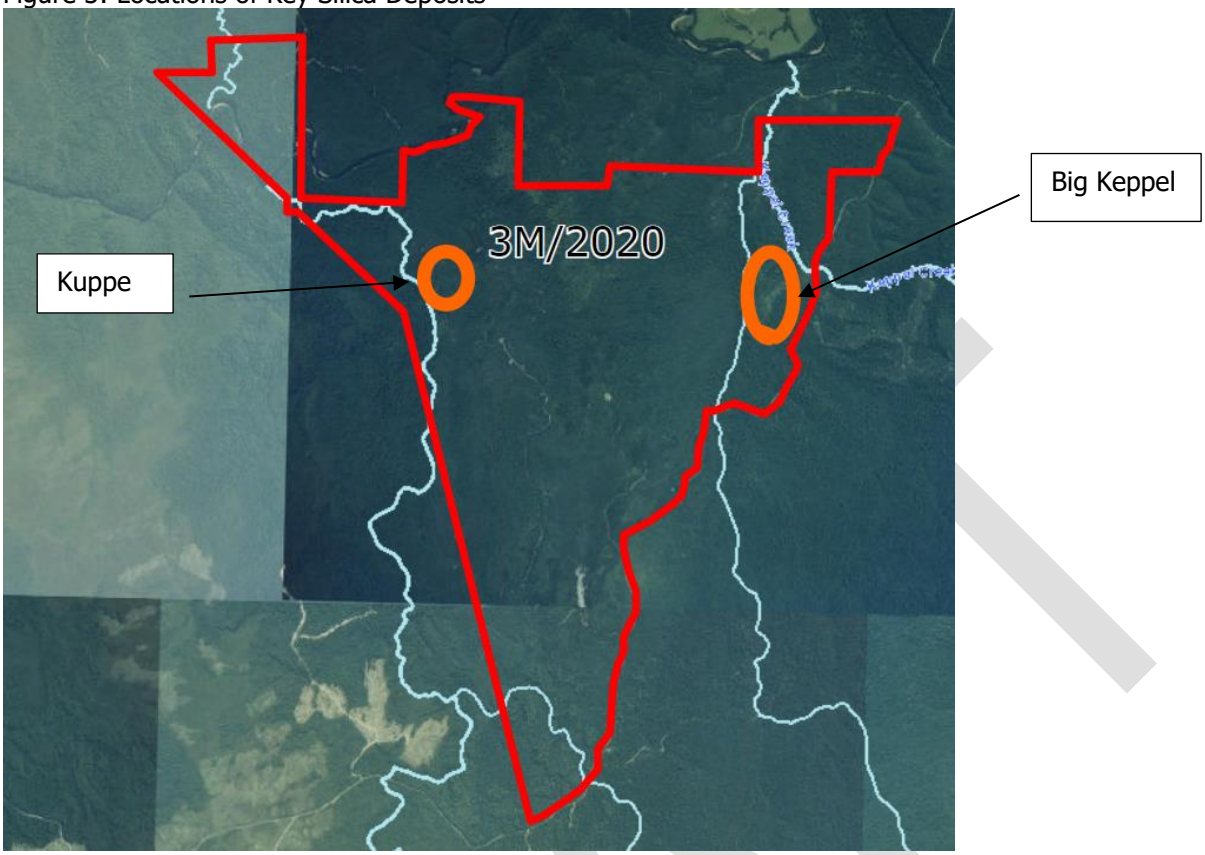
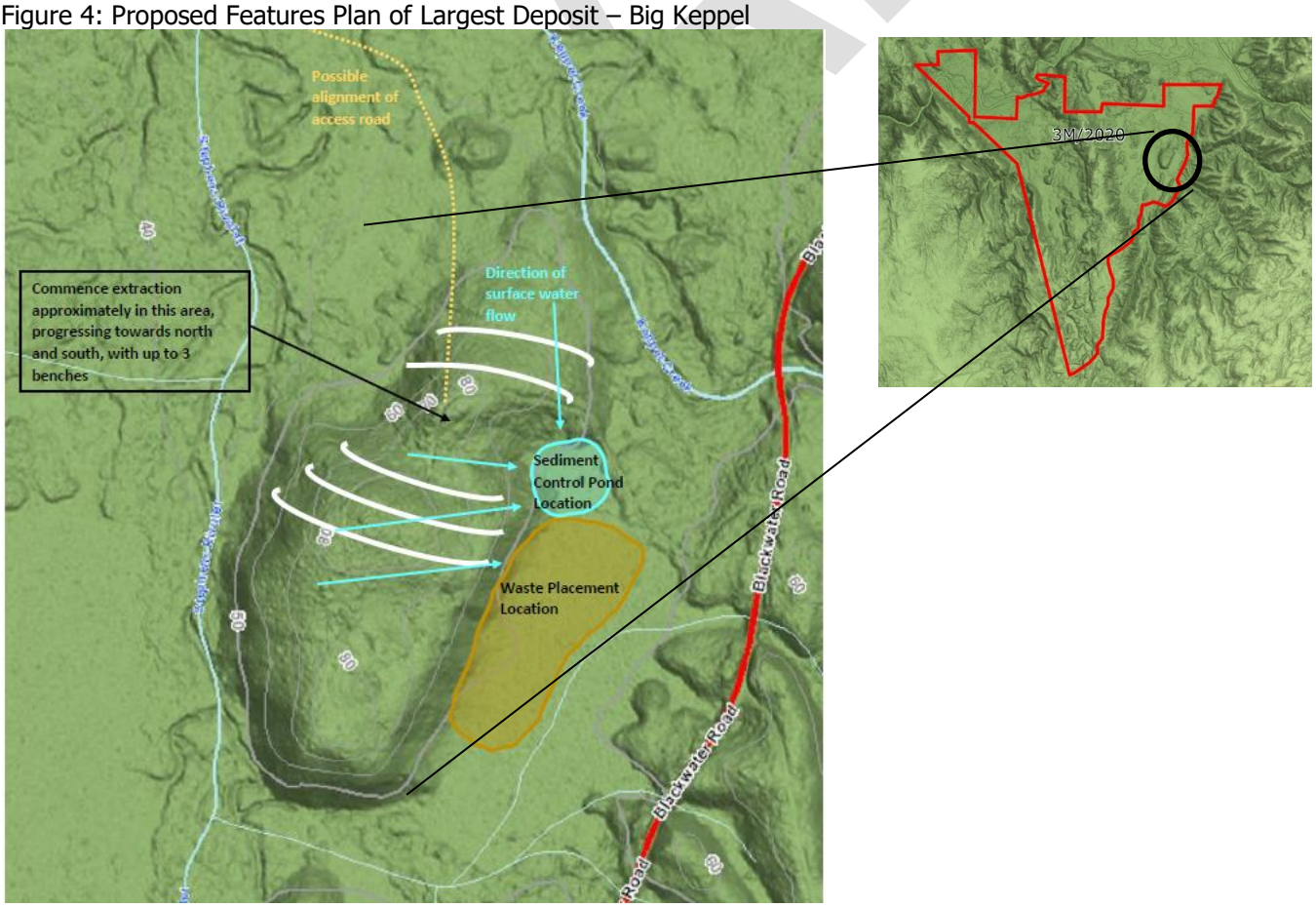


Figure 4: Proposed Features Plan of Largest Deposit – Big Keppel



5. Local Environment

5.1 Current Use and Site Condition

There is no current use on the site and the site is currently covered in mature regrowth vegetation. Gravel roads off Blackwater Road currently exist and provide access to the ML.

The watercourse Blackwater Rivulet exists to the west of the ML and Blackwater Road forms the eastern boundary.

The nominal pit outline of the Big Keppel deposit and the surrounding area was logged in mid 2000s and is in varying stages of regrowth. The area is bounded by Blackwater Road to the east, Keppel Creek to the north and Stephens Rivulet to the west.

5.2 Surrounding Land Use

The nearest residences are located on Jaegers Road and at the intersection of Roger River Road and Leensons Road, respectively.

TAM operates Blackwater Mine, the Hawkes Creek Mine and proposed Hawkes Creek North Mine which adjoin the ML boundary to the north. There are no other known surrounding land uses in the immediate vicinity of the site.

5.3 Zoning

The mining lease is zoned *Rural Living* under the *Tasmanian Planning Scheme* that came into effect on 26 May 2021.

5.4 Elevation

The mining lease is approximately 80m AHD. The pit is likely to be located along a ridgeline from 60-80m AHD.

5.5 Land Tenure

The land tenure is *Permanent Timber Production Zone Land* under the Forest Management Act. This tenure extends considerable distance around the lease.

5.6 Access

Access to the two key deposits (Figure 3) will be provided for via a combination of existing internal gravel roads off Blackwater Mine and an extension from existing forestry roads.

Outward movements of unprocessed silica will be to the Blackwater Mine for processing, stockpiling and chemical analysis before being trucked to the Wynyard facility on Stennings Road for further processing into market ready products.

5.7 Geology

The geology in the nominal pit area is generally summarised as *Silicified carbonate rocks, and/or clayey pug, derived from the Smithton Dolomite* in the 1:25,000 geological maps. This is consistent with observations on site during the exploration program.

Further chemical analysis has identified that:

- Kuppe has distinctive silica qualities allowing TAM to produce blends for speciality products.
- Big Keppel will form the major component of the feed blend at the Wynyard processing facility.
- Big Keppel contains some materials with elevated impurity levels that are currently unsuitable for processing. During mining these materials will be extracted and placed in a waste storage area adjacent to the main deposit.

5.8 Flora and Fauna

In April 2021 North Barker Ecosystem Services (NBES) were engaged by TAM to undertake *Natural Values Assessment* of the South Blackwater Mine, with a focus on five separate study areas including the Kuppe & Big Keppel pits and three access roads. The total area surveyed by NBES was 78.3 hectares. The NBES survey report is contained in Appendix A and notable findings are summarised below:

- A 0.3 hectare stand of *Eucalyptus brookeriana* wet forest was identified within the study area. This forest stand and a 30m wide perimeter buffer has been excluded from the proposed SBM disturbance footprint.
- No threatened vascular plants were recorded within the proposed SBM disturbance footprint.
- No declared weeds were recorded within the proposed SBM disturbance footprint.
- No suitable ground hollows/burrows for Tasmanian devils and spotted tailed quoll were identified within the proposed SBM disturbance footprint, however they are expected to forage across the area. DPIPWE preclearance den management protocols will be implemented by the proponent.
- A helicopter aerial survey identified no new raptor nests in proximity to the proposed SBM disturbance footprint. Three previously recorded raptor nests are more than 1000m away from the SBM disturbance footprint and are well out the line of sight of the proposed operations.

Giant Freshwater Lobster were recorded in targeted surveys of Stephens Rivulet and Keppel Creek, not immediately within the SBM disturbance footprint but in the vicinity. It appears these small headwater streams contain important source populations for this species.

5.9 European Heritage

There is not expected to be any European Heritage values within the proposed pit or mine due to its location and former forestry uses, therefore no specific European Heritage investigation was undertaken.

5.10 Aboriginal Heritage

An Aboriginal Heritage investigation is currently underway and while some areas of sensitivity are recorded on regulatory registers, the exact location of these features is being investigated. Further detail will be provided in in the formal Level 2 approval documents.

5.11 Surface Water

Two watercourses occur in the vicinity of the proposed Big Keppel pit, being Keppel Creek (northeast of pit) and Stephens Rivulet (west of pit). One watercourse occurs in the vicinity of the proposed Kuppe pit, being South Blackwater Rivulet (west of pit). All watercourses are small headwaters of the Arthur River. Required buffers around the waterways will be maintained.

5.12 Ground Water

No groundwater uses are known to exist in the vicinity of SBM and no uses in the area are recorded on the DPIPWE groundwater information access portal.

No groundwater was intercepted during the SBM resource exploration program which involved the digging of test pits up to 4m deep and auger drilling up to 18m deep within the pit shell areas. Given the mining will be conducted on 'elevated' areas it is not anticipated that there will be a need to dewater the mining pits prior to extraction.

5.13 Existing Infrastructure

The only existing infrastructure on site are access roads associated with previous forestry activities in the mid-2000s.

6. Activity Description

6.1 Purpose

The SBM proposal provides multiple benefits to TAM, including:

- Shallow silica deposits that are extractable with existing machinery and mining methods;
- To complement and extend the asset life at the existing Blackwater mining operations; and
- Extension of the of asset life at the Wynyard silica processing facility.

6.2 Impact on Existing Operations

The SBM proposal will rely on the adjacent Blackwater Mine for staff, management oversight, amenities, and machinery to undertake the extraction effort. No significant change is expected to the overall material throughput at the existing Wynyard silica processing facility.

6.3 Proposed Activities on Site

6.3.1 General Description

The activities proposed to be undertaken at the SBM will include:

- Removal & stockpiling of roadside vegetation and debris to improve visibility on the existing internal gravel road;
- Removal & stockpiling of vegetation & topsoil along new road formation and importation of gravel to improve trafficability;
- Removal & stockpiling of vegetation & topsoil at mining pits (Big Keppel & Kuppe);
- Construct water treatment & sedimentation ponds for operational runoff;
- Construct silica waste and resource storage facilities;
- Progressively extract silica resource using 14-30t excavators and screen oversize rock;
- Progressively Transport silica resource via articulated dump truck to the onsite resource storage facilities and to the Wynyard processing facility; and
- Progressively rehabilitate worked-out resources areas via backfilling to surrounding ground levels with silica waste materials, stockpiled topsoil, and vegetation.

The proposed extraction rate at SBM is nominally 75,000 tonnes per year which would continue until the resources is depleted, potentially up to 20 years.

6.3.2 Site Layout

The SBM site layout would consist of:

- New gravel roads into the mining areas (1.15 km long and nominally 5 m wide) linking existing gravel roads;
- New bridges across watercourses;
- Resource extraction 'pits', nominally 600m long x 30 m wide and 12m deep at the maximum depth (depth based on findings from exploration activity);
- Resource stockpiling, transport and screening facilities;
- Operational water runoff treatment pond;
- Operational waste silica storage area.

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

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

6.4 Infrastructure and Equipment

The only equipment required for operations will be:

- 14-30t Excavator (pit and bund construction, extraction and rehabilitation, loading trucks);
- Water Cart (dust suppression); and
- Articulated truck movements carting silica to the main processing area, north east of the site.

The only infrastructure at the South Blackwater during operations will be:

- Existing access road, and a new extension into the proposed ML;
- Resource extraction area;
- Runoff settlement pond; and
- Waste silica storage facility.

6.5 Operating Times

The operating hours at SBM will be daytime only, nominally 0600-1900, 7 days per week, 52 weeks per year.

6.6 Staffing

The existing staff from Blackwater Mine will be utilised at SBM.

6.7 Transport

All silica extracted from the proposed South Blackwater mine will use the existing internal roads to Blackwater Road and onto Wynyard for processing.

At maximum capacity of 75,000 tonnes per year, this will require approximately 4-6 truck and trailer movements per day on Blackwater Road to Wynyard. These movements will form part of existing movements, these are not additional movements from the TAM operations.

7. Consultation

7.1 Consultation to Date

A summary of consultation to date is provided in Table 1. Little consultation has been undertaken due to the small scale and nature of the proposed SBM on an existing approved mining lease.

Table 1: Consultation to date

Consultation Party	Method	Topic of Discussion	Outcome
Circular Head Council	Face to face	To discuss the proposal for South Blackwater and the need for a new Development Application.	A new application is required.
Mineral Resources Tasmania	Email, phone	New ML	ML was granted on 12 April 2021

7.2 Planned Consultation

Given the existing activity and operations by TAM which will be the same as already approved, 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.

8. Key Environmental, Social and Economic Issues

8.1 Environmental

The key environmental issues identified to date include:

- Aboriginal sites identified in the report "*Kuppe and Big Keppel Mine Expansion Areas Blackwater Road, Trowutta, North West Region, Aboriginal Heritage Assessment Report, Final Draft Version 2 November, 2020"* (Stuart Huys and Vernon Graham) are not to be disturbed without the prior approval of the Director of Mines. These features will have a buffer zone around them and the extraction procedure and training of operators will ensure the buffer zones are not breached. An Unanticipated Discovery Plan will also be in place.

- A 0.3-hectare stand of protected *Eucalyptus brookeriana* wet forest was recorded within the study area. Although the area that may be disturbed by the development is below the 0.5-hectare threshold that would require Commonwealth ministerial approval the proponent has modified the disturbance footprint to avoid this vegetation community and has included an additional protective 30 m wide perimeter buffer around it. Proposed roads have been realigned to avoid this protected community and drainage will also be maintained to provide sufficient water for the community to persist. Due to the risk of weed and pathogen introduction and spread machinery hygiene practices will be maintained. Weeds and plant diseases will be monitored and controlled in an annual spring cycle.

- No suitable ground hollows/burrows for Tasmanian devils and spotted tailed quoll were identified within the proposed SBM disturbance footprint however they are expected to forage across the area. DPIPWE preclearance den management protocols will be implemented to ensure all den opportunities are decommissioned once proven to be inactive and vacant. Due to the risk of vehicle road strike on local fauna the proponent will display signs warning of the presence of all wildlife and indicate a recommended maximum speed of 60km/h along the SBM access roads.

- A helicopter aerial survey did not identify any new raptor nests in proximity to the proposed SBM disturbance footprint. Three previously recorded raptor nests are more than 1000m away from the SBM disturbance footprint and are well out of the line of sight of the proposed operations. The proponent will conduct another raptor survey if site clearance has not commenced within 2 years since the last survey.

- The Giant Freshwater Crayfish (GFL) has been recorded in targeted surveys of Stephens Rivulet and Keppel Creek, in proximity to the proposed SBM resource pits and access roads. It appears these small headwater streams contain important source populations for the species. Mining operations in the absence of appropriate controls has potential to cause sedimentation of watercourses and impact to GFL. The proponent will ensure that a water quality management system is put in place to protect all streams and this will include:

    - Operational runoff sediment control measures;
    - Operational dust control measures;
    - Avoidance of stockpiling of waste or resources below the 1 in 10 year flood level;
    - Utilisation of bridges rather than culverts to cross streams;
    - Avoidance of water crossings at sharp bends or sections of unstable channel;
    - Maintenance of a 40m vegetation protection buffer around all streams;
    - Avoidance of the removal of essential shade trees over streams.

The SBM development will involve the disturbance of predominantly thickly forested vegetation with high volumes of grubbing and topsoil expected to be generated. The area requiring disturbance will not be limited to the mining pits as there will also be a need to establish supporting facilities such as roads, bridges, operational runoff sedimentation basins, resource handling areas, temporary silica waste storage facilities and temporary topsoil and vegetation stockpiles. The development of an overly large disturbance footprint increases the risk to environmental aspects such as weeds & pathogens, rehabilitation success, sedimentation of local watercourses and threatened aquatic species. To minimise the total disturbed area at any one time over the project life, the disturbance and rehabilitation at SBM will be undertaken concurrently with mining extraction. The proponent will also develop and implement a detailed management plan that will minimise the disturbance area to the greatest extent possible over the project life.

The following key environmental aspects are not expected to be significant given the type of development and controls already proposed:

- Noise – the small scale and intermittent nature of the operations are not expected to be noticed above the existing noise generated by TAM operations on the lease and high likely to be noticed at the nearest residence.
- Groundwater – no groundwater was intercepted in test pits up to 6m deep within the pit footprint. Any impacts on groundwater are unlikely and no extraction will occur if the project is approved.

- Hazardous materials – no fuel or hazardous substances (solid or liquid) will be stored within or near the HCN because facilities for these materials are provided for as part of the adjacent Blackwater Mine. All machinery and trucks will have spill kits to be used if a leak occurs.
- Air emissions – the operations will not require a dedicated discharge point from the operations and any machinery related emissions are unlikely to be noticeable beyond the immediate working area.

8.2 Social and Economic

The site will have little impact on the surrounding community, including land values as it is wholly contained within the mining lease.

The site is suitable for the proposed silica mining activity, given the local geology, it is located in the vicinity of a Level 2 activity and distance to surrounding land uses.

It will continue to provide economic stimulus to the current employees and contractors and increase the security of employment, while potentially providing new employment opportunities.

Approval of SBM provides resource security for TAM and improves their ability to meet increasing silica specification standards and extend the life of the Wynyard Processing Facility.

9. Planned Surveys and Investigations

The following surveys and investigations are proposed to be undertaken as part of the Level 2 approvals workflow:

- Confirm catchment sizes and detailed design for operational runoff water treatment system and site operational discharge point.
- Develop a detailed surface water quality management plan for construction and operations phase.
- Develop detailed designs for the mine access roads and bridges.
- Develop detailed designs for the mine pits, silica waste storage facility, resources handling areas, topsoil and grubbing stockpile areas.
- Heritage surveys.

The following surveys or investigations will not be undertaken:

- Surface water monitoring in Stephens Rivulet and Keppel Creek. Note that Blackwater Mine did monitor Stephens Rivulet during initial stages of operations and have therefore established a baseline record of water quality.
- No groundwater monitoring of water level or chemistry monitoring will be undertaken due to the inert nature of the silica and little interaction of the site with regional groundwater due to the geology and elevations.
- No noise investigations or reporting due to surrounding environment and lack of sensitive uses. Further, the proposed South Blackwater operations will be undertaken in the vicinity to an approved Level 2 activity undertaken by the same operator and the proposed extraction method (excavation) is basic on site processing (screening) and is unlikely to be noticeable outside the proposed pit outline.

10. Timetable

The timetable for the approvals is provided below.

Stage	Timeframe
Notice of Intent	July – October 2021
EPBC referral	July – September 2021
EER and DA Submission	December 2021 onwards
Operations	Q1 2022

11. EPBC Referral

A referral will be made under the *Environment Protection and Biodiversity Conservation Act 1999.*

Appendix A
South Blackwater Silica Deposit
Natural Values Assessment