

- stockpiled material (these will vary spatially within the pit); and
- bunding around the area to be extracted to mitigate noise and manage surface water flows. The bunding will be comprised of soil (for use in future rehabilitation works) and waste rock.

ENVIRONMENTAL MANAGEMENT MEASURES

Best practice management is important to the project proponent to minimise the risk of environmental nuisance/harm from the activity. The potential environmental effects which may arise from the activity have been detailed and, where appropriate, actions documented in this DPEMP to prevent and or minimise potential adverse impacts.

Specific attention is made of the items summarised below.

Noise Emissions

Tarkarri Engineering was commissioned by Van Diemen Consulting (VDC) on behalf of Mt Oriel Breadalbane to conduct an environmental noise, ground vibration and air blast overpressure assessment for a proposed quarry on the southern and eastern slopes of Cocked Hat Hill, Breadalbane. The assessment report forms part of this Development Proposal and Environmental Management Plan (DPEMP) and is contained within Attachment 7.

The following recommendations by Tarkarri Engineering will be adopted in the development of the project –

- Utilise a charge mass of 35 kg/delay for initial development blasts.
- Blast design should incorporate a minimum stemming depth of 3 m.
- Increase to 50 kg/delay once high wall blasting is established with blast design to incorporate minimum front row burden of 3 m. Additionally, ensure that blast design allows for the high wall face to be oriented away from critical receiver locations as far as practically possible.
- Develop site-specific scaled regressions for the site via spatially varied monitoring of blasting.
- For south-west extent, out to the maximum extent of the quarry, adjust charge mass/delay levels in accordance with results from site-specific scaled regressions once within 400 m of receiver [sensitive uses] locations.

Surface Water

No chemicals, fuels or oils will be stored in the pit overnight, and refuelling of quarry equipment will be carried out using a mobile bund.

Sediment will be managed through the installation and operation of a water management system at the quarry. The quarry 'catchment' will peak at 11 hectares when at full maximum extent.

The quarry floor itself will form a key component of water and sediment control in the quarry – a water collection basin will be maintained in the quarry.

While the quarry is less than 2 hectares in area it is proposed that runoff will be controlled by directing it to a defined but *temporary* basin within the quarry, thus preventing any eroded material from reaching the receiving environment in an uncontrolled manner. This water will then be pumped to a formal sediment basin (see Figure B-3A) for treatment before discharge. Measures will be established in the pit to avoid tracking machinery through the within pit basin.

When the quarry area is between 2 hectares and its maximum 11-hectare footprint, it is foreseen that sediment removal will occur via a well-defined sediment basin within the pit itself, with pit-treated water pumped into a formal sediment basin located outside the bunded area which then discharges to the receiving environment. This provides a double-treatment of water for sediment removal and

enables additional fines to be captured and re-used in the activity (eg for blending with the crushed material or for rehabilitation works).

Other Matters

Environmental management measures for other potentially harmful emissions or matters of potential significance are in place or will be put in place to address the following potential effects to the local environment –

- dust mitigation measures including the use of sprays on the crushing unit, the wetting of the internal road network when required and the use of a water spraying system for load dampening;
- waste generated will be limited by not servicing machinery, except for *emergency* repairs or service requirements, within the quarry. Wastes generated from *emergency* repairs will be disposed of in an appropriate bin located near the site office for future disposal at a permitted refuse disposal site; and
- Aboriginal Heritage will be managed by the application of the Unanticipated Discovery procedure issued by Aboriginal Heritage Tasmania.

DECOMMISSIONING AND REHABILITATION

The Mining Lease within which the quarry is located is permitted to have 19 hectares 'open', of which approximately 9.5 hectares are already disturbed (ie from the activities associated with McGraths Quarry). 'Progressive rehabilitation' will occur at the quarrying operation for those areas that have been quarried and are no longer needed or used for the ongoing operations. The rehabilitated land use is agricultural land, which is the current land use.

In the event of permanent closure of the proposed development a detailed Decommissioning and Rehabilitation plan will be developed and submitted to the EPA for approval.

PART A – BACKGROUND INFORMATION

The proposed Cocked Hat Hill Quarry is located on private freehold land at **833 Hobart Road Breadalbane**, in the Northern Midlands municipality (Figures A-1 and C-1).

A.1 ACTIVITIES IN MINING LEASE 1958P/M

The proposed Cocked Hat Hill Quarry is located within Mining Lease 1958P/M but it will be separated from McGraths Quarry by a retained section of land, as shown in Figures A-2A and B-3A.

A.1.1 McGrath Quarry (syn. McGrath's Pit)

Mining Lease 1958P/M supports the existing *McGrath Quarry* from which it is permitted to extract up to 50,000 cubic metres per annum (Permit to Operate No. 3534 and EPN 8742/3).

The *McGrath Quarry operation* includes the following activities:

- surface site preparation by soil removal and stockpiling;
- excavation and ripping of rock and gravel material;
- blasting to liberate rock;
- crushing of material into various size classes;
- stockpiling of material in quarry area;
- loading trucks with wheel loader from stockpile area in quarry; and the
- transport of materials by truck with/without trailer.

A.1.2 Cocked Hat Hill Quarry

The Cocked Hat Hill Quarry will occur on the Land identified in Figure A-2B, which represents a portion of Mining Lease 1958P/M.

The *Cocked Hat Hill Quarry operation* will include the following activities:

- surface site preparation by soil removal and stockpiling;
- excavation and ripping of rock and gravel material;
- blasting to liberate rock;
- crushing of material into various size classes;
- stockpiling of material in quarry area;
- loading trucks with wheel loader from stockpile area in quarry; and the
- transport of materials by truck with/without trailer.

The quarry operation will include two activities defined within Schedule 2 of the *Environmental Management and Pollution Control Act 1994 (Tas)* (EMPCA) –

- '5. Extractive Industries. (a) Quarries: the extraction of any rock or gravel and producing 5 000 cubic metres or more of rock or gravel per year' [ie. **Maximum 200,000 cubic metres per annum**]; and
- '6. Materials Handling. (a) Crushing, Grinding or Milling: processing (by crushing, grinding, milling or separating into different sizes by sieving, air elutriation or in any other manner) of ... (ii) rock, ores or minerals at a rate in excess of 1 000 cubic metres per year' [ie. **Maximum 200,000 cubic metres per annum**].

A.2 APPLICANT

The applicant, Mt Oriel Breadalbane Pty Ltd, owns and operates the Mt Oriel property which includes the existing Level 2 activity (known as 'McGraths Pit') permitted by permit and EPN 8742/3.

The contact details for the company are –

Mt Oriel Breadalbane Pty Ltd
Level 3, 302-320 Burwood Road
HAWTHORN VIC 3122
ACN 111 443 586

The contact details for the company representative are –

Mr Martin O'Byrne
Director
Mt Oriel Breadalbane Pty Ltd
Mobile: 0417 594 960
Email: martinobyne@robertsre.com.au

A.3 QUARRY DETAILS

Physical address – MT ORIEL, 833 HOBART RD BREADALBANE TAS 7258

Land Titles – 144549/1, 166271/1 and 166270/1 (see Attachment 2)

Planning Zones (*Northern Midlands Interim Planning Scheme 2013*) – Rural Resource

Planning Overlays (*Northern Midlands Interim Planning Scheme 2013*) – ANEF Contours

Mining Lease Number – 1958 P/M

A.4 RESOURCE IMPORTANCE AND PROJECT RATIONALE

The Breadalbane – Western Junction region supports several quarries which exploit the Tertiary basalt formation present in the area (Figure A-3).

A.4.1 Geological Formations

Near Breadalbane, basalt is distributed over an area of about nine square kilometres (Figures A-4A and A-4B). The basalt is of late Eocene age and for the main part the basalt overlies a succession of older Eocene to Palaeocene age mudstone, siltstone and sandstone with minor lignite and conglomerate that was deposited in a graben or half-graben structure. To the west, the basalt laps onto Jurassic dolerite that forms a horst structure. The same dolerite probably underlies the Palaeogene deposits within the graben. It is possible that the basalt was once buried by sedimentary strata that were subsequently removed by erosion, but small pockets of sedimentary deposits may still exist above the basalt (eg Cocked Hat Hill proper). These strata may include mudstone, sandstone and possibly gravel deposits. In a generalised way, the base of the basalt falls topographically from the exposed dolerite in the west towards the east where the valley of Rose Rivulet and its tributaries has eroded into the sedimentary strata and the overlying basalt by backwards retreat.

The basalt is not a uniform rock and this has enabled quarry operations that exploit this material (eg McGrath Quarry) to produce a range of products, some derived from relatively hard un-weathered basalt, to products derived from weathered or altered rock. Contraction cooling joints occur through

much of the basalt and these define columns of various diameters and inclinations. Some basalt is massive and some is vesicular or amygdaloidal containing zeolite. In recent years, the basalt has been recognised to be a composite body composed of at least two separate lava flows with intervening sedimentary rocks including clayey siltstone, sandstone and conglomerate.

Both the Raeburn and McGrath Quarry exposures provide information about the structural form of the basalt and associated rocks and the variable nature of the rock weathering state. Some basalt is hard, grey and relatively less weathered or altered compared to other brown-coloured basalt. Some of the latter basalt is considered to have undergone alteration during the period of vulcanicity and some of the weathered/altered rocks that resemble a basalt flow instead may be tuffaceous or fragmental.

A.4.2 Land uses of the Tertiary basalt resource

Probably less than 20% by area of the surface exposed basalt in the Breadalbane-Western Junction area is contained within Mining Leases. As a whole, the basalt may exceed 70-80 m thickness at places such as Cocked Hat Hill, but more applicable is a general thickness range of 20-40 m that can be estimated from previous mapping of the basalt lower surface at the periphery of the basalt and by using some water bore information. Within the Stornoway and BIS leases the basalt thickness is similarly variable in thickness and may range approximately 10 – 40 m thickness.

Competing land uses in the area include quarry operations and their associated buffer and future resource areas, and various residential, light industrial and rural developments (Figure A-4B). Launceston airport is situated on basalt as too is most of the newly developed industrial estate to the west of the airport.

A.4.3 Strategic Importance of Resource

The basalt resource in the Breadalbane-Western Junction region is of strategic importance to the region – as indicated by the prevalence of Mining Leases in the location and the high volumes that the quarries present can extract per annum. Given the location of the airport and associated industrial estate and sensitive uses (including Heritage Register listed buildings) the opportunity to further exploit the resource beyond the areas already under Mining Leases are very limited.

The location generally has quick and efficient access to many of the major road networks around Launceston (Figure A-5) including three main highways – Bass, Midland and Tasman.

A.5 SURROUNDING LAND USES

Land around the quarry is used for agricultural use (pasture, crops, grazing, vineyards, orchards etc) with scattered rural residential use.

A.5.1 Quarrying activities

The Breadalbane – Western Junction region is home to several other quarry operations (Figure A-3) owing to the high quality geological resource available – Tertiary basalt. The Cocked Hat Hill Quarry will exploit the same basalt resource as other quarries on the basalt plateau shown in Figure A-4B.

Notes and comments are provided, where there is public information available, about the adjoining quarries (McGraths Quarry is discussed under section A1.1.1) below.

• **Stornoway Raeburn Quarry**

Stornoway Quarrying operate the Raeburn quarry on private land owned by Stornoway at Breadalbane in Northern Tasmania. The quarry has been in operation for over twenty-five years and provides a wide selection of construction and building materials.

Stornoway were granted a planning permit by the Northern Midlands Council in 2010 (see Attachment 3) for a level 2 activity with an annual production level of 210,000 cubic metres. Stornoway in their DPEMP of 2010 noted that the area has potential reserves to sustain operations for over 50 years and is a resource which the RPDC have acknowledged as having strategic importance in recent hearings into a proposed residential subdivision in proximity to the quarry.

Stornoway notes in their DPEMP of 2010 (available on the EPA Completed Assessments webpage) –

‘Quarrying will be undertaken in accordance with the Quarry Code of Practice, which has been developed by the Department of Primary Industries Water and Environment (now Department of Environment, Parks, Heritage and Arts - DEPHA) and the quarry industry (Quarry Code of Practice, 1999).

The quarry activities will be like what has happened to date and will involve the following:

- Site preparation (vegetation clearing, topsoil and overburden stockpiling);
- Gravel and unconsolidated basalt removal by dozer and/or;
- Rock drilling and blasting;
- Rock removal using rubber tyred loaders and/or excavators;
- Transport of rock to the portable crushing and screening plant;
- Rock crushing and screening;
- Stockpiling of crushed rock; and
- Transporting of materials to markets.’

Operating hours for the quarry are proposed are as proposed in the Quarry Code;

- 7.00 am to 7.00 pm Monday to Friday, and
- 8.00 am to 4.00 pm on Saturday.

No operations or transportation of products are conducted on Sundays or gazetted public holidays (except maintenance).

These operating hours were included as a permit condition by the EPA.

Entry to, and exit from the Quarry is via the private road from Hobart Road. Stornoway installed an advisory 20km speed limit past the two houses adjoining the private road as well as speed bumps and passing bays.

• **BIS Industrial Logistics**

The Mining Leases 979P/M and 2017P/M (ML application) are used by BIS Industrial Logistics to extract gravel and other basalt derived products. No further publicly available information was found for this quarry.

A.5.2 Launceston Airport

Launceston Airport is located to the south of the Cocked Hat Hill Quarry (Figures A-4B and D-3B).

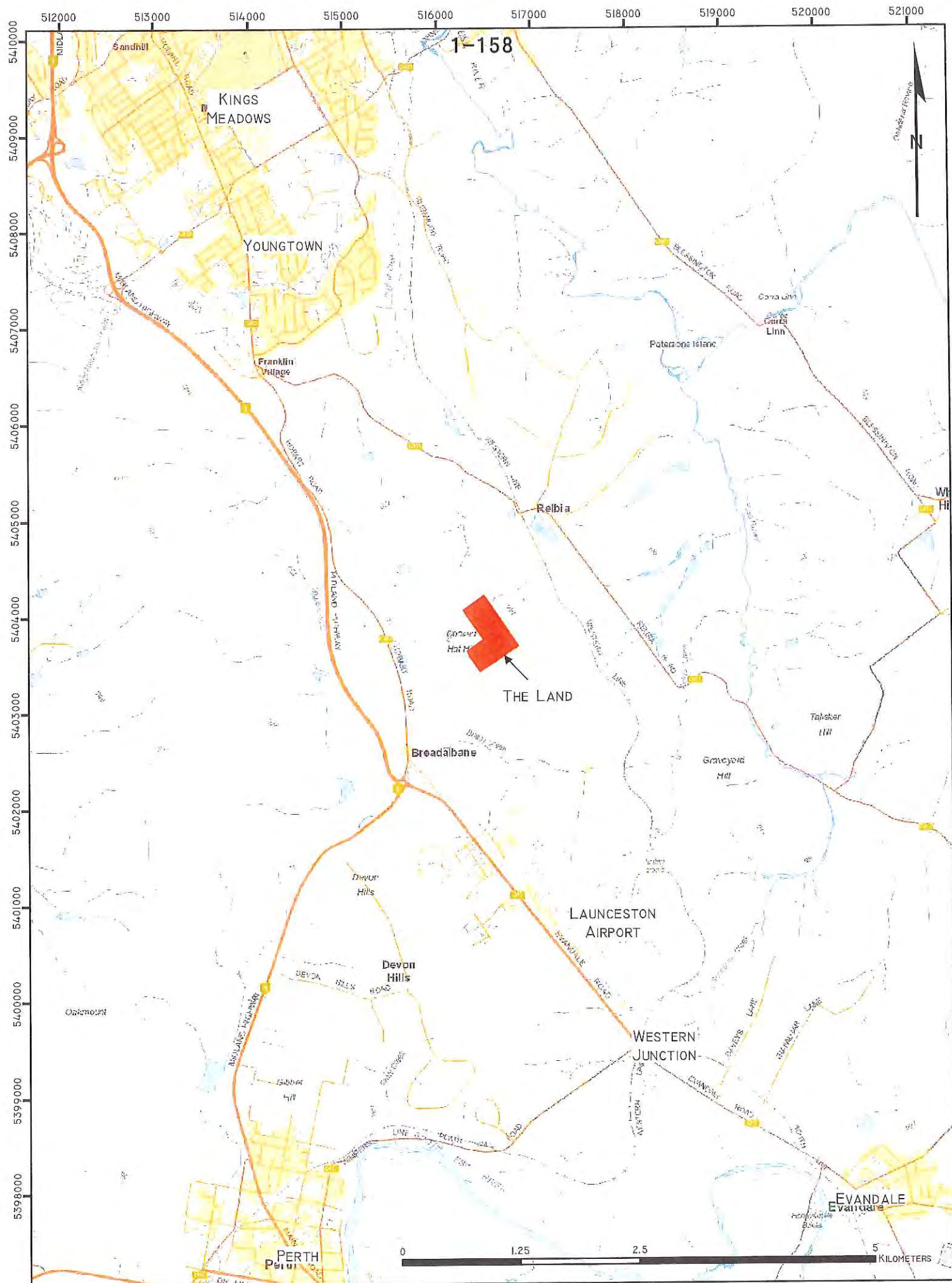
A.5.3 Agricultural use

The landscape supports agricultural uses, predominantly vineyards, to the east of ML1958P/M (Figures A-2A and A-2B). Other agricultural pursuits include grazing (mainly sheep and cattle) with very limited cropping.

A.5.4 Rural residential development

Smaller land titles occur to the west of ML1958P/M, some of which support a residential dwelling and associated development (Figure A-2A).

There is an existing cattery/kennel business at 805 Hobart Road (an application is being prepared to seek approval from the Northern Midlands Council to expand this use and to install a crematorium and residential dwelling).



COCKED HAT HILL QUARRY - BREADALBANE
 DP&EMP
 FIGURE A-1: LOCATION OF THE COCKED HAT HILL
 QUARRY


 an Diemen CONSULTING

Project: NSA Techno 2006

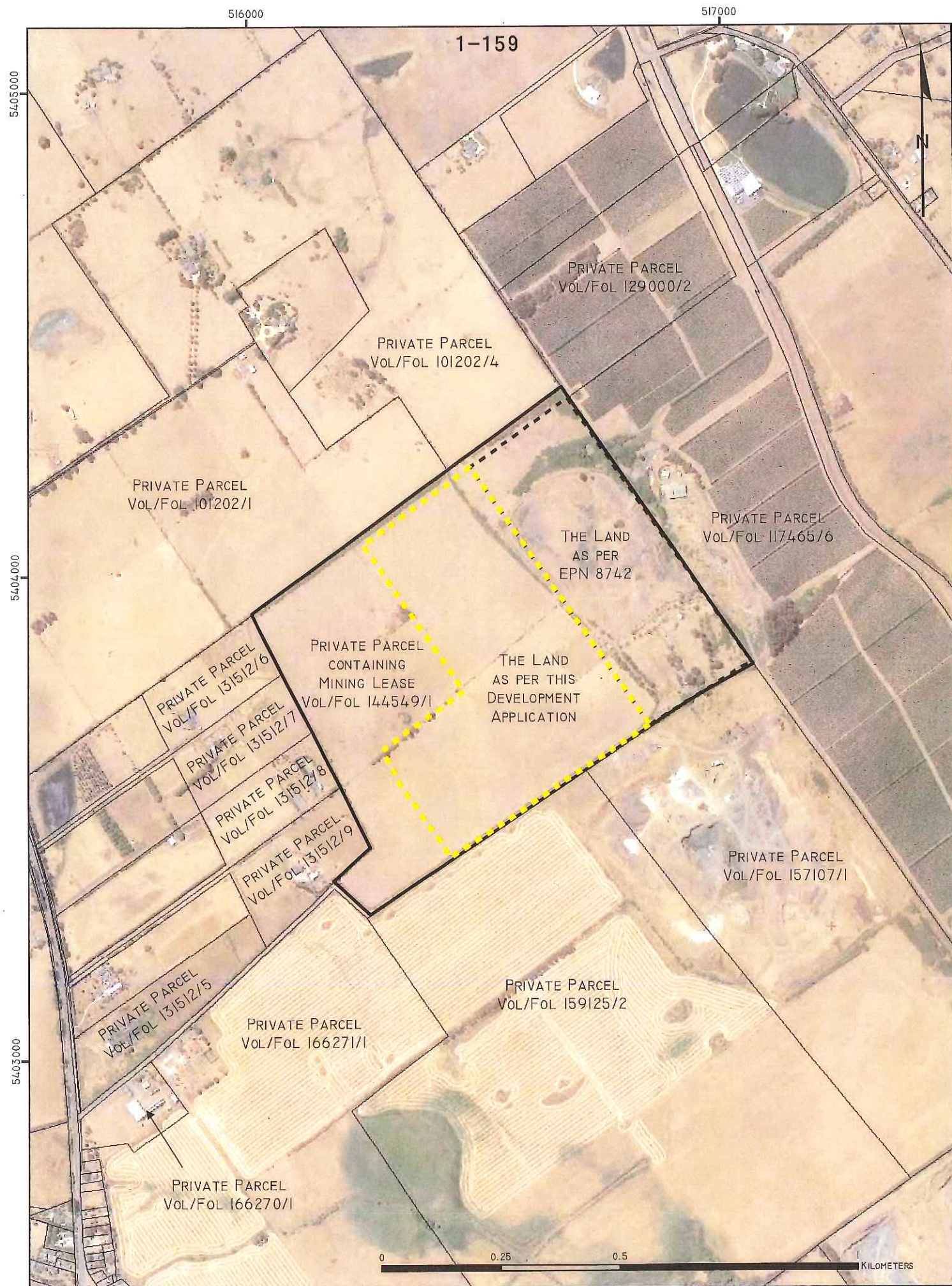
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DATUM: GDA94
 GRID: MGA ZONE 55

TASMART: PROSPECT
 CLIENT: ADAMS GROUP

DATE: 1ST FEBRUARY 2017



COCKED HAT HILL QUARRY - BREADALBANE
DP&EMP
FIGURE A-2A: LAND TITLES AND THE LAND

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PO BOX 1184 TONK 1406

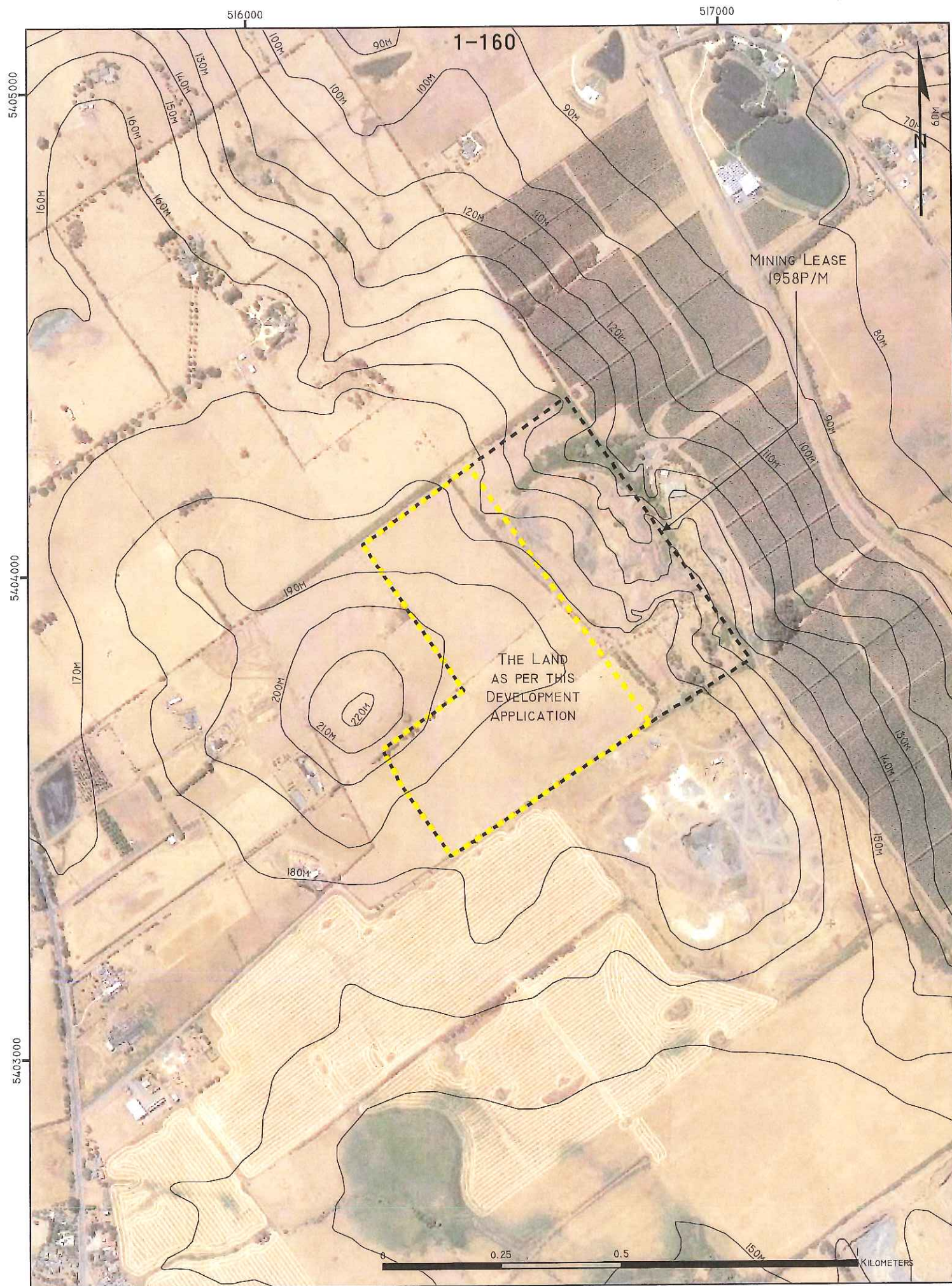
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DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 1ST FEBRUARY 2017



COCKED HAT HILL QUARRY - BREADALBANE
DP&EMP
FIGURE A-2B: TOPOGRAPHY (AHD) AND THE MINING LEASE

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PO BOX 118A TOWN TAS T8061

BASED ON: 1:50,000 TOPOGRAPHIC MAP OF TASMANIA
1:50,000 MAP OF TASMANIA



DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: PROSPECT

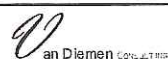
CLIENT: ADAMS GROUP

DATE: 1ST FEBRUARY 2017



COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE A-3: MINING LEASES IN THE REGION (BREADALBANE -
WESTERN JUNCTION)



PO BOX 1156 TOWN 725 TAS

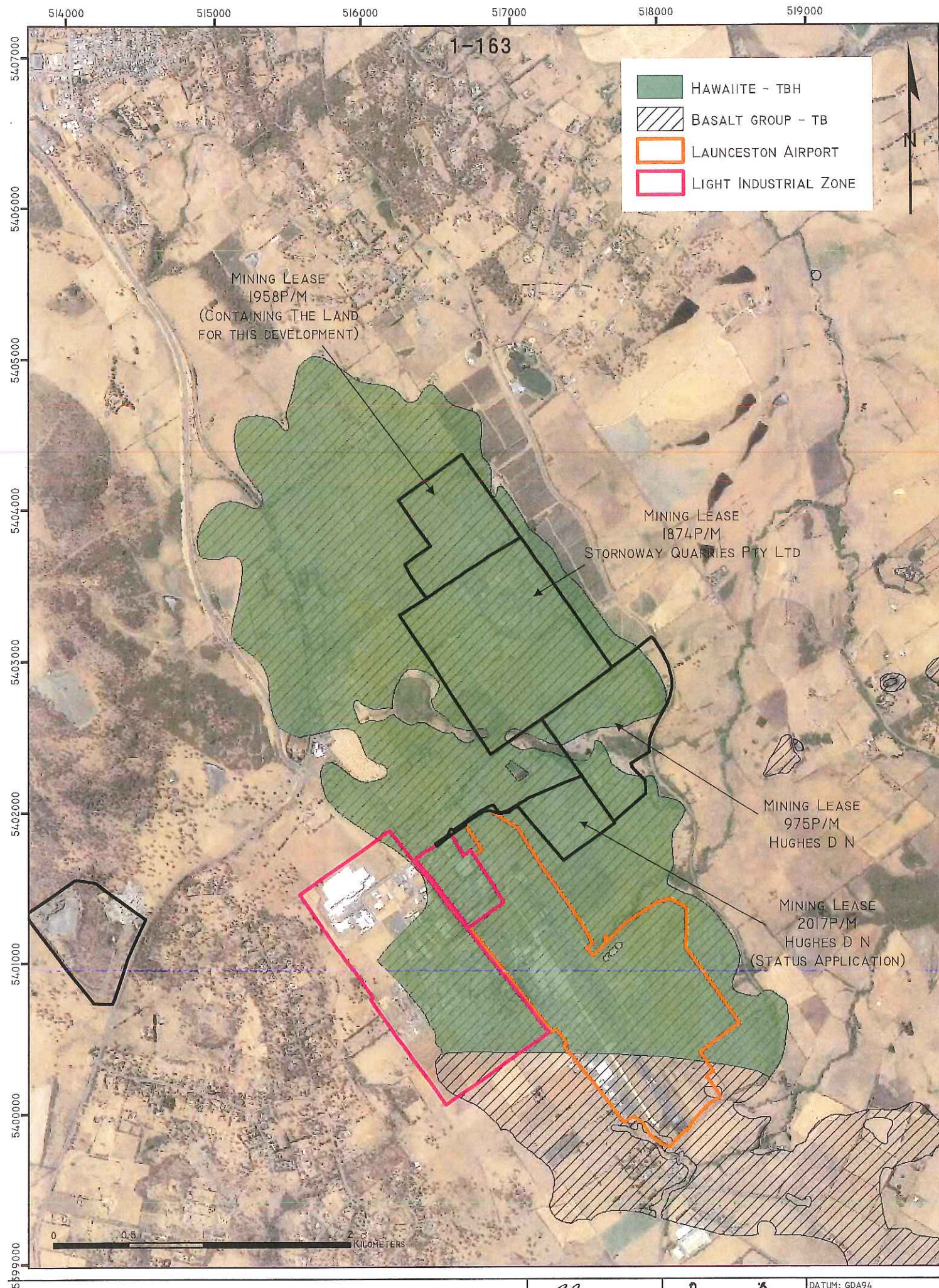
Geographic: TASMAP - STATE OF TASMANY
Scale: 1:50,000



DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 24TH APRIL 2017



COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE A-4B: TERTIARY BASALT AND MINING LEASES AND AIRPORT
AND OTHER EXISTING LAND USES

an Diemen CONSULTING

PO BOX 1154, TROCK 1/2, TAS

Base maps by TASMAR, 1:50,000 Scale, 1:25,000 Scale, 1:10,000 Scale



DATUM: GDA94
GRID: MGA ZONE 55

TASMAR: PROSPECT
CLIENT: ADAMS GROUP

DATE: 24TH APRIL 2017

PART B - PROJECT DESCRIPTION

B.1 DEVELOPMENT OVERVIEW

The Cocked Hat Hill Quarry is located at 833 Hobart Road Breadalbane TAS 7258 in the Northern Midlands municipality (Figures A-1 and C-1).

B.1.1 Volume extracted

The volume to be extracted is up to 200,000 cubic metres per annum, all of which may be crushed/screened to reduce particle size and/or make a uniform particle size product.

The quarry operation includes two activities defined within Schedule 2 of the *Environmental Management and Pollution Control Act 1994 (Tas)* (EMPCA) –

- '5. Extractive Industries. (a) Quarries: the extraction of any rock or gravel and producing 5 000 cubic metres or more of rock or gravel per year' [ie. **Maximum 200,000 cubic metres per annum**]; and
- '6. Materials Handling. (a) Crushing, Grinding or Milling: processing (by crushing, grinding, milling or separating into different sizes by sieving, air elutriation or in any other manner) of ... (ii) rock, ores or minerals at a rate in excess of 1 000 cubic metres per year' [ie. **Maximum 200,000 cubic metres per annum**].

B.1.2 Extraction Methods

The quarrying operation will include the following activities:

- surface site preparation by tree-felling and stockpiling;
- soil removal and stockpiling;
- excavation and ripping of rock and gravel material;
- drilling and blasting by licensed contractor and rock removal by means of an excavator/dozer;
- crushing and screening of rock to reduce material size;
- stockpiling of material (crushed and uncrushed) in quarry area;
- loading trucks with wheel loader from stockpile area in quarry; and the
- transport of materials by truck with/without trailer.

Hard rock will be liberated by blasting. There are likely to be 10-15 blasts per annum to liberate sufficient rock to produce the maximum 200,000 cubic metres of product per annum.

Drilling and blasting will be carried out by qualified contractors in consultation with the proponent to ensure the following:

- drilling will be carried out as specified by a blast contractor;
- all close neighbours will be notified at least 24 hours in advance of blasting activities;
- special notification measures will be developed with the Launceston Airport operator;
- blasting activities will be safe and meet all workplace health and safety requirements and
- blasting will be adequate to achieve rock fragmentation for extraction by excavator and crushing.

The blast fractured rock will be removed using an excavator and loaded into the hopper of a crusher. Crushers have jaws which are adjusted to achieve the desired gravel size. The crushed and screened (using a vibrating screen adjacent to the crushing unit) material will be stockpiled. Stockpiles will be

created within the pit which will be identified with labels (eg sub-base, 40mm gravel). The quarry will operate on a need basis with trucks loaded using a front loader.

B.1.3 Timeframe for development

It is anticipated that extraction will commence in the second quarter of the 2017-18 financial year (i.e. October to December 2017).

The quarry is likely to have a lifespan of at least 60 years if full production levels are achieved every year from the commencement of the activity.

B.1.4 Extraction (Mine) Plan

The extraction plan for the first 10 years of production (at full extraction of 200,000 cubic metres per annum) is shown in Figure B-3A relative to the full maximum extent of the quarry. The layout of the pit (benching) at maximum quarry extent is shown in Figure B-3B which reflects the current Mine Plan approved by Mineral Resources Tasmania when they issued the Mining Lease.

A cross section of the pit at final depth is shown in Figure B-4.

Details of internal haul roads, internal pit sediment basin and location of machinery are not shown as these will not be fixed within the pit. As the quarry is operated and subject to the rate of extraction the haul road may move slightly and machinery re-located within the pit to be close to the haul road or active working face to efficiently access and crush blasted material.

The internal detail of the pit does not materially affect the ongoing potential environmental impacts of the quarry operation except for noise (eg proximity of blasting and haulage to residential dwellings in the landscape) which is addressed in Section E4.

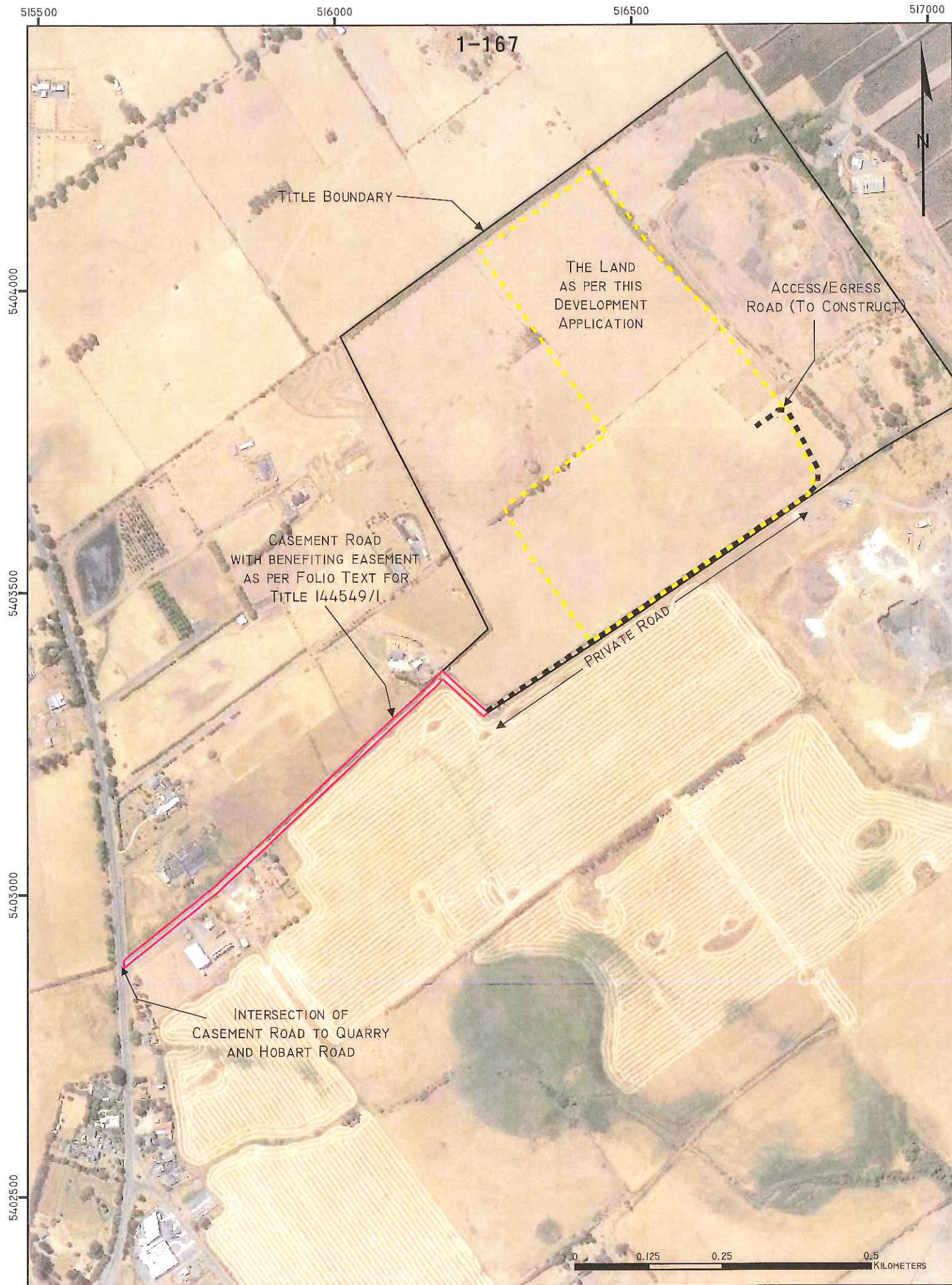
B.2 OPERATING HOURS

Operating hours for the quarry are outlined in Table 1.

Component activities of the extractive industry process have been identified and limited to those times of the day which are unlikely to cause environmental nuisance or harm.

Table 1. Operating hours and times for blasting and crushing within the quarry

Operating Hours	Tasks		
	Drilling and blasting	Crushing and Screening	Haulage (including loading)
0600 to 1900 hrs Monday to Friday 0800 to 1600 hrs on Saturday Closed on Sunday and public holidays (those gazetted Statewide).	0800 and 1700 hrs Monday to Friday Closed on Sunday and public holidays (those gazetted Statewide).	0700 to 1700 hrs Monday to Friday Closed on Sunday and public holidays (those gazetted Statewide).	0700 to 1900 hrs Monday to Friday 0800 to 1600 hrs on Saturday Closed on Sunday and public holidays (those gazetted Statewide).



COCKED HAT HILL QUARRY - DEVELOPMENT APPLICATION

FIGURE B-I: EXISTING/PROPOSED ACCESS TO COCKED HAT HILL QUARRY

Van Diemen CONSULTING

PO BOX 1156 TASMANIA 7506

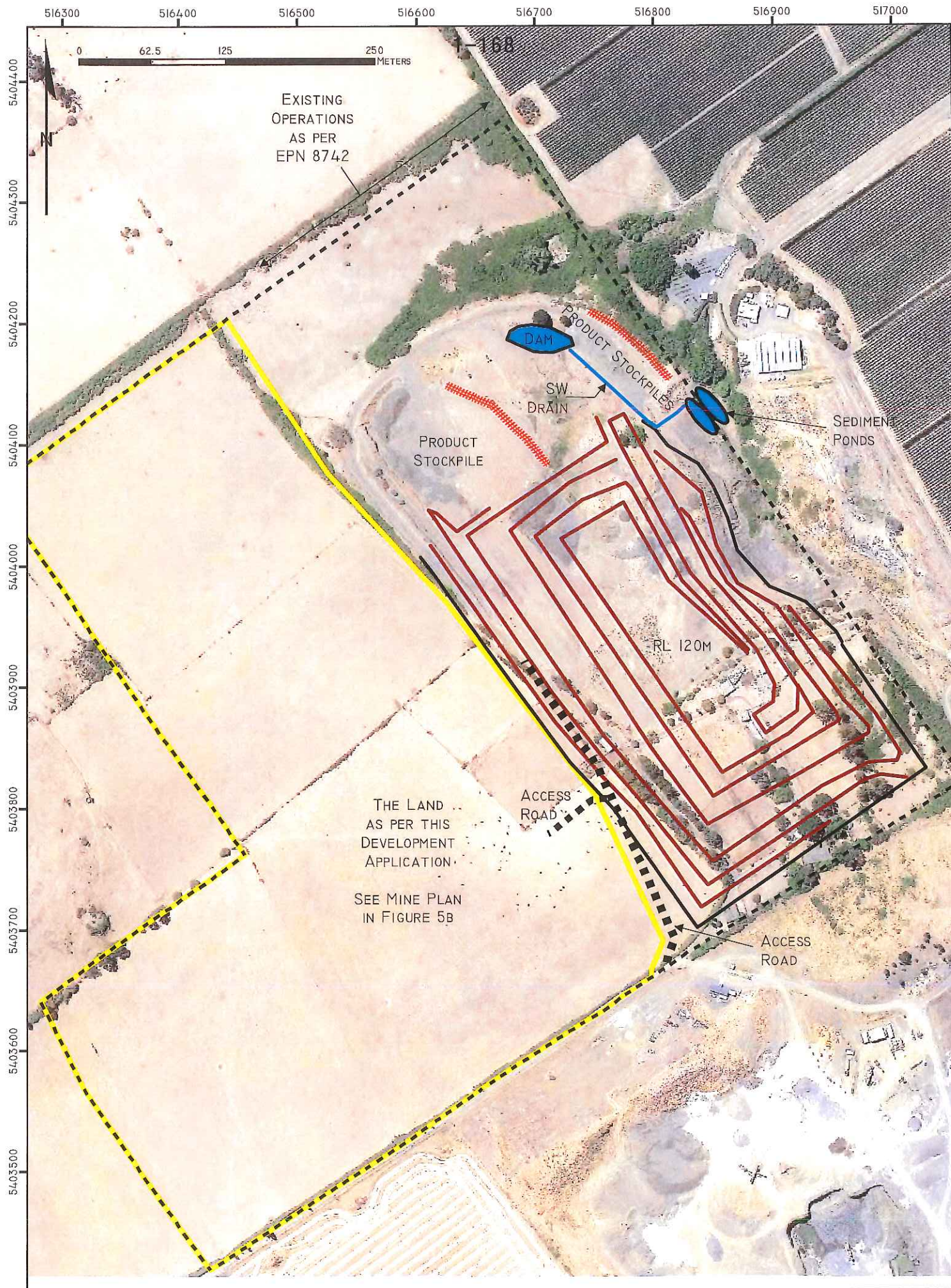
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GRID: MGA ZONE 55

TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 24TH OCTOBER 2016



COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE B-2: PRESENT MINE PLAN FOR McGRATHS
QUARRY AND THE LAND FOR THIS DEVELOPMENT



AC 808 11/06/2016 1/15 7/1/16

BASE MAP BY TASMAR, 1:50,000 SCALE, 1980/81

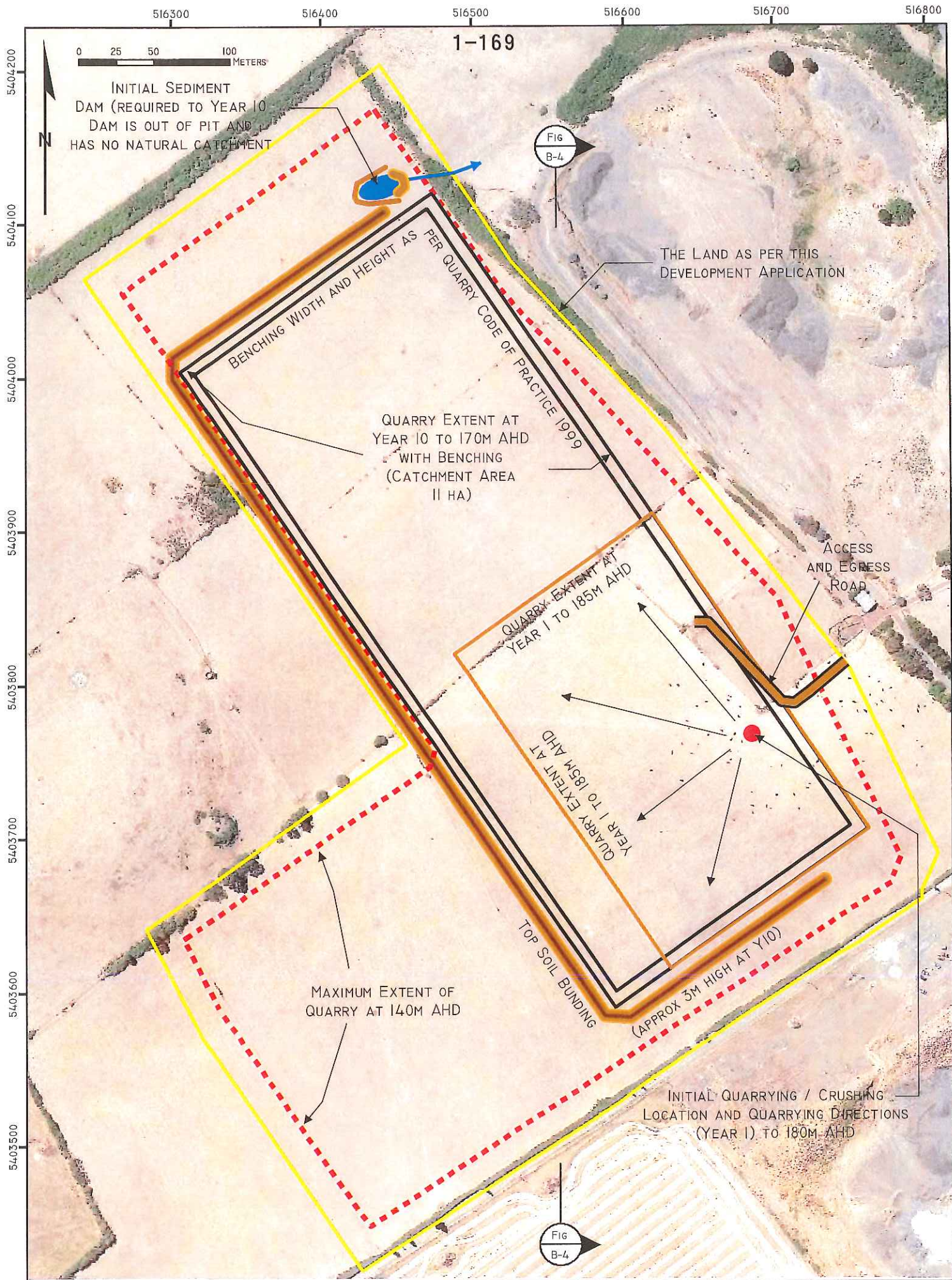


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GRID: MGA ZONE 55

TASMAR: PROSPECT

CLIENT: ADAMS GROUP

DATP: 1ST FEBRUARY 2017



COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE B-3A: MINE PLAN FOR COCKED HAT HILL QUARRY
DEVELOPMENT (TO YEAR 10) AND MAXIMUM QUARRY EXTENT

an Diemen CONSULTING

PROJ. FILE: TSM 145 0002

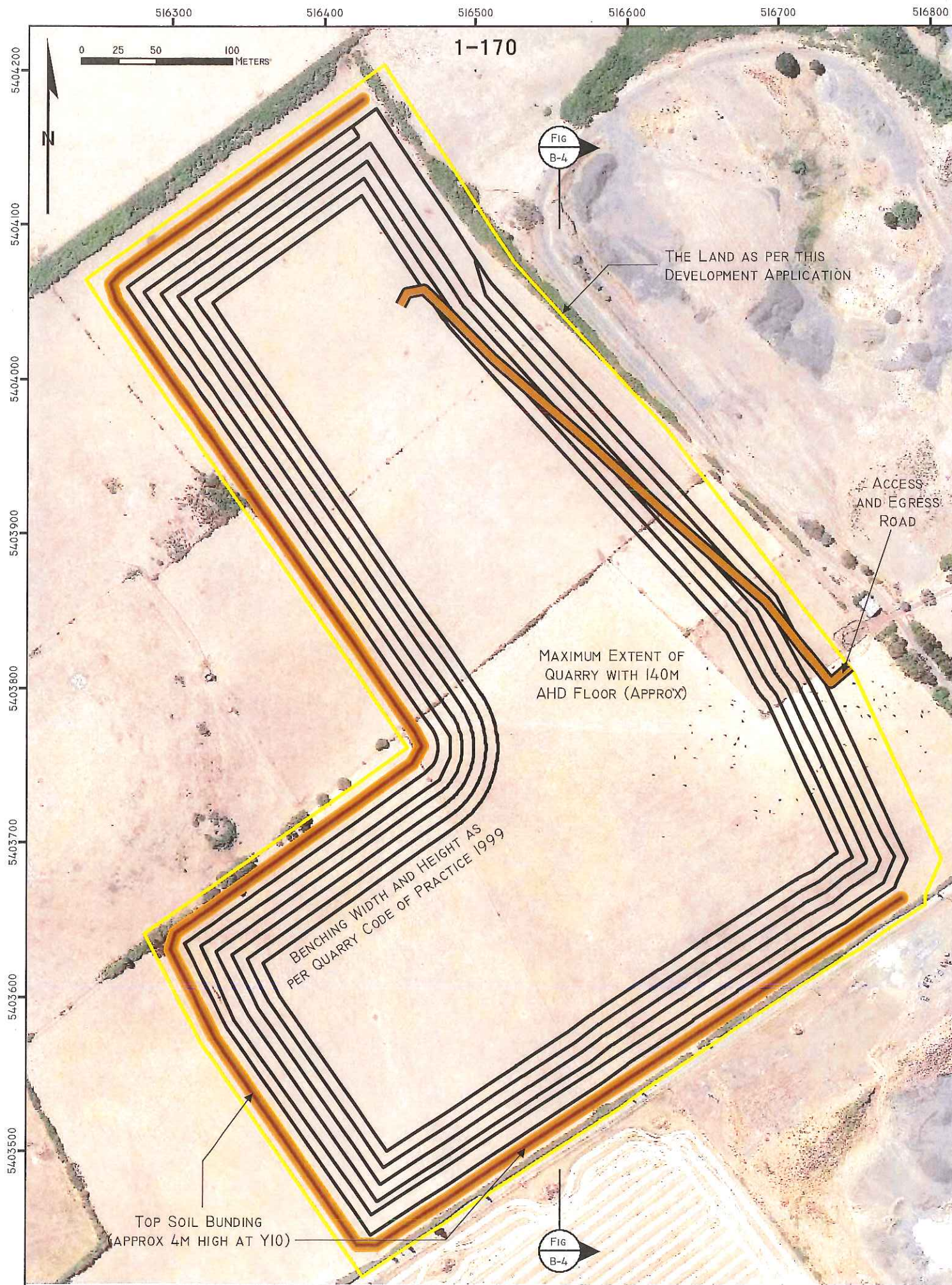
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DATUM: GDA94
GRID: MGA ZONE 55

TASMAR: PROSPECT
CLIENT: ADAMS GROUP

DATE: 1ST FEBRUARY 2017



COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE B-3B: MINE PLAN FOR COCKED HAT HILL QUARRY
DEVELOPMENT AT MAXIMUM QUARRY EXTENT

V
an Diemen Consulting

PO BOX 1154 TONK 7408

BASE DATA BY TACOMAT, 1/2015 OF FURNISHING
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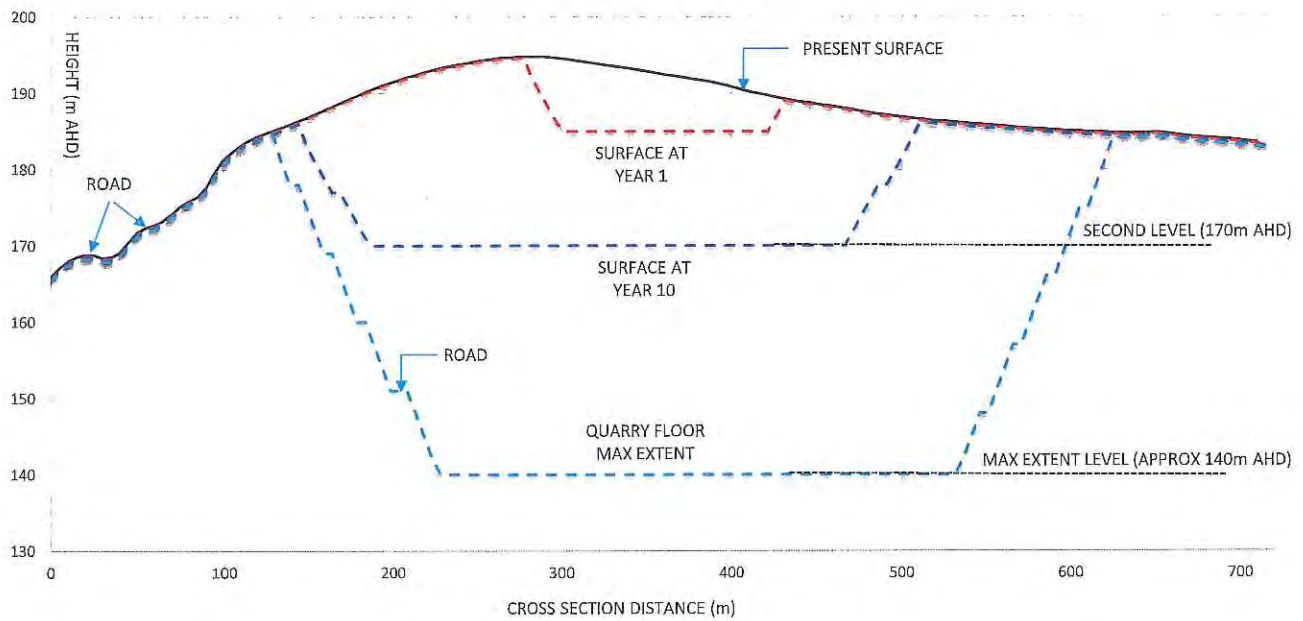


DATUM: GDA94
GRID: MGA ZONE 55

TASMAR: PROSPECT
CLIENT: ADAMS GROUP

DATE: 1ST FEBRUARY 2017

FIGURE B-4: CROSS SECTION OF COCKED HAT HILL QUARRY
(PRESENT TO MAX EXTENT)



B.3 MINING LEASE

A Mining Lease (1958P/M) is in place for the Cocked Hat Hill Quarry (Figure A-2B). The Mining Lease also contains McGrath Quarry.

The Mining Lease permits an area of 19 hectares to be 'open' at any one time.

B.4 QUARRY EQUIPMENT

The equipment likely to be used at some stage (ie not all the below listed equipment would be used concurrently) of the quarry operation is as follows:

Excavators

- Komatsu Pc300-8 (30ton exc)
- Caterpillar 320DL (20 ton exc)
- Komatsu Pc200-8 (20 ton exc)

Crusher equipment

- Powerscreen 1400 chieftan twin deck screen
- Powerscreen metrotrac jaw crusher

Drilling and blasting

- Drill rig
- Light vehicles

Loaders

- Volvo L150E Loader – loadrite scales
- Komatsu WA380 loader – loadrite scales

Bulldozers

- Caterpillar D9R with SU Blade and ripper
- Caterpillar D8R II with SU Blade and ripper

Other

- Trucks for haulage
- 15,000L capacity water cart truck
- Light vehicles for worker transport

B.5 QUARRY ACCESS ROAD – JUNCTION WITH HOBART ROAD

Hobart Road is a main thoroughfare for transport movements for several industries and local vehicular traffic – it is the old Midlands Highway. Material is likely to be transported from the quarry on a demand basis, as occurs for most quarries supplying a hard-rock product.

A **Traffic Impact Assessment** has been prepared for the development application (see Attachment 5).

B.5.1 Access Road

Gravel trucks are proposed to exit the Access Road onto Hobart Road (Figure B-1).

The Access Road is located on private freehold land. Trucks turn left to join the Midlands Highway from Launceston to Hobart some 300m after the junction with Hobart Road. Advisory 20 km speed limit signs (on private land) past two houses adjoining the private road have been installed for the McGraths and Raeburn Quarries in addition to speed bumps and passing bays.

The Access Road is shared with Stornoway which they use to access their Raeburn Quarry operation.

B.5.2 Access Road junction with Hobart Road

Hobart Road is a sealed Council maintained road and connects Breadalbane to the Midlands Highway to the south and Youngtown to the north. Hobart Road is an arterial road that enables quick and easy access through to various locations for product sales (eg Perth, Longford, Western Junction, Deloraine) on major highways (eg Midlands, Tasman and Bass Highways).

B.5.3 Traffic Movements

Traffic movements for 200,000 cubic metre per annum production operation will consist of staff cars at a maximum of 6 per day (12 light vehicle movements) and heavy vehicles consisting of gravel trucks to collect material. Trucks (with or without trailer) will be able to cart about 20m³ (39.5 tonnes) capacity and comply with vehicle safety and regulation standards.

Table 2 outlines *examples* of supplies and the period over which that supply occur. These can be used to approximate/estimate the number of truck movements per supply and per day into the quarry.

Operationally the maximum number of trucks that could service the transportation needs of the quarry is 100 trucks (200 truck movements). This number would be unusual if it were to occur and would be reflective of a very large project that required material within a short period of time.

Table 2. Examples of gravel supplies and associated truck generation

Type of Supply	Size of Supply	Period of Supply and Truck Movements
Campaign	20,000 tonnes using 30 t trucks (667 truckloads)	40 days = 17 trucks/day = 34 truck movements/day
Campaign	80,000 tonnes using 39.5 t trucks (2,025 truckloads)	60 days = 34 trucks/day = 68 truck movements/day

B.6 QUARRY PLANS

B.6.1 Proposed Layout

Infrastructure

A spur road will be constructed from the existing Access Road into McGrath Quarry as this provides the best possible route into the Cocked Hat Hill Quarry (Figure B-2).

Stockpiled product

All material, whether crushed or not, will be stockpiled and stored within the bunded area of the quarry.

Stockpiled soil/overburden

The soil and overburden (if any) will be stored separately in bunds around the quarry to (i) facilitate the reduction in noise emissions beyond the quarry and (ii) to ensure it remains 'clean' for use in future rehabilitation works.

Sediment pond and associated drainage

Sediment will be managed through the installation and operation of a water management system at the quarry. The quarry 'catchment' will peak at 11 hectares when at full maximum extent.

The report prepared by Hydrodynamica (Attachment 6) describes an assessment of potential sediment-laden stormwater runoff from the site and provides indicative sediment basin capacities suitable for a 2 and 11-hectare quarry catchment area. The assessment was conducted using methodology contained in Landcom's Blue Book: *Volume 1 Managing Urban Stormwater- Soils and Construction - 4th Ed* (2004) and *Volume 2E Managing Urban Stormwater- Soils and Construction – Soils and Construction – Mines and Quarries* (2008).

While the quarry is less than 2 hectares in area it is proposed that runoff will be controlled by directing it to a defined but *temporary* basin within the quarry, thus preventing any eroded material from reaching the receiving environment in an uncontrolled manner. This water will then be pumped to a formal sediment basin (see Figure B-3A) for treatment before discharge. Measures will be established in the pit to avoid tracking machinery through the water storage area.

When the quarry area is between 2 hectares and its maximum 11-hectare footprint, it is foreseen that sediment removal will occur via a well-defined sediment basin within the pit itself, with pit-treated water pumped into a sediment basin located outside the bunded area which then discharges to the receiving environment. This provides a double-treatment of water for sediment removal and enables additional fines to be captured and re-used in the activity (eg for blending with the crushed material or for rehabilitation works).

Amenities

No amenities are proposed to be constructed for the quarry as these are available at the adjacent McGrath Quarry.

B.6.2 Topsoil Removal and Management

There is a shallow topsoil (overburden) of about 0.3 - 0.5 m on average across some of the area proposed to be quarried. Stripped topsoil will be stockpiled for re-use in rehabilitation works. The stockpiles and bunds made from the stockpiled soil will be progressively grassed to minimise the risk of weed infestation and wind and water induced erosion of the bare soil.

B.7 BLAST PLANNING

Rock will be liberated by blasting. Drilling and blasting will be carried out by qualified contractors.

Rock extraction areas would be prepared for quarrying by removing and stockpiling the topsoil for later use in progressive rehabilitation works. The contractors will carry out the drilling and blasting operations in consultation with the quarry owner to ensure the following tasks occur:

- drilling is carried out as specified by a blast contractor;
- noise and vibration standards are met and reduced where possible (both drilling and blasting activities);
- all close neighbours are notified at least 24 hours in advance of blasting activities;
- special notification measures will be developed with the Launceston Airport operator;

- blasting activities are safe and meet all workplace health and safety requirements; and
- blasting is adequate for rock fragmentation for extraction by excavator and crushing.

Blast monitoring and modelling at the adjacent McGrath Quarry will be used to guide blasting practices at the Cocked Hat Hill Quarry.

The initial blasts ('establishment' blasts) will be within a dug pit established by –

1. the excavation and stockpiling of topsoil and overburden; and
2. the extraction of in situ gravel/rock material for crushing or direct sale.

The walls (bundling) created by the excavation works can provide the means to deflect air blast over pressure and noise (drilling) upwards and away from the houses to the west. The first 10,000 cubic metres of blast liberated rock material may need to be crushed within the McGrath Quarry to enable enough space to be created for the crusher to fit within the Cocked Hat Hill Quarry pit.

A draft **Blast Management Plan** has been developed for the quarry operation (Attachment 4).

Measures to be applied during the preparation of a blast will include –

Notifications before blast – residents

All residents within a 1 km radius of a blast will be notified prior to that blast. This notification will be given at least 48 hours before such blasting is due to occur, and preferably before 72 hours. If the blast(s) cannot take place at the time specified, or because of blasting misfires, Mt Oriel Breadalbane Pty Ltd or their delegated agent will advise all those residents within 1 km of the quarry of the revised time at which blasting will take place.

Notifications before blast – nearby quarries

The manager/supervisor of the Stornoway Raeburn and Bis Quarries will be notified prior to the blast. Notification will be given at least 48 hours before such blasting is due to occur, and preferably before 72 hours. If the blast(s) cannot take place at the time specified, or because of blasting misfires, Mt Oriel Breadalbane Pty Ltd or their delegated agent will advise of the revised time at which blasting will take place.

Storage and handling of explosives

The transportation, storage and handling of explosives is conducted by the blast contractor in accordance with the Australian Explosives Code (1999), the Australian Code for the transport of explosives by road and rail (Third edition - 2009) and Australian Standard 2187 Explosives – Transport, storage and Use (parts 1 and 2).

Risk assessment and auditing

The blast contractor is responsible for conducting a risk assessment and safety audit of the quarry as part of each blast. This includes the drilling of the holes for explosives, handling explosives, operation of detonation devices and the safe detonation of the charges. Mt Oriel Breadalbane Pty Ltd or their delegated agent will receive a copy of the risk assessment and associated documentation that supports the placement of drill holes, levels of explosives used and the detonation devices.

Noise/vibration blast monitoring program

Measurements of air blast overpressure and peak particle velocity will be carried out by the blast contractor in accordance with the methods set down in *Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration*, Australian and New Zealand Environment Council, September 1990. The noise/vibration test results collected by the blast contractor will be securely held by Mt Oriel Breadalbane Pty Ltd or their delegated agent for 5 years.

from the date of the blast. If the blasting noise limits and/or vibrations as specified in the permit are exceeded, the EPA Director will be notified within 48 hours of the blasting event.

Incident Reporting

The blast contractor is responsible for reporting to Police/Fire any incident that requires their involvement or attendance at the quarry. Mt Oriel Breadalbane Pty Ltd is responsible for reporting any misfires to surrounding relevant landowners: if the blast(s) cannot take place at the time specified, or because of blasting misfires, Mt Oriel Breadalbane Pty Ltd or their delegated agent will advise all those residents within 1 km of the activities on the land of the revised time at which blasting will take place.

B.8 CRUSHING AND SCREENING

Rock will be crushed and screened into various sized particles subject to the end use of the material.

PART C – PLANNING SCHEME INFORMATION

C.1 CATEGORISATION OF USE/DEVELOPMENT

The development and use is consistent with the definition of Extractive Industry in the Scheme –

‘... use of land for extracting or removing material from the ground, other than Resource development, 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.’

C.2 ZONING AND OVERLAYS

A quarry is defined as an *Extractive Industry* in the *Northern Midlands Interim Planning Scheme 2013* which is a Discretionary use within the Rural Resource zone. All land immediately adjoining the land to be quarried is zoned Rural Resource (Figure C-1).

The Land intersects one Overlay – Airports Impact Management Code (Figure C-2).

C.3 DETERMINING THE APPLICATION – PLANNING AUTHORITY

The planning authority has discretion, pursuant to the Scheme, to refuse or permit a use or development if:

- (a) the use is within a use class specified in the applicable Use Table as being a use which is discretionary;
- (b) the use or development complies with each applicable standard but relies upon a performance criterion to do so; or
- (c) it is discretionary under any other provision of the planning scheme, and the use or development is not prohibited under any other provision of the planning scheme.

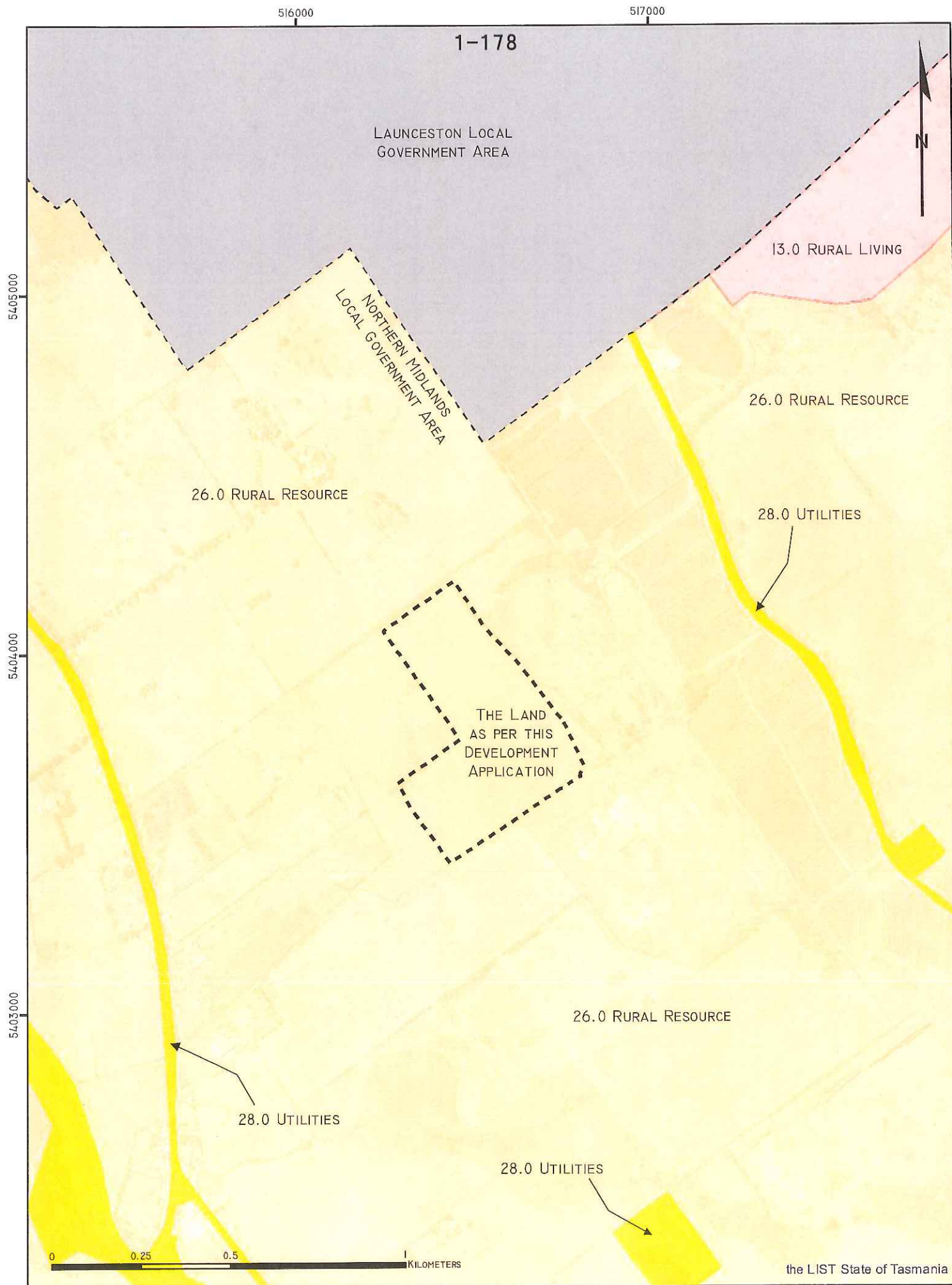
In determining an application for any permit the planning authority must, in addition to the matters required by ss51(2) of the Act, take into consideration:

- (a) all applicable standards and requirements in this planning scheme; and
- (b) any representations received pursuant to and in conformity with ss57(5) of the Act, but in the case of the exercise of discretion, only insofar as each such matter is relevant to the particular discretion being exercised.

In determining an application for a permit for a *discretionary use* the planning authority must, in addition to the matters referred to in subclause 8.10.1 of the Scheme, have regard to:

- (a) the purpose of the applicable zone;
- (b) any relevant local area objective or desired future character statement for the applicable zone;
- (c) the purpose of any applicable code; and
- (d) the purpose of any applicable specific area plan but only insofar as each such purpose is relevant to the particular discretion being exercised.

In determining an application for any permit the planning authority *must not* take into consideration matters referred to in clauses 2.0 and 3.0 of the Scheme.



COCKED HAT HILL QUARRY - BREADALBANE
DP&EMP
FIGURE C-1: ZONE MAP
NORTHERN MIDLANDS INTERIM PLANNING SCHEME 2013

Van Diemen CONSULTING

PO Box 1156 Toroni TAS 7200

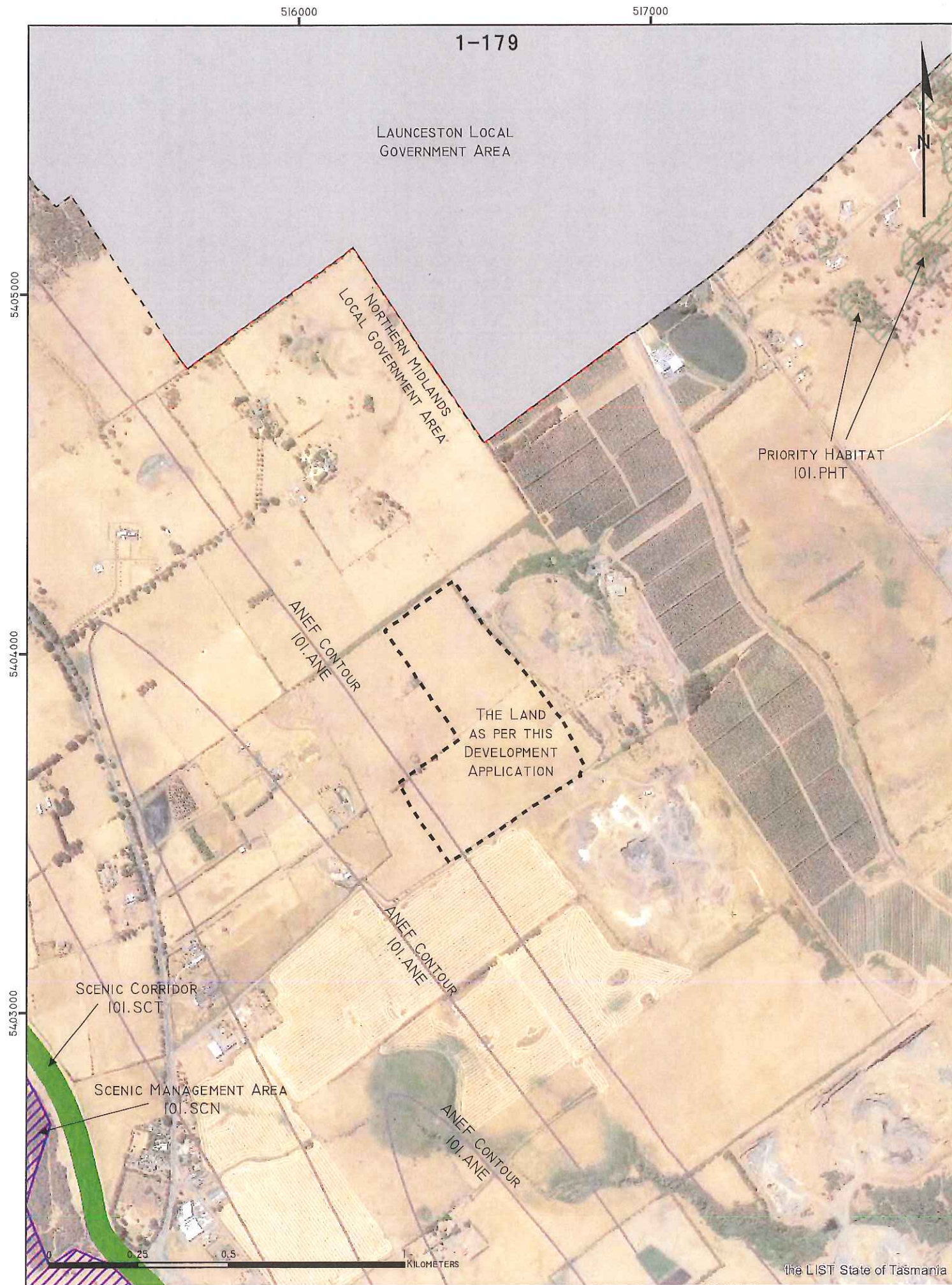
BASE DATA BY 1:250,000 Scale of Tasmania
SPECIALIST CONSULTANTS



DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 18TH APRIL 2017



the LIST State of Tasmania

COCKED HAT HILL QUARRY - BREADALBANE
DP&EMP
FIGURE C-2: OVERLAY MAP
NORTHERN MIDLANDS INTERIM PLANNING SCHEME 2013

an Diemen CONSULTING

PO Box 1156, Taroona, TAS 7093

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C.4 ROLE OF THE ENVIRONMENT PROTECTION AUTHORITY

The proposed quarry operation includes two activities defined within Schedule 2 of the *Environmental Management and Pollution Control Act 1994 (Tas)* (EMPCA) –

- '5. Extractive Industries. (a) Quarries: the extraction of any rock or gravel and producing 5 000 cubic metres or more of rock or gravel per year'; and
- '6. Materials Handling. (a) Crushing, Grinding or Milling: processing (by crushing, grinding, milling or separating into different sizes by sieving, air elutriation or in any other manner) of ... (ii) rock, ores or minerals at a rate in excess of 1 000 cubic metres per year'.

Council is not required to assess any matter addressed by the EPA (s.25 (2) If the Board determines that it needs to assess the activity to which an application relates under this Act then, unless the application is refused under section 57(2) of the *Land Use Planning and Approvals Act 1993* – (f) the planning authority, notwithstanding any enactment to the contrary, is not required to assess any matter addressed in the Board's assessment under paragraph (a)).'

The environmentally-relevant aspects of the activity will be assessed by the Board administering the *Environmental Management and Pollution Control Act 1994* because the development comprises a Level 2 activity pursuant to Schedule 2 of the *Environmental Management and Pollution Control Act 1994*.

The EPA will conduct the assessment in consultation with the planning authority. Accordingly, the environmentally-relevant aspects of the activity are comprehensively described within the assessment documentation (ie this Development Proposal and Environmental Management Plan) requested by the EPA.

C.5 PLANNING ASSESSMENT

A detailed planning report was prepared and lodged with the Council as part of the development application.

The report, available for inspection at Council during the advertising phase of the assessment process, documents aspects of the activity relative to the Scheme.

PART D - PROJECT AREA

D.1 CLIMATE PARAMETERS

Climate related data are from the *Launceston Airport*.

- **Site name:** LAUNCESTON AIRPORT
- **Site number:** 091311
- **Latitude:** 41.55 °S **Longitude:** 147.21 °E
- **Elevation:** 167 m

Wind roses are from the *Launceston Airport Comparison* site which closed in 2009.

- **Site name:** LAUNCESTON AIRPORT COMPARISON
- **Site number:** 091104
- **Latitude:** 41.54 °S **Longitude:** 147.20 °E
- **Elevation:** 166 m

The proposed Cocked hat Hill Quarry occurs in a region with cool winters and warm summers (Graph 1), typical of the Northern Midlands region of Tasmania. Frosts are frequent in the late autumn and winter months. Rainfall occurs throughout the year but is at its lowest in the summer months (Graph 2).

Winds are predominantly north to north-westerly. Winds during summer are typically strong from the north-west and with weak south to south-easterly winds associated with sea breezes. Autumn and winter weather patterns generally bring strong westerly winds. The quarry location is largely protected from westerly winds by the ridge associated with Cocked Hat Hill (see topography in Figure A-2B) but can experience strong winds when winds are directed from the north and north-west.

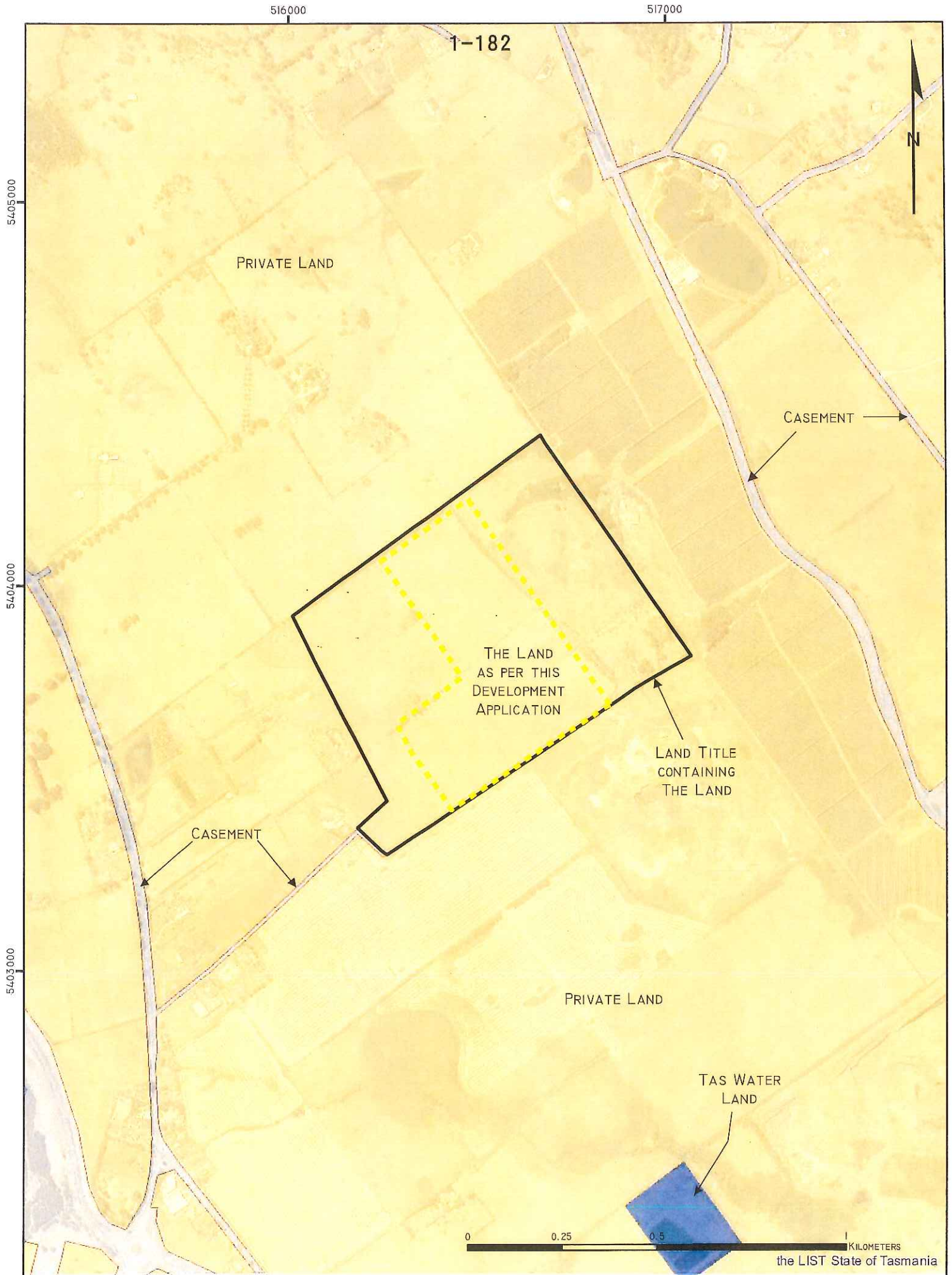
D.2 LAND TENURE

The Mining Lease is located on private freehold land on CT's– 144549/1 (Figures A-2A and D-1).

All adjacent land is private freehold except for the road network (eg Hobart Road) which is owned by the Council or the Department of State Growth.

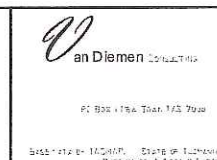
D.3 ROAD NETWORK

Trucks are proposed to exit the Access Road onto Hobart Road (Figure D-2). The Access Road is located on private freehold land. The location of the quarry has quick and efficient access to many of the major road networks around Launceston (Figure D-2) including three main highways – Bass, Midland and Tasman.



COCKED HAT HILL QUARRY - BREADALBANE
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FIGURE D-I: LAND TENURE CLASSIFICATION

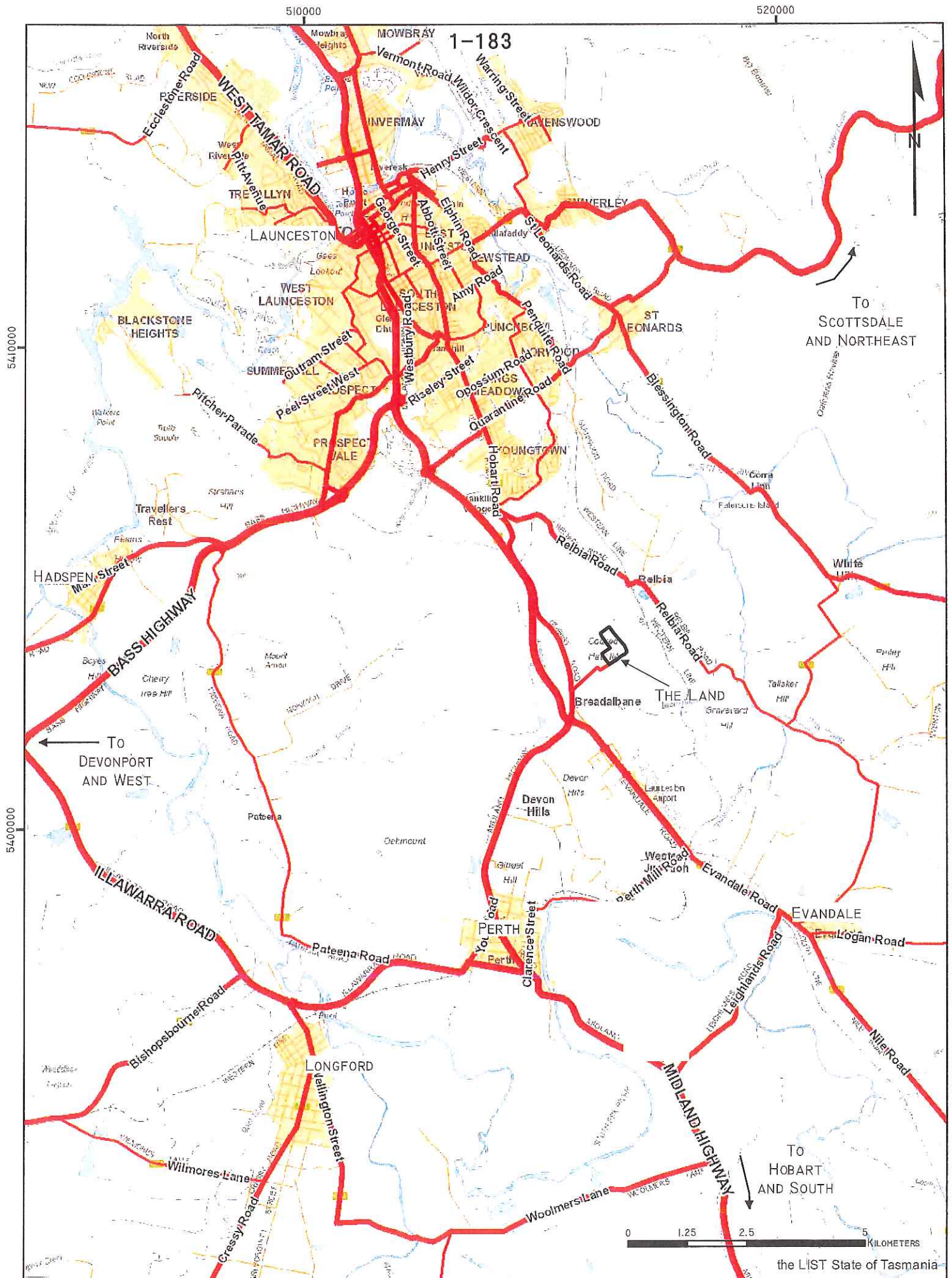


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DATE: 18TH APRIL 2017



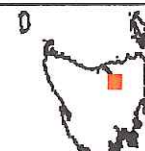
COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE D-2: SURROUNDING ROAD NETWORK

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60-000 11000 12000 13000 14000 15000

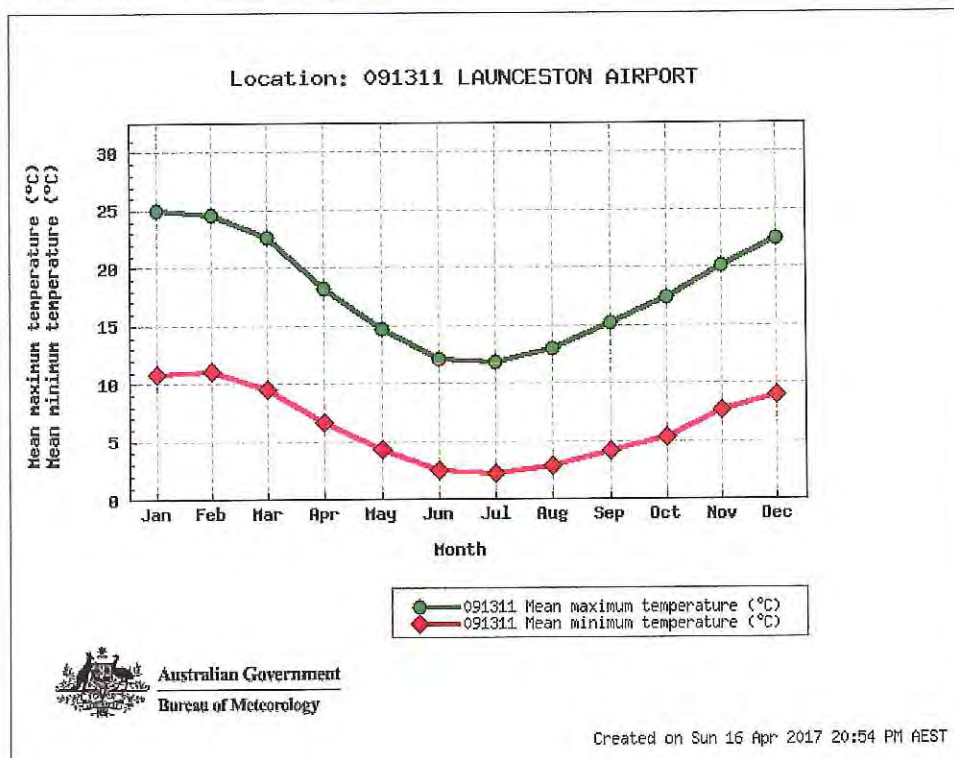
DATE: 21/04/2017



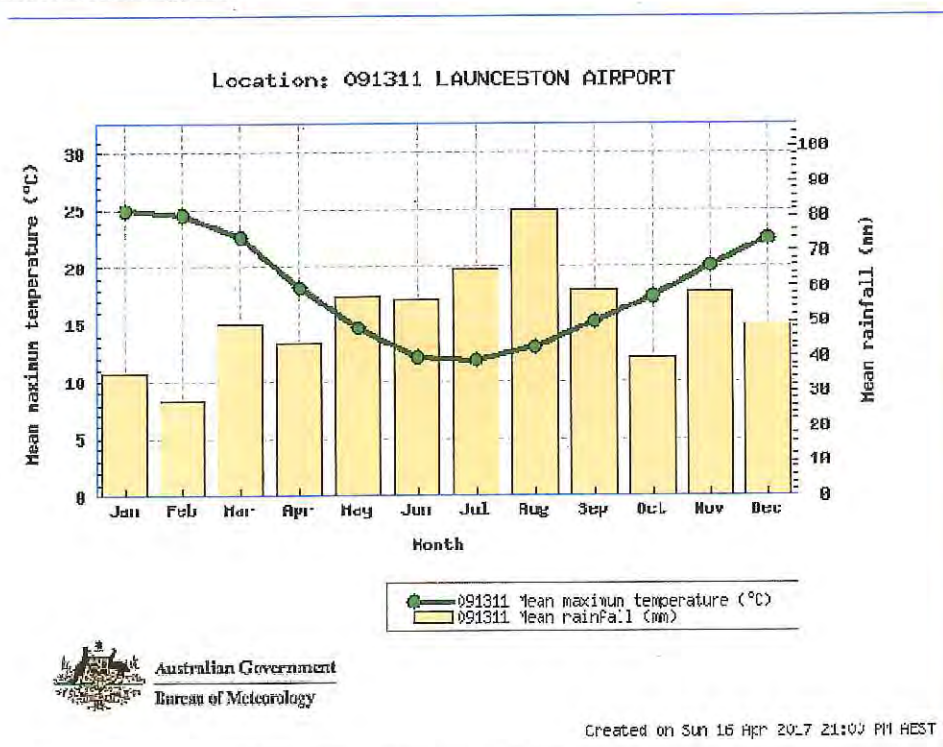
DATUM: GDA94
GRID: MGA ZONE 55

TASMAR: PROSPECT
CLIENT: ADAMS GROUP

DATE: 21/04/2017

Graph 1. Mean maximum and minimum temperature for the Launceston Airport station 091311Source – Bureau of Meteorology (www.bom.gov.au) – 2017**Graph 2. Mean maximum temperature and annual rainfall for the Launceston Airport station 091311**

Source: Bureau of Meteorology 2017



Rose of Wind direction versus Wind speed in km/h (01 Apr 1939 to 17 Jun 2009)

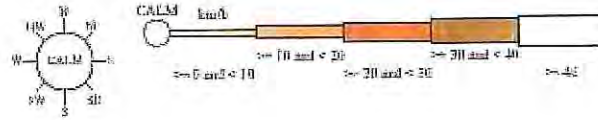
Custom times selected, refer to attached note for details

LAUNCESTON AIRPORT COMPARISON

Site No: 991104 • Opened Jan 1931 • Closed Jun 2005 • Latitude: -41.8357° • Longitude: 147.2033° • Elevation 166m

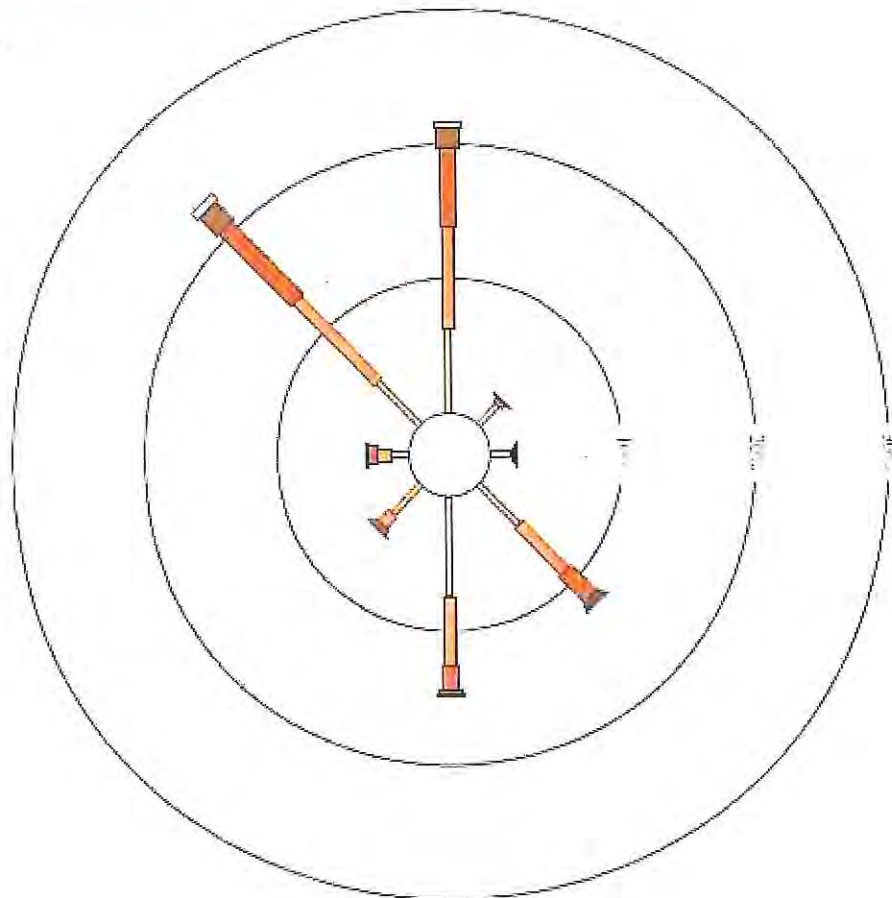
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



9 301
24608 Total Observations

Calm 15%



Rose of Wind direction versus Wind speed in km/h (01 Apr 1939 to 17 Jun 2009)

Custom times selected, refer to attached note for details

LAUNCESTON AIRPORT COMPARISON

Site No: 091104 • Opened Jan 1931 • Closed Jun 2009 • Latitude: -41.5397° • Longitude: 147.2033° • Elevation 166m

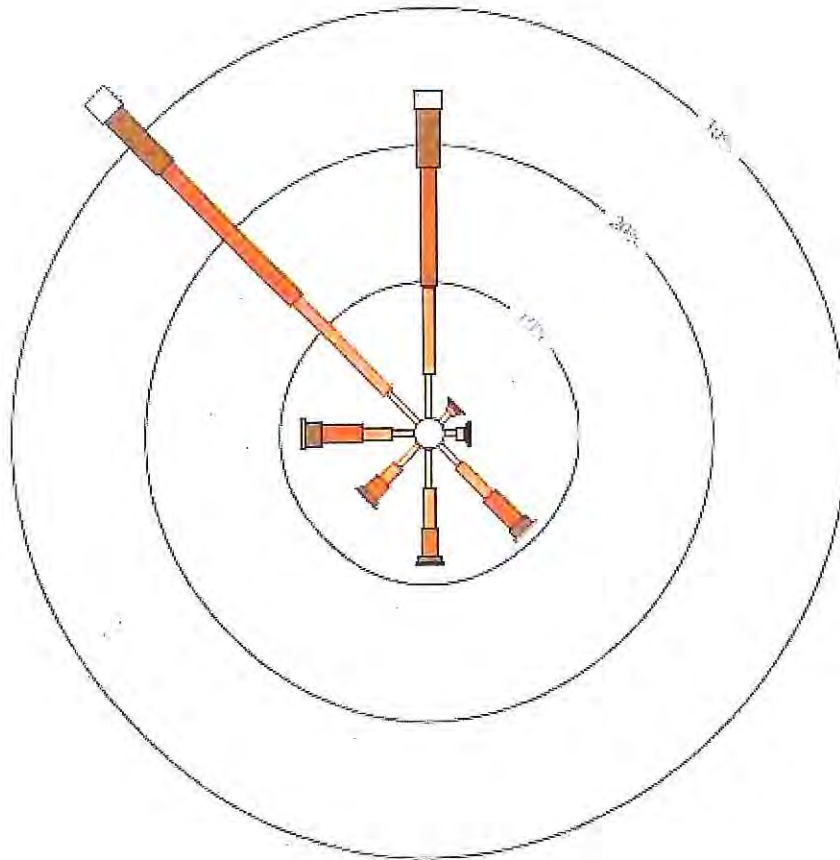
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



3 pm
24586 Total Observations

Calm 6%

**D.4 SURROUNDING LAND USE****D.4.1 Residential dwellings**

The location of residential dwellings in the landscape around the quarry is shown in Figure D-3A.

No dwellings occur within the area to be quarried.

Attenuation assessment distances for the quarry activity follow those of the *Quarry Code of Practice 1999* (QCP) and as provided by the EPA in their guidelines for assessment (see Attachment 1):

“It is suggested that planning authorities and operators seek to maintain the following separation distances, measured from the planned maximum extent of the quarry operations to any sensitive use:

- Where regular blasting takes place, 1,000 m;
- Where material is crushed only, 750 m;
- Where vibrating screens alone are utilised, 500 m; and
- Where no blasting, crushing or screening occurs, 300 m”

and

“2. Ground vibration and air-blast Overpressure

- Prediction of blast peak particle velocity at residences within 1.2 km.
- Prediction of air-blast overpressure at residences within 1.2 km.”

Figure D-3A identifies dwellings around the Cocked hat Hill Quarry (identified as the Land in Figure D-3A), with the 1km extent specifically illustrated. Most dwellings are associated with small allotments to the west of the quarry. These are generally exposed to noise from Hobart Road and the Midland Highway, as well as from air traffic associated with the Launceston Airport.

Launceston Airport is located to the south of the Cocked Hat Hill Quarry (Figure D-3B).

D.5 GEOLOGY AND LAND CAPABILITY

The bedrock geology of the Mining Lease is Tertiary basalt (Figure D-4). The soils are shallow and are a thin clay-loam. Land capability is recorded by DPIPWE as Categories 4 and 5 (Figure D-5). The area of the Development (area within which works will occur – ie extraction) does not intersect with any Landslide Hazard Planning Bands (see Figure D-6) in the area.

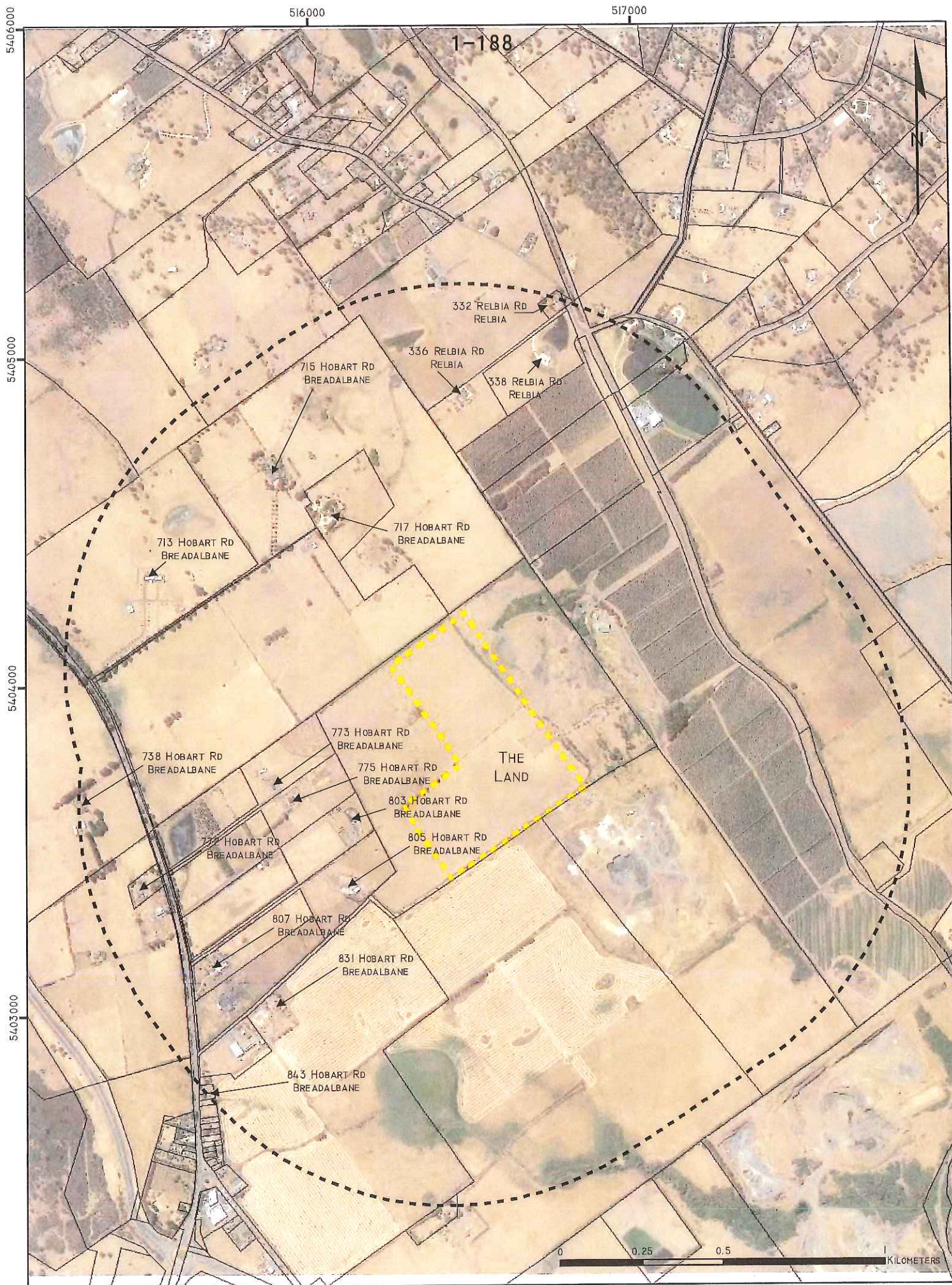
D.6 WATERCOURSES AND DRAINAGE

Cocked Hat Hill drains water (surface) in several directions as shown in Figure D-7A.

Water draining westwards to Jingles Creek will be largely unaffected by the modified drainage caused by the Development of the Cocked Hat Hill Quarry. The creek systems that would be altered are Briarly Creek (would receive less water, but it flows into Kelly Creek and then into Rose Rivulet but upstream of the drainage line that flows from the Josef Chromy vineyard dams) and Rose Rivulet (would receive less water in its upstream section but no less or more water overall). Notwithstanding this drainage alteration, all water that drains (surface) from Cocked Hat Hill and the area for the Development ultimately reports to the North Esk River.

At maximum extent, there will be approximately 11 hectares of additional ‘catchment’ in the creek system that drains eastwards where it reports to a series of dams on the Josef Chromy vineyard property (Figure D-7B). Drainage from the McGrath Quarry also reports to the same series of dams.

The receiving environment is highly modified, being agricultural lands with remnant native vegetation in paddocks and along some sections of watercourses. Watercourses are generally cleared of native vegetation or when present it is highly modified through weed infestation (mainly gorse and willows) or livestock grazing.



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FIGURE D-3A: RESIDENCES WITHIN 1 KM OF THE COCKED HAT HILL QUARRY

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SCALE: 1:5000
DATE: 24TH APRIL 2017

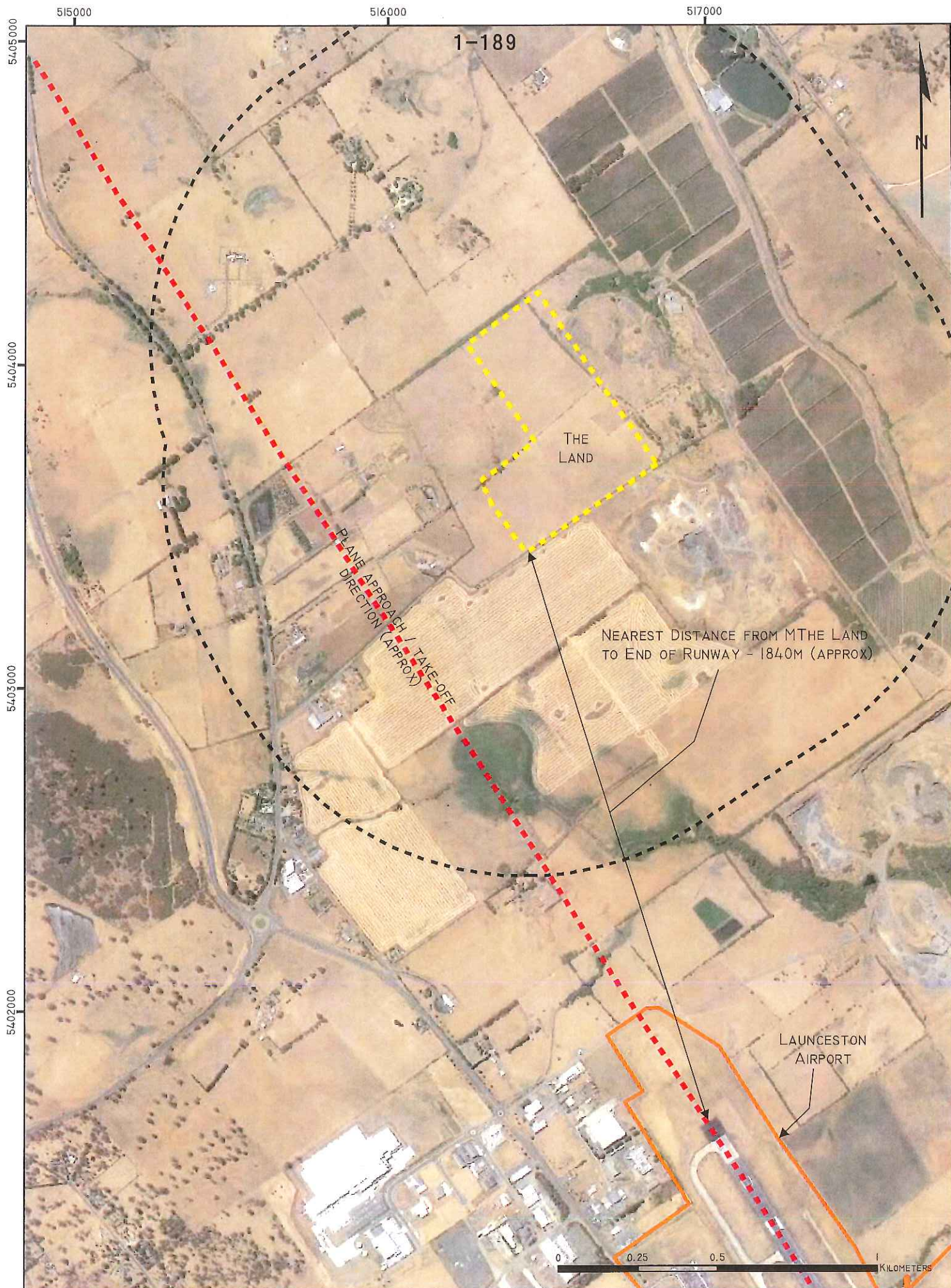


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COCKED HAT HILL QUARRY - BREADALBANE
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FIGURE D-3B: AIRPORT LAND AND FLIGHT PATHS (APPROX)



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DATE: 21TH APRIL 2017



COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE D-4: GEOLOGICAL BEDROCK (MRT - SCALE 1: 25,000)
WITHIN AND AROUND MINING LEASES

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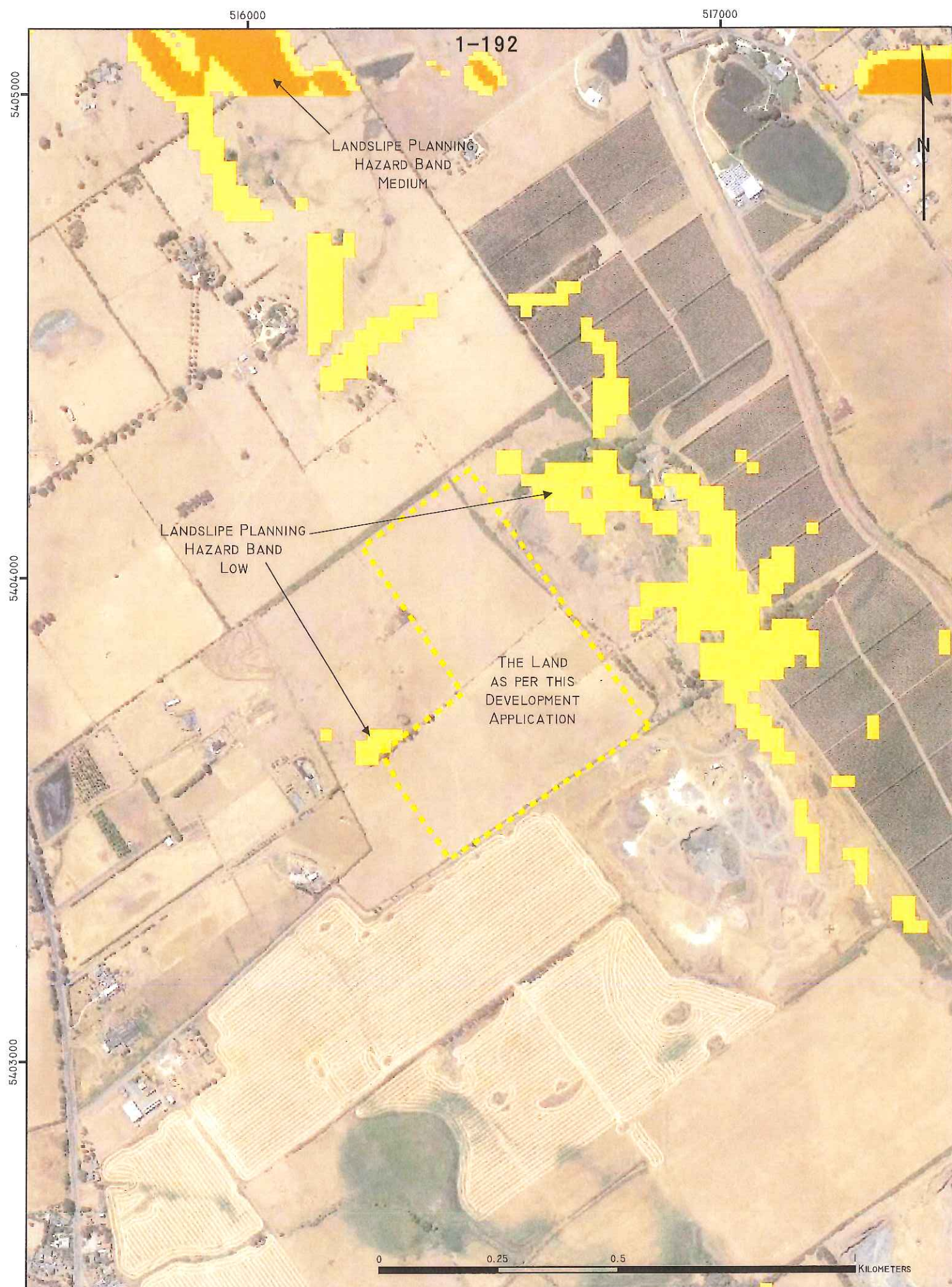
BASE DATA BY TASMAR, © DATA BY TASMAR
BREADALBANE & TOWN 145 7000



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COCKED HAT HILL QUARRY - BREADALBANE
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FIGURE D-6: LANDSLIDE PLANNING HAZARD BANDS

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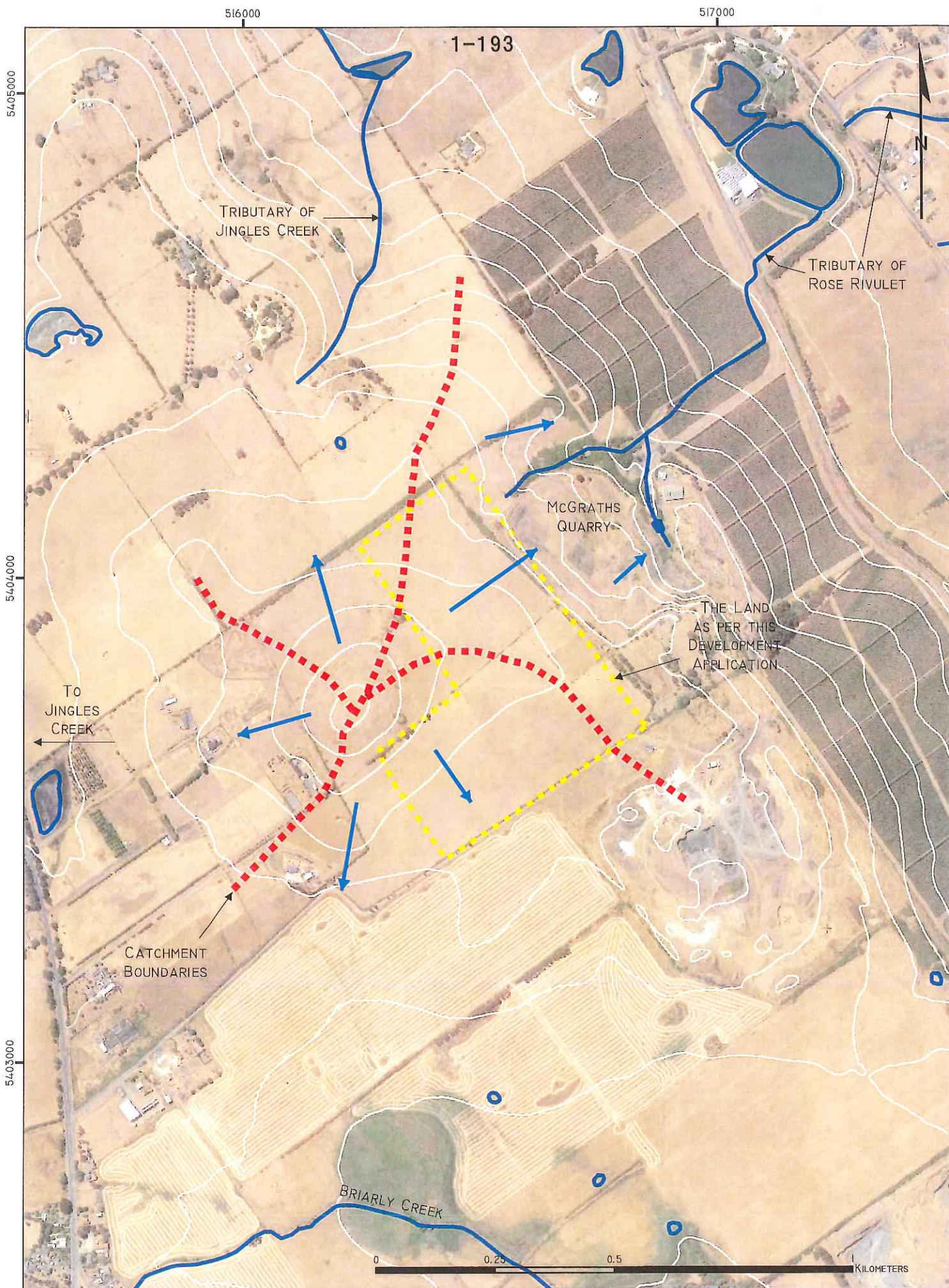
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DATE: 24TH MARCH 2017



COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE D-7A: EXISTING REGIONAL DRAINAGE LINES
AND CATCHMENTS

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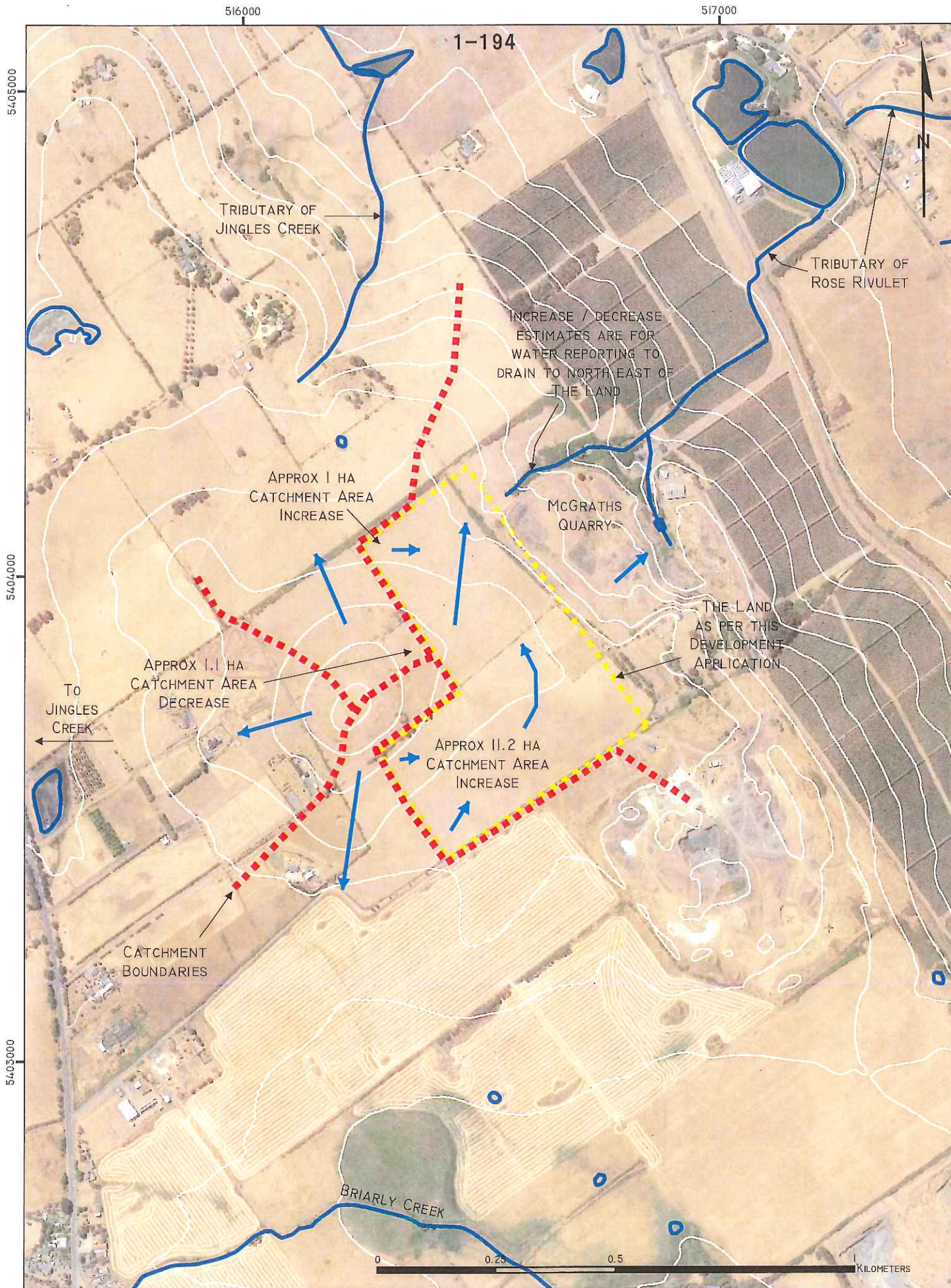
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COCKED HAT HILL QUARRY - BREADALBANE
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FIGURE D-7B: PROPOSED REGIONAL DRAINAGE LINES
AND CATCHMENTS

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D.7 BIODIVERSITY

Field surveys were conducted in October 2016 and December 2016 to identify and document the biodiversity values on the Land. The surveys were conducted by Drs Richard Barnes and Colin McCoull. The small size of the survey area (the Land) meant that it could be easily and quickly assessed in detail for the occurrence of natural values, including threatened flora species and habitat for fauna species.

The following tasks were conducted for flora and fauna values assessment:

1. A review of flora and fauna values recorded previously in the area within and adjacent to the Land.
2. The potential for the occurrence of threatened fauna species listed under the TSP Act and the EPBC Act on the Land was evaluated using the -
 - a. EPBC Protected Matters Search Tool, and
 - b. DPIWE Natural Values Atlas database.
3. Field surveys were undertaken to investigate and verify the potential fauna and flora issues identified in the desktop assessment. The field survey included:
 - a. The ground-truthing and mapping of vegetation communities on the Land;
 - b. A survey of terrestrial and riparian flowering annual and perennial plants and aquatic flora, including potential habitat for conservation significant species;
 - c. Habitat assessment for threatened raptor and mammal species; and
 - d. The identification and mapping of declared weeds listed on the schedules of the *Weed Management Act 1999* within and near the Survey Area.

D.7.1 Vegetation Communities

The vegetation on the Land is classified as Agricultural land (FAG) with occasional weed infestations (mainly briar rose (*Rosa rubiginosa*)) and shelterbelt vegetation (sloe plum and/or hawthorn) (see Figure D-8). Plate 1 contains images that illustrate the nature of the vegetation present within the Land to be quarried by the Cocked Hat Hill Quarry development.

No native vegetation communities listed on Schedule 3A (Threatened native vegetation communities) of the *Nature Conservation Act 2002* or ecological communities listed under section 181 of the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* occur on the Land.

D.7.2 Threatened Flora Species

The vegetation on the Land is classified as Agricultural land (FAG) with occasional weed infestations (mainly briar rose (*Rosa rubiginosa*)) and shelterbelt vegetation (sloe plum and/or hawthorn) (see Figure D-8).

Agricultural landscapes can support threatened flora in the northern region surrounding Launceston as some are reliant on disturbance – however most threatened flora species known from the region cannot survive in pasture or persist with some land management practices (eg fertiliser application, ploughing and cropping regimes). The agricultural land in the survey area is actively managed for crop and pasture growth (including fertiliser application) and is grazed by cattle. The well managed agricultural landscape provides little to no opportunities for native species to establish and grow.

No flora species listed on the *Tasmanian Threatened Species Protection Act 1995* or the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* were observed on the Land.

Plate 1. Vegetation present on the Land

Agricultural land dominates the area to be quarried by the Cocked Hat Hill Quarry development.

Briar rose and other pasture weeds are most prevalent along fencelines.



Agricultural land dominates the area to be quarried by the Cocked Hat Hill Quarry development.

The land has been used for agricultural uses, mainly grazing.



View from the eastern side of Cocked Hat Hill showing the agricultural land in the 'northern' area to be quarried by the Cocked Hat Hill Quarry development.

The land has been used for agricultural uses, mainly grazing.



D.7.3 Declared and Environmental Weeds

Three plant species listed as a Declared Weed on the Tasmanian *Weed Management Act 1999* or as a Weed of National Significance on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* were recorded on the Land -

- blackberry (*Rubus fruticosus*);
- Californian thistle (*Cirsium arvense*); and
- slender thistle (*Carduus pycnocephalus*).

Other pasture and environmental weeds were also recorded sporadically across the Land, often in association with cattle 'camps' and fencelines –

- spear thistle (*Cirsium vulgare*);
- variegated thistle (*Silybum marianum*); and
- briar rose (*Rosa rubiginosa*).

D.7.5 Threatened Fauna Species

There are only 3 conservation significant fauna species recorded in the NVA that occur *near* the Land (Figure D-10) –

- Tasmanian devil (*Sarcophilus harrisii*) – low quality foraging habitat is present, no dens or potential dens observed – the area is grazed and ploughed farmland;
- Eastern barred bandicoot (*Perameles gunnii gunnii*) – low to moderate quality foraging and nesting habitat – the area is grazed and ploughed which limits the potential for rank grasses to form which may be used as nests, there are no large patches of gorse present which may also provide nesting habitat; and
- Tasmanian wedge-tailed eagle (*Aquila audax fleayi*) – very low-quality foraging habitat only, there is no 'nest potential' habitat.

D.8 EUROPEAN HERITAGE

There are several heritage listed buildings and other features within the Western Junction – Breadalbane region. The following Tasmanian Heritage Register (THR) sites, or parts of the listed sites, located near the Development are below –

- THR 4888 Wool Pack Inn, 854 Hobart Road, Breadalbane, 7258, TAS
- THR 4889 Rathmolyn, 16662 Midland Highway, Breadalbane, 7258, TAS
- THR 5050 Strathroy, 17115 Midland Highway, Breadalbane, 7212, TAS
- THR 4387 Strathroy Bridge, Kerry Lodge, Probation Station, Convict Quarries and Roads
- THR 11063 Evandale to Launceston Water Scheme

Figure D-11 illustrates the locations listed above as well as others that are further away (eg Magpie Hill, formerly Greycliffe).

The THR database accessible via TheLIST provides an incorrect location for the convict quarry associated with the Strathroy Bridge – Kelly Lodge and Probation Station feature. CPR 10256 (the legal instrument which spatially identifies the location of Strathroy Bridge, Kerry Lodge, Probation Station, Convict Quarries and Roads) which is spatially overlain in Figure D-11 identifies Lot 5 as the convict quarry whereas TheLIST has it 'located' to the north-east of the CPR location. We have adopted the location of the CPR document as this is the legal document for the heritage listing. While the quarry is within 900 m of the maximum quarry extent of the proposed Cocked hat Hill Quarry it is not sensitive to blast (vibration) impacts.

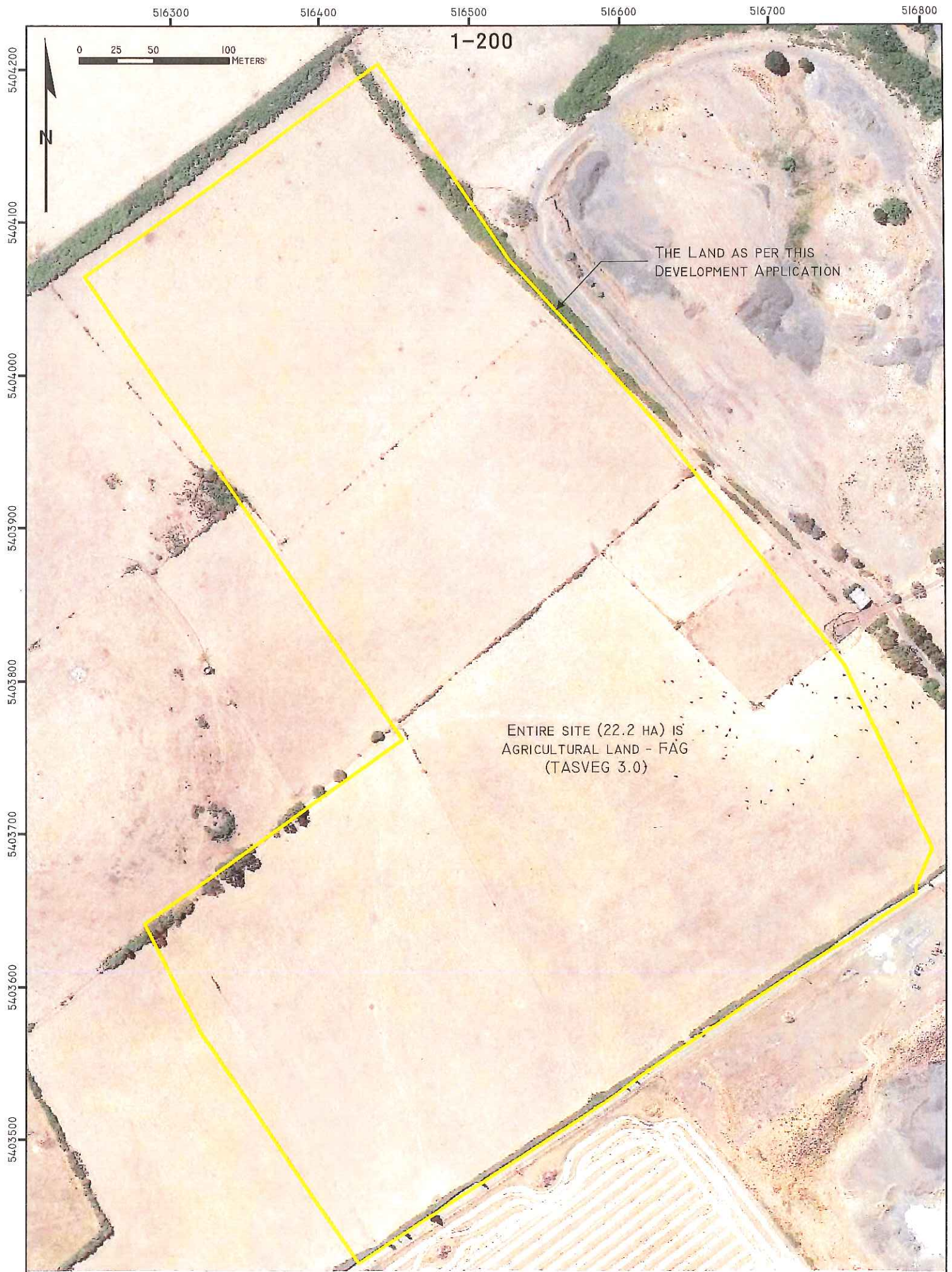
Plate 2. Images of Strathroy Bridge, Jingles Creek



Strathroy Bridge is an actively used bridge that remains part of the road network – it is not load limited and it does not have any weight restrictions associated with its use.

Heavy vehicles (eg cement trucks, fertilizer trucks, freight and log trucks) utilise the bridge which cause considerable vibration to the bridge structure.





COCKED HAT HILL QUARRY - BREADALBANE
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FIGURE D-8: VEGETATION COMMUNITIES (TASVEG 3.0) IN THE
COCKED HAT HILL QUARRY

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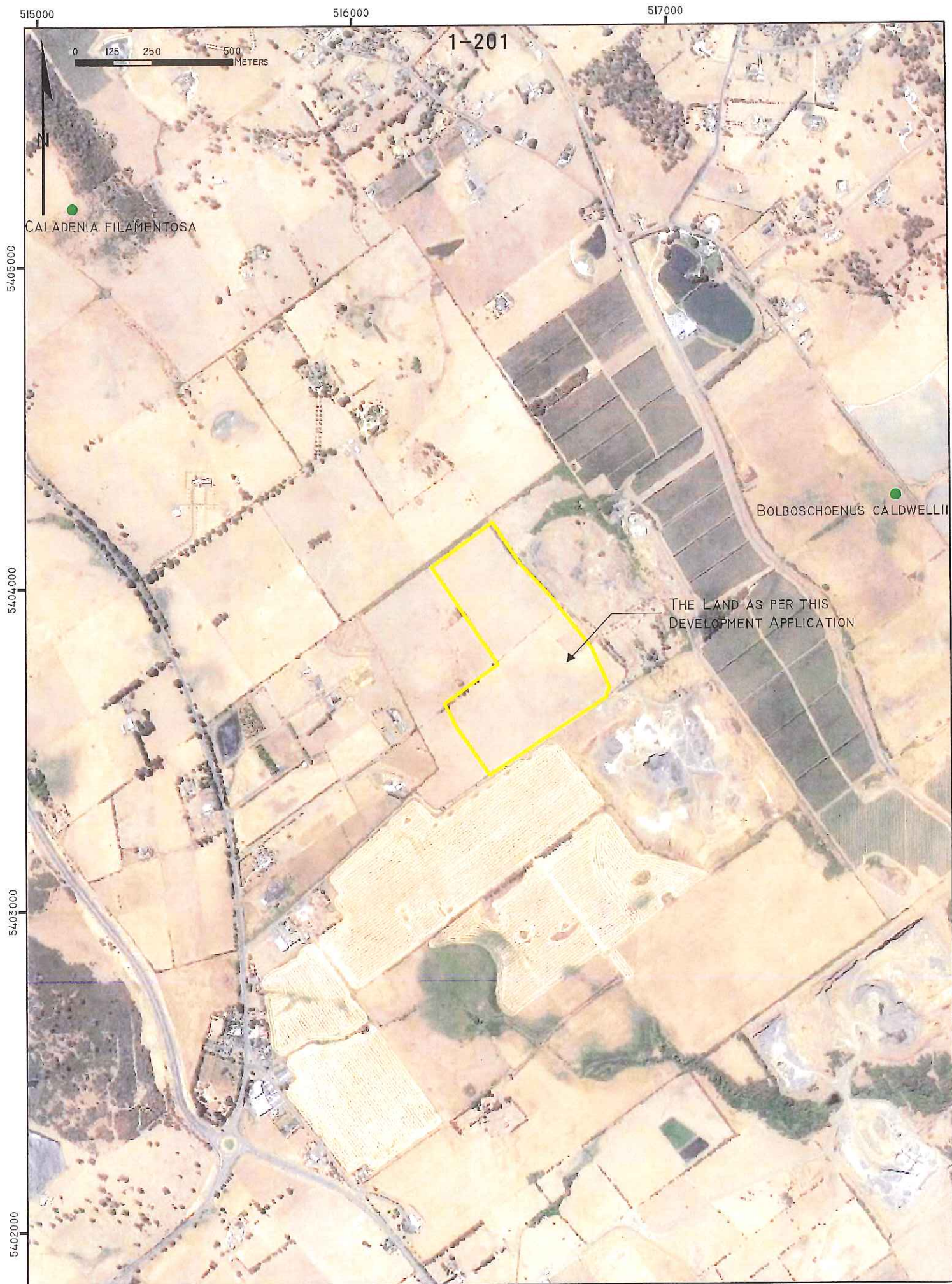
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DATE: 24TH MAY 2017



COCKED HAT HILL QUARRY - BREADALBANE
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FIGURE D-9: KNOWN (NVA) THREATENED FLORA AROUND COCKED
HAT HILL QUARRY

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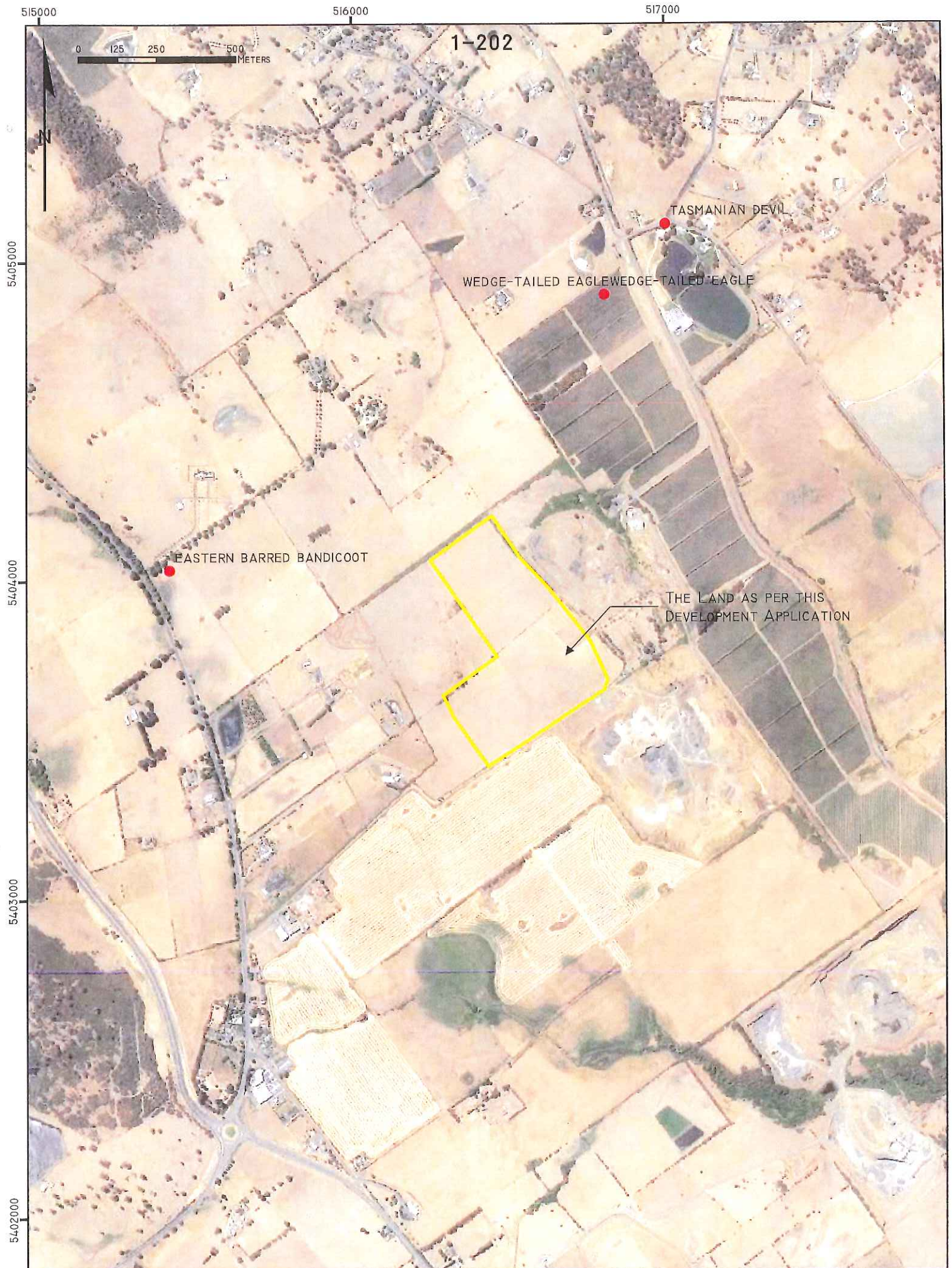


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GRID: MGA ZONE 55

TASMAP: PROSPECT

CLIENT: ADAMS GROUP

DATE: 26TH MAY 2017



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FIGURE D-I0: KNOWN (NVA) THREATENED FAUNA AROUND COCKED
HAT HILL QUARRY

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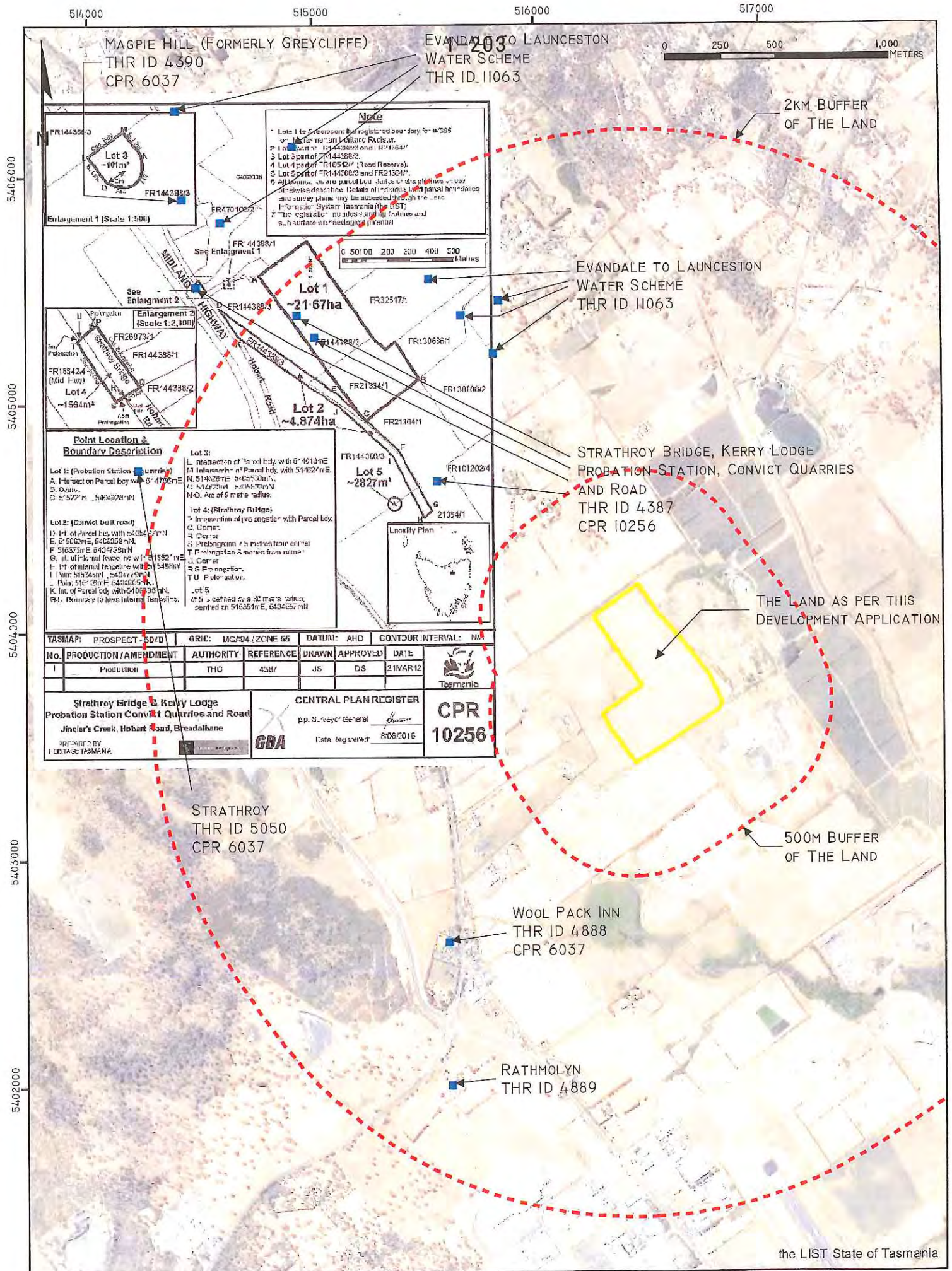
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DATE: 11/10/2010



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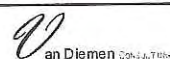
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COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE D-II: REGISTERED HERITAGE SITES NEAR COCKED HAT HILL QUARRY AND CPR 10256



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TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 24TH MAY 2017

the LIST State of Tasmania

PART E – OTHER POTENTIAL ENVIRONMENTAL EFFECTS AND THEIR MANAGEMENT

The following sections describe and assess the potential environmental effects of the activity for themes and the mitigation measures to be applied for the activity to minimise the risk of environmental nuisance.

E.1 AIR EMISSIONS

The primary air emission associated with quarry operations is dust. Dust can be a nuisance to neighbours and may be a safety hazard to quarry employees. Generally, the emission of visible dust should be confined within the boundary of the premises, except in remote areas where the effects beyond the site may not cause an environmental nuisance or harm.

There are already sources of dust emissions in the surrounding landscape, including agricultural uses (ploughing, cropping, harvesting) and quarry activities (use of crushers, blasting, drilling for blast events, road use by trucks etc).

Potential sources of dust within the quarry operation are from:

- The blasting, drilling and ripping of rock during dry windy conditions (especially in the summer months);
- The removal of vegetative cover (in this case, pasture) and the stripping of topsoil (very limited as the amount of topsoil is negligible);
- The movement of rock and gravel within the quarry by machinery;
- Crushing of rock material;
- Road (gravel) use in and next to the quarry; and
- Stockpiled gravel and fines.

E.1.1 Crusher Use and Dust Suppression

Standard industry practice for dust control, which will be applied at the activity, is to dampen material prior to crushing and/or to also have installed sprayers on the output chute to minimise dust emissions from an otherwise dry product¹. Mobile modern crushers have such features installed and there is a water source available – within pit water or water from the formal sediment basin – to operate these dust suppression measures whilst crushing.

E.1.2 General Operational Dust Suppression

General measures that will be used to suppress dust if it does occur in substantial volumes that may cause environmental harm (eg during periods of strong northerly and/or north-westerly winds in summer) include the following industry standard environmental practices for quarries²:

¹ Commitment 1: Standard industry practice for dust control, which will be applied at the activity, is to dampen material prior to crushing and/or to also have installed sprayers on the output chute to minimise dust emissions from an otherwise dry product.

² Commitment 2: General measures that will be used to suppress dust if it does occur include the following industry environmental practices for quarries:

- Watering of internal roads as required during dry and windy conditions;
- Retention of shelterbelt vegetation along the access road corridor where possible;
- Retention of shelterbelt vegetation, where feasible, around the quarry working area to reduce the likelihood of strong winds liberating fine particles into the air;
- Covering of trucks with tarpaulins and/or load dampening; and

- Watering of internal roads as required during dry and windy conditions;
- Retention of vegetation along the access road corridor where possible;
- Retention of native vegetation around the quarry working area to reduce the likelihood of strong winds liberating fine particles into the air;
- Covering of trucks with tarpaulins and/or load dampening; and
- Minimising the geographic extent of areas of exposed soil.

The effect of dust on agricultural activities, even from additional truck movements along the access road, is unlikely to have any significant effect to crop yield or pasture growth.

E.1.3 Cumulative Dust Emissions

The road (right of way) is already used by two other quarries – McGraths and Raeburn Quarries.

The operator of McGraths Quarry has not received any complaints in relation to dust from emissions caused by road usage.

The additional traffic movements on the internal right of way road may create extra dust emissions from the road surface as it is unsealed for most of its length.

The internal right of way is lined with trees (mainly hawthorns and sloe plum) for its length along 805 Hobart Road which is a property currently used for a cattery and kennel facility. It is proposed to build a dwelling on that property but it has a large setback to the southern side boundary with the right of way into the quarries.

There is no proposal to seal the road surface. Indeed, it is considered unnecessary given the mitigation options available to the operator (see Section E.1.2) and that the truck speed along the road is low. Speed humps exist on the road to ensure low truck speeds. The additional trucks using the road are not, in our view, to generate additional dust of such quantity to cause environmental harm to adjacent or nearby residential dwellings.

E.2 SURFACE WATER MANAGEMENT

The quarry activity will be managed to –

- ensure that pollutants which may cause environmental nuisance and/or harm do not enter the water system; and
- the proper treatment of water occurs prior to discharge from the site of extraction via a formalised sediment pond.

The Cocked Hat Hill Quarry will not utilise or share any of the drainage infrastructure of the McGrath Quarry.

The report prepared by Hydrodynamica (Attachment 6) describes an assessment of potential sediment-laden stormwater runoff from the site and provides indicative sediment basin capacities suitable for a 2 and 11-hectare quarry catchment area. The assessment was conducted using methodology contained in Landcom's Blue Book: *Volume 1 Managing Urban Stormwater- Soils and Construction - 4th Ed* (2004) and *Volume 2E Managing Urban Stormwater- Soils and Construction – Soils and Construction – Mines and Quarries* (2008).

- Minimising the geographic extent of areas of exposed soil.

As the quarry catchment grows the total water holding capacity of the quarry water management system will be expanded – this will be done through the combined capacity of the formal sediment basin and a within-pit basin.

Hydrodynamica provides in Table 7 of their report (Attachment 6) the volume of storage capacity of the formal sediment basin required based on a per hectare increase of catchment size. The operator of the quarry will utilise this table to size the sediment pond outside the quarry and the size of the within-pit basin for water capture and storage. Importantly, the operator can choose when to pump water to the formal sediment basin – this alone mitigates the risk of unexpected water flows into the environment that may otherwise occur from major rainfall events.

E.2.1 Management of within pit water

Sediment will be managed through the installation and operation of a water management system at the quarry. The quarry 'catchment' will peak at 11 hectares when at full maximum extent.

While the quarry is less than 2 hectares in area it is proposed that runoff will be controlled by directing it to a defined but *temporary* basin within the quarry, thus preventing any eroded material from reaching the receiving environment in an uncontrolled manner. This water will then be pumped to a formal sediment basin (see Figure B-3A) for treatment before discharge.

Measures will be established in the pit to avoid tracking machinery through the water storage basin, such as the temporary fencing of the area with orange safety fencing and appropriate signage.

When the quarry area is between 2 hectares and its maximum 11-hectare footprint, it is foreseen that sediment removal will occur via a *well-defined sediment basin* within the pit itself, with pit-treated water pumped into the formal sediment pond located outside the bunded area which then discharges to the receiving environment. This provides double-treatment of water for sediment removal and enables additional fines to be captured and re-used in the activity (eg for blending with the crushed material or for rehabilitation works).

E.2.2 Management of extracted pit water

The sediment basin located outside the bunded area will receive pumped pit water to remove sediment prior to its discharge to the receiving environment. Water would be pumped at a rate that did not overwhelm the capacity of the basin. The report by Hydrodynamica (Attachment 6) provides detailed conceptual designs of basins suitable for the proposed purpose.

E.2.3 Access Road Drainage

The surface of the access road is gravel. The access road is sufficiently wide or has passing bays present for trucks and other vehicles to pass. No modifications or drainage improvements are proposed as none are required. Like any access road, there will be ongoing maintenance to ensure drains are kept unblocked and that culverts are working.

E.2.4 Discharge environment

The receiving environment is highly modified, being agricultural lands with remnant native vegetation in paddocks and along some sections of watercourses. Watercourses are generally cleared of native vegetation or when present it is highly modified through weed infestation (mainly gorse and willows) or livestock grazing.

Water that may contain sediment would only be discharged from the activity via the formal sediment pond shown in Figure E-1. Water flows from the formal sediment basin can be controlled to some extent by the appropriate timing of pumping within-pit water to the formal sediment basin. The rate at which water would be pumped to the formal sediment basin would be such that the basin discharge volume generated would not lead to erosion or sedimentation impacts in the drainage line that flows to the east.

Given the receiving environment and ability to manage the frequency and volume of discharge from the formal sediment basin, there is likely to be negligible impact to the receiving environment. There is also unlikely to be any cumulative effects to the receiving environment.

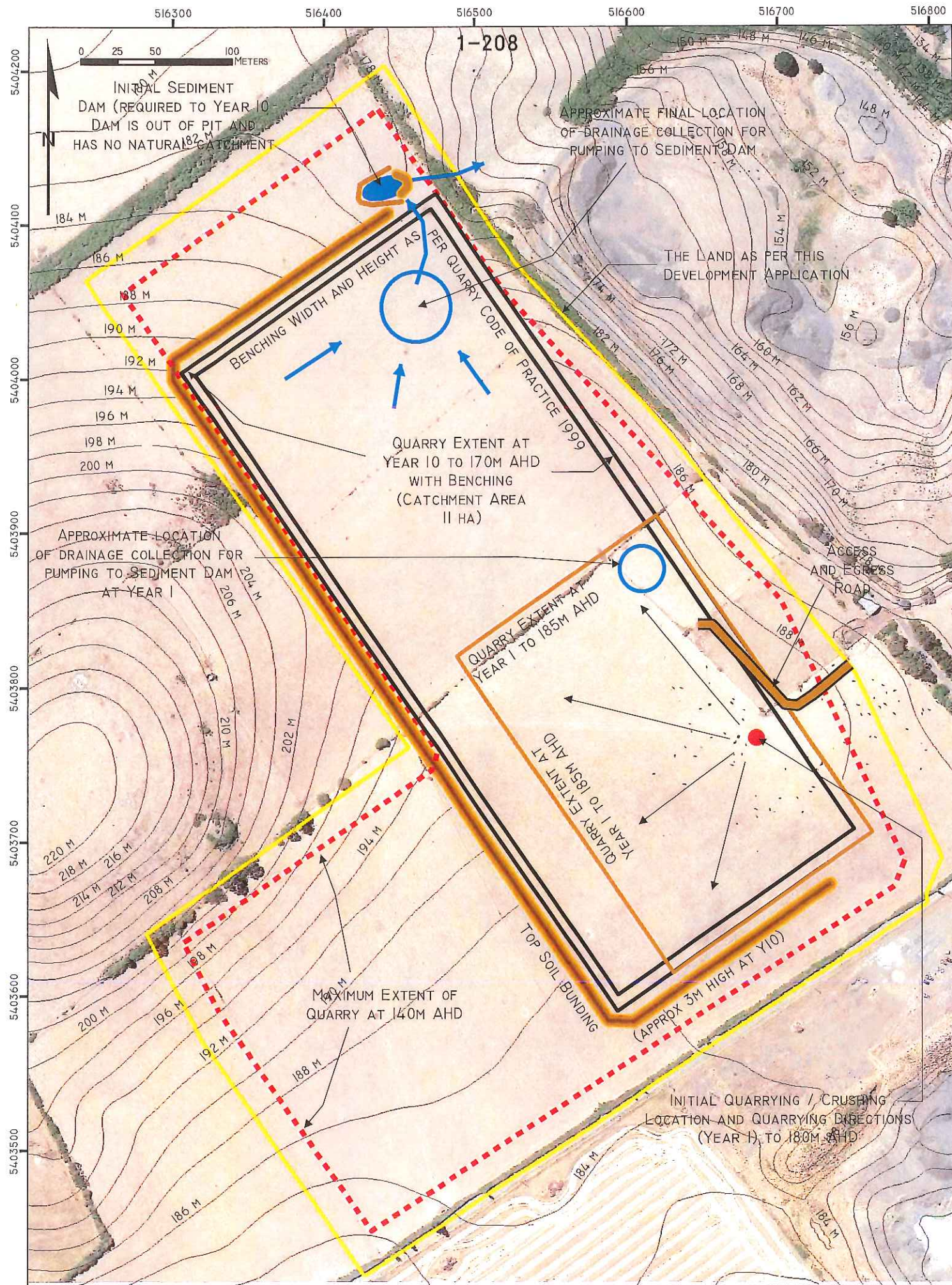
E.2.5 Management Summary

The below aspects of the site and the activity can be summarised for water management practices:

- No chemicals, fuels or oils will be stored within the pit overnight, and refuelling of quarry equipment will be carried out using a mobile bund³;
- While the quarry is less than 2 hectares in area it is proposed that runoff will be controlled by directing it to a defined but *temporary* basin within the quarry where it will then be pumped to a formal sediment basin;
- When the quarry area is between 2 hectares and its maximum 11-hectare footprint, it is foreseen that sediment removal will occur via a *well-defined sediment basin* within the pit itself, with pit-treated water pumped into the formal sediment basin located outside the bunded area which then discharges to the receiving environment;
- The formal sediment basin located outside the bunded area will receive pumped pit water to remove sediment prior to its discharge to the receiving environment. Water would be pumped at a rate that did not overwhelm the capacity of the basin;
- As the quarry catchment grows the total water holding capacity of the quarry water management system will be expanded – this will be done through the combined capacity of the formal sediment basin and the within-pit basin;
- Measures will be established in the pit to avoid tracking machinery through the water storage basin, such as the temporary fencing of the area with orange safety fencing and appropriate signage; and
- Sediment accumulation rates in the formal sediment pond will be monitored and the maintenance program revised as required. Accumulated sediment will be reused as part of the saleable product or for application onto disused areas as part of site rehabilitation⁴.

³ Commitment 3: No chemicals, fuels or oils will be stored on site overnight, and refuelling of quarry equipment will be carried out using a mobile bund.

⁴ Commitment 4: Sediment accumulation rates in the formal sediment basin will be monitored and the maintenance program revised as required. Accumulated sediment will be reused as part of the saleable product or for application onto disused areas as part of site rehabilitation.



COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE E-1: PROPOSED DRAINAGE (AT YEAR 10) AND SEDIMENT POND LOCATION



PO BOX 1186, TRAFALGAR VIC 3906

BRISBANE & TASMANIA, VICTORIA, AUSTRALIA



DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 1ST FEBRUARY 2017

E.3 LIQUID EFFLUENT

There will be no toilet (portable or fixed) or other amenities provided on site – these are available at the adjacent McGrath Quarry.

E.4 NOISE EMISSIONS

E.4.1 Background

Tarkarri Engineering was commissioned by Van Diemen Consulting (VDC) on behalf of Mt Oriel Breadalbane to conduct an environmental noise, ground vibration and air blast overpressure assessment for a proposed quarry on the southern and eastern slopes of Cocked Hat Hill, Breadalbane.

The assessment report prepared by Tarkarri Engineering forms part of this Development Proposal and Environmental Management Plan (DPEMP) and is in Attachment 7.

E.4.2 Existing Adjacent Quarry Emission Sources

The major noise sources from the adjacent quarry activities [eg McGrath Quarry, Raeburn Quarry] have been identified as follows:

- vehicle movements;
- ripping, blasting, drilling, crushing and screening; and
- on-site use of ancillary equipment - excavators, loader and truck movements.

E.4.3 Existing Landscape Noise Sources

Noise sources in the landscape surrounding the land where the activity will occur have been identified as follows:

- farm machinery on the property and adjacent properties, including the use of gas guns to scare birds from vineyards;
- aircraft using the nearby Launceston Airport;
- nearby quarry activities;
- activity associated with an existing kennel boarding facility at 805 Hobart Road (proposed to be expanded);
- vehicles and trucks using Hobart Road and the Midland Highway;
- trains using rail line (Western Junction line);
- winds in shelterbelts and remnant trees; and
- bird and insect life.

E.4.4 Proposed Quarry Emission Sources

The major noise sources from the Cocked Hat Hill Quarry activity have been identified as follows:

- drill rig and associated blasting operations;
- initial stockpiling of soil into bunds;
- ripping, crushing and screening; and
- use of ancillary equipment; excavators, loader and truck movements.

E.4.5 Sensitive Receptors

The location of residential dwellings in the landscape around the quarry is shown in Figure D-3A.

A house is proposed to be built on the property at **805 Hobart Road**.

The details of the development are provided below as they are relevant to the proposed Cocked Hat Hill Quarry proposal –

'The proposal is for a new cattery. The cattery building will accommodate 50 cat kennels, an indoor cat play area and cleaning area. The 128.9m² new cattery will be clad with weatherboard walls and Colorbond roof sheeting. The building will be 4.83 metres in height.

The existing kennels will be extended with two additional kennel areas, including an extension to the existing kennel building. Kennel 1 will accommodate 33 dog kennels in an area of 128.9m². Kennel 2 is an extension to the existing kennel building. The extension will accommodate an additional 33 dog kennels in an area of 160.5m². The addition is 5.316 metres in height. Kennel 3 will accommodate 14 dog kennels in an area of the existing crematorium building. The additions will increase the dog kennels from an existing 40 to 120 in total. A Doggy Day Care building is proposed as well. This building will also accommodate a hydrotherapy area and pool. The building will be 128.9m² and have a height of 5.316 metres.

The proposal includes an extension to the existing pet crematorium on the site. The extension is 162m² and accommodates the re-located animal cremator and a future animal crematorium area and storage. The extension will have a wall height of 5.846 metres and will match the existing building in terms of height, and cladding materials.

The proposal includes a new single dwelling. The dwelling will comprise of four bedrooms, main with ensuite and walk-in-robe. Living, dining and kitchen together with laundry, bathroom, and attached garage.

The dwelling is proposed to be clad using weatherboard wall cladding. The roof will be clad using colorbond custom orb roof sheeting.

The height of the dwelling is proposed to be maximum 4.7 metres.

A new rendered brick entrance feature adjacent to Hobart Road also forms a part of this submission. Graphics in the form of signage is proposed to be placed on one section of the entrance feature. A pole sign also within the property boundary is proposed that will be illuminated.'

Representatives of Mt Oriel Breadalbane Pty Ltd have consulted with the proponents of the house and associated works planned for 805 Hobart Road to reach a mutually acceptable position whereby the house and quarry can coexist.

Attachment 9 contains a Technical memo which was provided by Mt Oriel Breadalbane Pty Ltd (prepared by Tarkarri Engineering) to the developer of the house and associated works at 805 Hobart Road (a subset of Attachment 7).

The house location for 805 Hobart Road relative to the proposed 3 m earthen bund is shown in Attachment 10.

E.4.6 Environmental Noise Assessment

Tarkarri Engineering was commissioned by Van Diemen Consulting (VDC) on behalf of Mt Oriel Breadalbane to conduct an environmental noise, ground vibration and air blast overpressure assessment for a proposed quarry on the southern and eastern slopes of Cocked Hat Hill, Breadalbane. The assessment report forms part of this Development Proposal and Environmental Management Plan (DPEMP) and is contained within Attachment 7.

The noise survey used several receiver locations (see Figure 1 in Attachment 7) to generate data for the determination of background level which are listed below -

- Two locations [SLM_1 and SLM_2 in Figure 1 of Attachment 7] within the lease, the northern and south-western boundaries, were selected for the monitoring of ambient environmental noise using a logging sound level meter (SLM).
- Nine noise sensitive receiver locations were identified (9 shown in Figure 1 of Attachment 7) and these locations form the basis for the prediction of environmental noise emission, ground vibration and air blast overpressure levels from quarry operations.

Tarkarri Engineering found that background levels were typically above 38 dBA at the two SLM positions. Observation indicated that this statistic was largely controlled at both positions by traffic flow on the Midland Hwy and Hobart Rd to the west. LA90 levels increased to approx. 45 dBA during times when peak traffic on the Hwy was likely to be occurring, i.e. morning and afternoon periods associated with the travel to and from work.

LAeq levels typically tracked background approx. 2 to 3 dB higher with 15 to 20 dBA spikes throughout the monitoring likely to be the result of overfly activity associated with flights to and from the nearby Launceston Airport. Maximum noise levels also spiked at these times to levels between 70 and 80 dBA. Other more sustained periods of high LAeq levels at SLM_1 were likely to have been associated with local rural or commercial activity.

From the observed data Tarkarri Engineering considered it appropriate to adopt environmental noise emission criteria similar to the environmental noise emission limits provided in the McGraths Pit Environmental Protection Notice (EPN) No. 8742/3.

With consideration of ambient noise levels presented in section 3.1 of Attachment 7 and the *Quarry Code of Practice* Tarkarri Engineering considered the following noise emission criteria for this assessment to be conservative and to reasonably reflect consideration of additional noise emissions to a noise environment with existing commercial, extractive and rural noise producing activities. The criteria are –

- LAeq,10min 46 dBA: Day (0700 to 1800 hrs).
- LAeq,10min 40 dBA: Evening (1800 to 1900 hrs).

Using the environmental noise model, contour maps listed in Table 3 were generated to assist in the visualisation of noise propagation to the surrounding environment for the following model scenarios.

Table 3. Operational scenarios modelled and the resultant spatially shown noise contours

Scenario Modelled	Figure Number this DPEMP
Overburden removal yr 1	Figure E-2A
Overburden removal yr 10	Figure E-2B
Overburden removal max extent	Figure E-2C
Drilling yr 1	Figure E-2D
Drilling yr 10	Figure E-2E
Drilling max extent	Figure E-2F
Quarrying yr 1	Figure E-2G
Quarrying yr 10	Figure E-2H
Quarrying max extent	Figure E-2I
Hauling (Cocked Hat Hill quarry haul trucks)	Figure E-2J

All model scenarios included a 3-m high bund along the north-east boundary of the property at 805 Hobart Rd. The bund extends from the northern corner of the property to approx. 35 m past the south-eastern corner of the proposed residential building, resulting in a total bund length of approx. 85 m. This bund is to accommodate noise mitigation measures associated with the dwelling proposed for that property.

The noise assessment found that –

- Predicted noise levels at all nine receivers assessed are all below the adopted noise emission criteria (ie. those in the environmental noise emission limits provided in the McGraths Pit Environmental Protection Notice (EPN) No. 8742/3) established by the study);
- Predicted noise emission levels indicate that noise impact would increase for receivers 3, 4, 5 and 6 as the quarry progresses north (about year 10) and increases for receivers 1, 8 and 9 as the quarry progresses west (max extent). For quarry operations, this is negated to some extent with noise impact reducing as quarry depth increases, the result of increased shielding;
- Bunding along the pit edge and along the north-east boundary of the property at 805 Hobart Rd is critical in preventing exceedances of the day noise emission criteria during drilling operations and quarrying during the first year. Bunding along the north-east boundary of the property at 805 Hobart Rd is also critical in preventing exceedances of the day noise emission criteria during overburden removal (yr 1 and max extent); and
- Hauling impact is highest for receivers close to the haul road, receivers 1, 8 and 9.

E.4.7 Cumulative Noise Effects – Quarrying and Hauling

With the Cocked Hat Hill quarry operating adjacent to two existing quarry operations the potential for cumulative noise impacts is considered here from both a **quarrying** and **hauling** perspective (all three quarries would utilise the same haul route to access Hobart Rd).

For the assessment of cumulative impacts from quarrying (crushing, screening etc), receiver locations 1 and 2 were chosen as they are the nearest dwellings and location 7 was chosen as it would also experience noise impacts from the adjacent Raeburn Quarry. These locations are the most likely to experience cumulative effects, if any, from the operation of the quarries (ie McGraths Pit, Cocked Hat Hill and Raeburn). The cumulative effect at the three receiver locations is negligible with the exception of receiver 7 to the east where a 2 dB increase could potentially occur, however, the cumulative impact is below 30 dBA and is highly unlikely to cause environmental nuisance.

There is some potential for up to a 2 dB increase at some locations (receivers 1 and 9) during overburden removal and drilling operations.

Tarkarri Engineering noted that the cumulative impact assessment including McGraths Pit was not possible because predicted and/or measured noise levels at receiver locations from McGraths Pit were not available. However, Tarkarri Engineering did opine that noise impacts from this quarry are likely to be highest to the east given the pit orientation and predicted levels at receivers in this direction from the Cocked Hat Hill quarry are at or below 30 dBA, therefore any cumulative impact is expected to be minimal.

The hauling environmental noise model scenario for the Cocked Hat Hill quarry was run assuming 5 trucks on the Haul road in a single 10-minute period – this is considered to represent typical number of truck movements from all three quarries. Predicted cumulative noise from hauling by all three quarries results in a modelled 4 dB increase at all nine receiver locations as shown in table 5 of Attachment 7. The highest exposure would be at receiver 9, the closest receiver to the haul route, which is calculated to be 41 dBA. All other receiver locations are modelled as being less than 40 dBA.

E.4.8 Ground Vibration and Air Blast Overpressure

Ground vibration and air blast overpressure (ABO) predictions were assessed by Tarkarri Engineering against the condition provided in the EPN for the adjacent McGraths Pit (EPN No. 8742/3).

These are in accordance with limits provided in the *Quarry Code of Practice*.

Predictions were made to residences up to approx. 1 km from the quarry. A typical maximum charge mass/delay of **50 kg** was assumed - this should be sufficient to liberate the type of rock being quarried based on blasting charge mass/delay used at the McGrath Quarry (the rock to be liberated is comparable in form and strength).

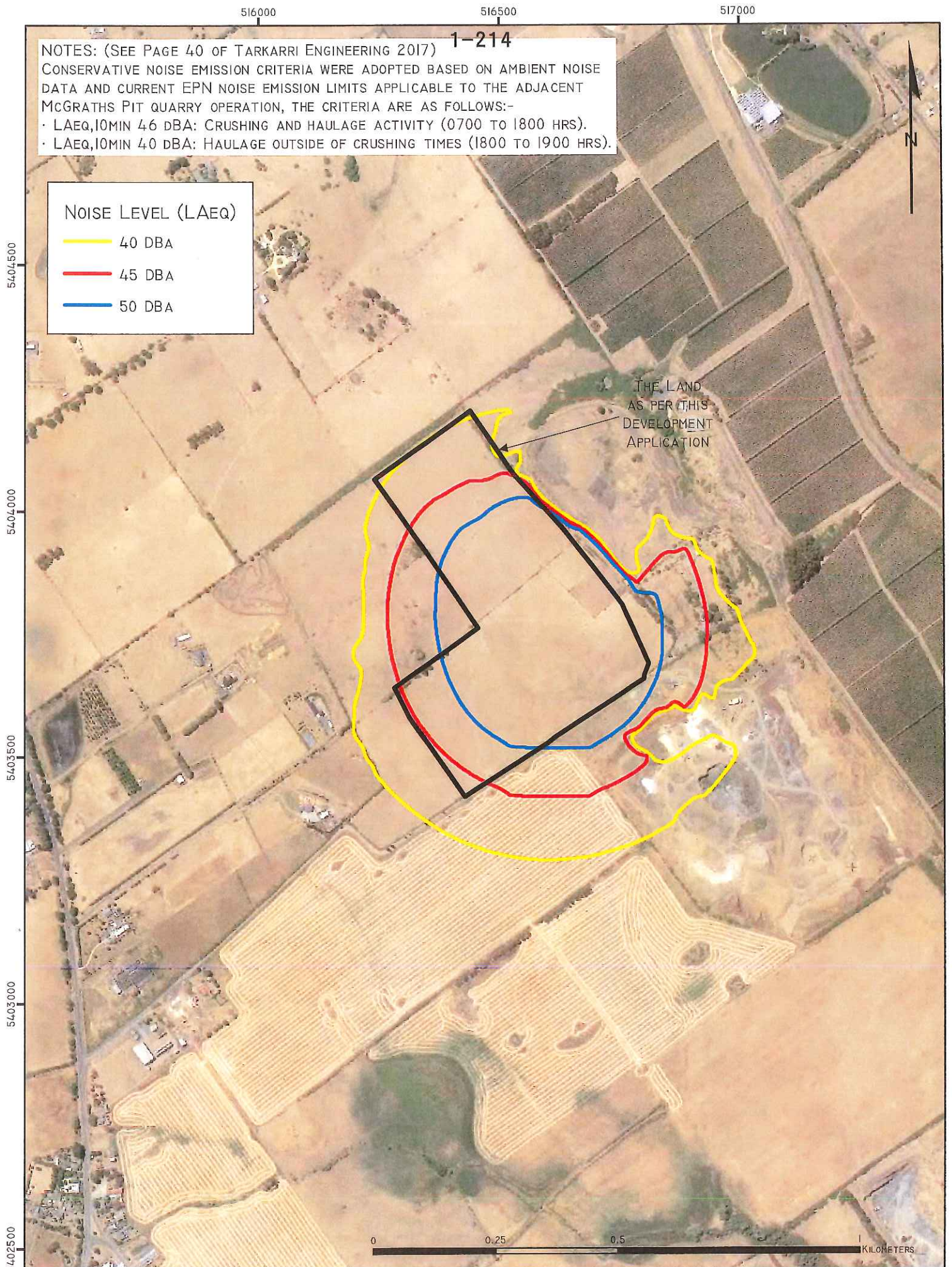
The following results were produced by Tarkarri Engineering (receiver locations are shown in Figure 1 of Attachment 7) -

- Predicted ground vibration levels are below the 5 mm/s limit at the yr 1 and yr 10 stages of quarry development. Predicted levels at the maximum extent using the average OSM regression exceeded 5 mm/s at receiver 9 and at receivers 1,2 and 9 using the upper bound regression. 10 mm/s was also exceeded at receivers 1 and 9 using the upper bound regression.
- Predicted air blast overpressure levels exceeded 115 dB at receivers 1 and 9 at all three quarry development stages and at receiver 2 at the maximum extent stage. 120 dB was also exceeded at receivers 1 and 9 at the maximum extent stage of quarry development.

The cumulative effect of **blasting events** was not considered in the noise assessment as it is [simultaneous blasting] unlikely to ever occur – there is a notification process between the quarry operators such that this event can be practically avoided. Indeed, the quarry operators are limited in their choice of blast contractor so they are unlikely to ever be available to conduct concurrent blasts. The requirement to liaise with the Launceston Airport is also a means by which concurrent blasts can be avoided. There seems little point in assessing the impact of an event that is very unlikely to ever happen.

Given the predicted exceedances of ground vibration and air blast overpressure criteria presented Tarkarri Engineering provided the following recommendations to minimise the potential ground vibration and air blast overpressure impact from blasting at the proposed Cocked Hat Hill Quarry -

- Utilise a charge mass of 35 kg/delay for initial development blasts.
- Blast design should incorporate a minimum stemming depth of 3 m.
- Increase to 50 kg/delay once high wall blasting is established with blast design to incorporate minimum front row burden of 3 m. Additionally, ensure that blast design allows for the high wall face to be oriented away from critical receiver locations as far as practically possible. This is to take advantage of directivity provided by high wall blasting (over pressure levels can be up to 9 dB lower at a given distance to the rear of a high wall blast as opposed to the same distance from the front) and topographic shielding provided by Cocked Hat Hill. Recommended face orientation across the Cocked Hat Hill quarry pit area is shown below on the maximum quarry extent development plan provided in VDC's DA supporting information.
- Develop site-specific scaled regressions for the site via spatially varied monitoring of blasting.
- For the south-west section of the quarry, out to the maximum south-western extent of the quarry, adjust charge mass/delay levels in accordance with results from site-specific scaled regressions once blasting is to occur within 400 m of receiver locations (receivers 1 and 9 – being proposed/constructed dwellings at 803 and 805 Hobart Road).



COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE E-2A: PREDICTED NOISE EMISSION CONTOURS, OVERBURDEN
REMOVAL YR 1. (TF. 2017, FIGURE 7, P23)

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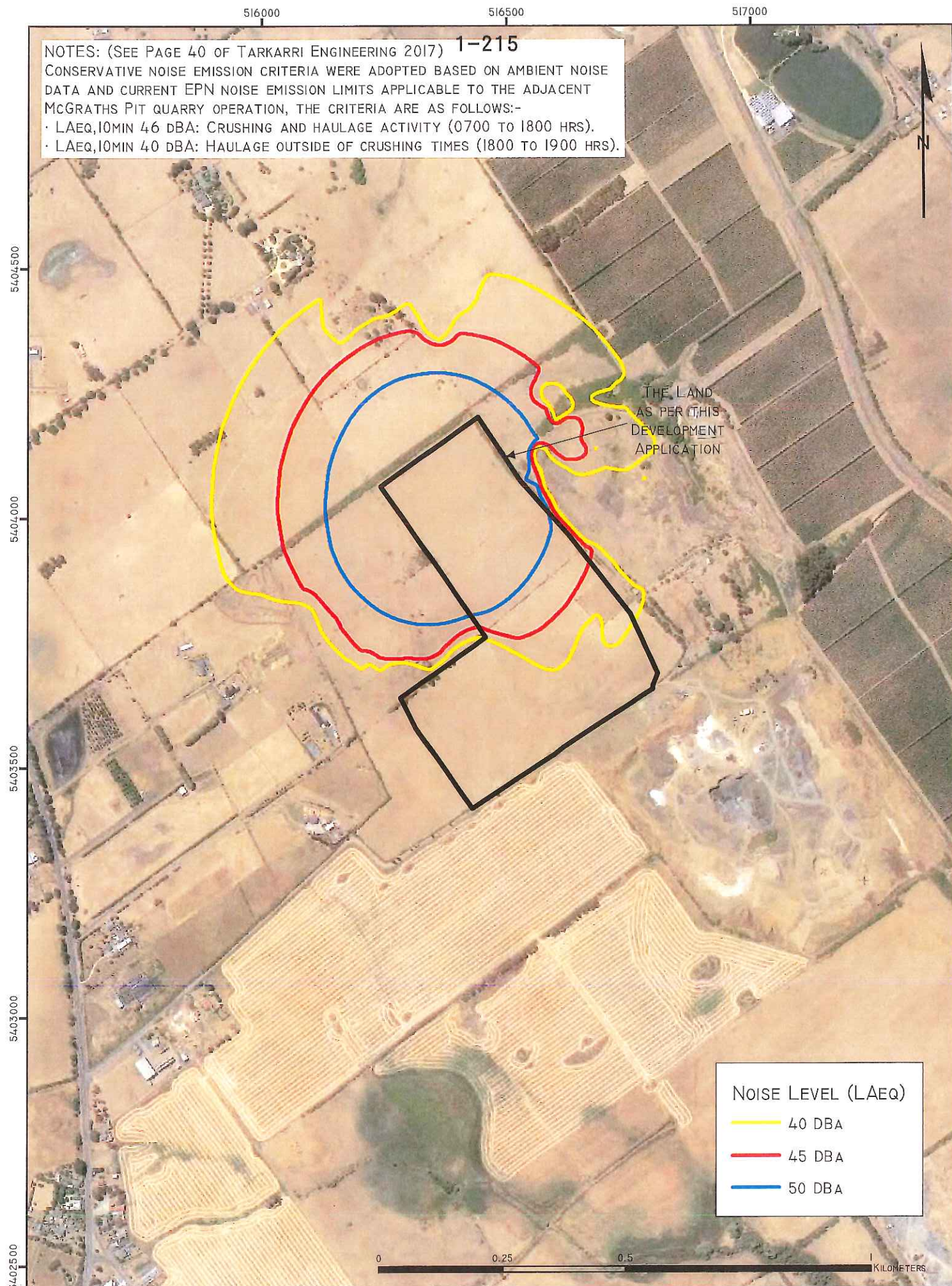
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DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 28TH MAY 2017



COCKED HAT HILL QUARRY - BREADALBANE
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FIGURE E-2B: PREDICTED NOISE EMISSION CONTOURS, OVERBURDEN
 REMOVAL YR 10. (TE. 2017. FIGURE 8. P24)



PO BOX 1156 TASMANIA 7242

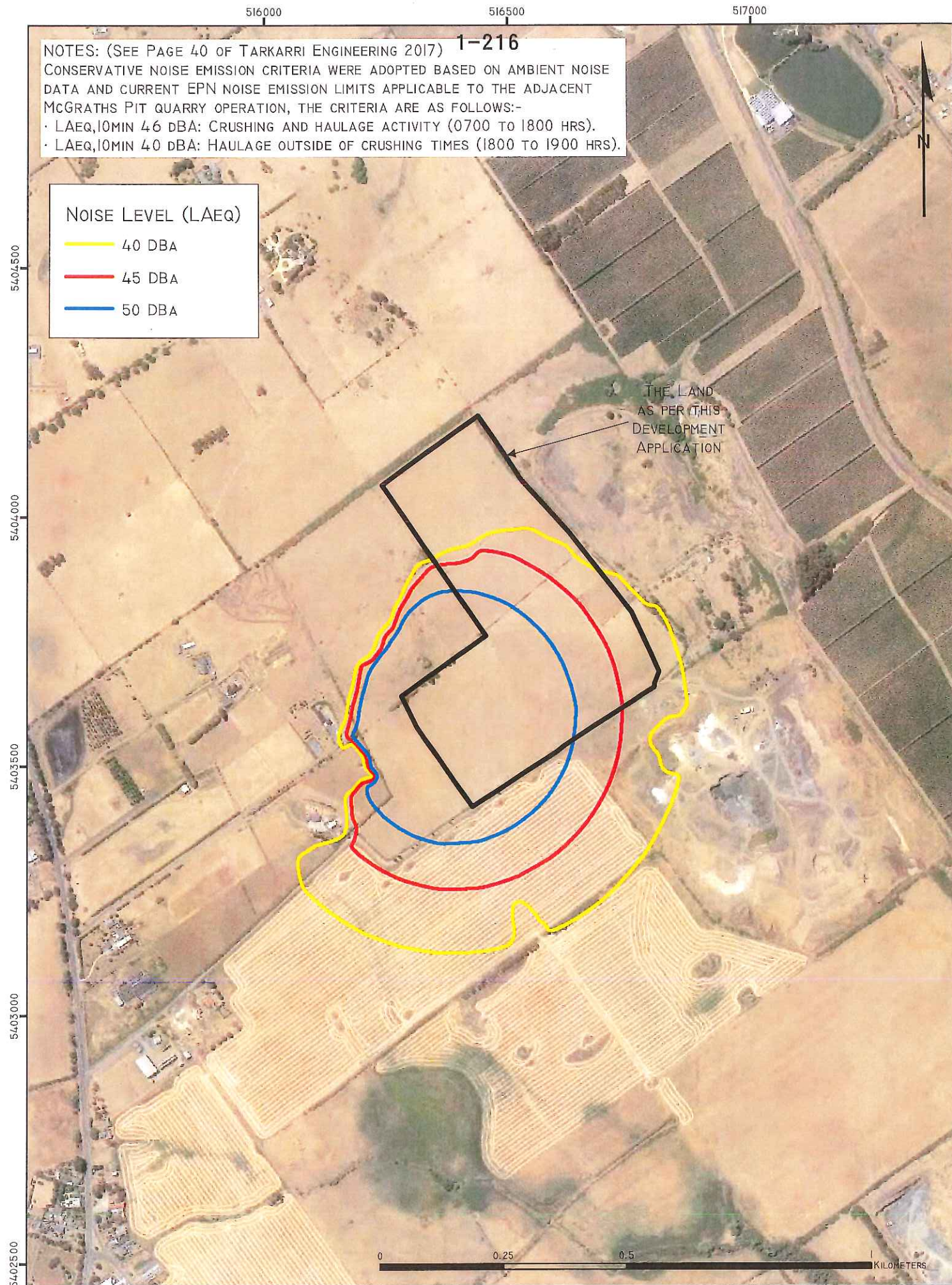
BASE DATA BY TARKARRI ENGINEERING, 2017



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 GRID: MGA ZONE 55

TASMAP: PROSPECT
 CLIENT: ADAMS GROUP

DATE: 28TH MAY 2017



**COCKED HAT HILL QUARRY - BREADALBANE
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**FIGURE E-2C: PREDICTED NOISE EMISSION CONTOURS, OVERBURDEN
 REMOVAL MAX EXTENT. (TE. 2017, FIGURE 9, P25)**

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PO BOX 1158 TOWN 125 7000

BASE MAP BY 1:25,000, 1:50,000, 1:100,000
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TASMAP: PROSPECT
 CLIENT: ADAMS GROUP

DATE: 28TH MAY 2017

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NOTES: (SEE PAGE 40 OF TARKARRI ENGINEERING 2017)

1-217

CONSERVATIVE NOISE EMISSION CRITERIA WERE ADOPTED BASED ON AMBIENT NOISE DATA AND CURRENT EPN NOISE EMISSION LIMITS APPLICABLE TO THE ADJACENT McGRATHS PIT QUARRY OPERATION, THE CRITERIA ARE AS FOLLOWS:-

- LAEQ,10MIN 46 DBA: CRUSHING AND HAULAGE ACTIVITY (0700 TO 1800 HRS).
- LAEQ,10MIN 40 DBA: HAULAGE OUTSIDE OF CRUSHING TIMES (1800 TO 1900 HRS).

NOISE LEVEL (LAEQ)

- 40 DBA
- 45 DBA
- 50 DBA

THE LAND
AS PER THIS
DEVELOPMENT
APPLICATION

0 0.25 0.5 1 KILOMETERS

COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE E-2D: PREDICTED NOISE EMISSION CONTOURS,
DRILLING YR 1. (TE. 2017, FIGURE 10, P26)

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BASED ON: TARKARRI ENGINEERING 2017, FIGURE 10, P26



DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 28TH MAY 2017

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- LAeq,10MIN 46 dBA: CRUSHING AND HAULAGE ACTIVITY (0700 TO 1800 HRS).
- LAeq,10MIN 40 dBA: HAULAGE OUTSIDE OF CRUSHING TIMES (1800 TO 1900 HRS).

THE LAND
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DEVELOPMENT
APPLICATION

— 50 DBA

DATE: 28TH MAY 2017

FIGURE E-2E: PREDICTED NOISE EMISSION CONTOURS,
DRILLING YR 10. (TE. 2017. FIGURE 11. P27)

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NOTES: (SEE PAGE 40 OF TARKARRI ENGINEERING 2017)

1-219

CONSERVATIVE NOISE EMISSION CRITERIA WERE ADOPTED BASED ON AMBIENT NOISE DATA AND CURRENT EPN NOISE EMISSION LIMITS APPLICABLE TO THE ADJACENT McGRATHS PIT QUARRY OPERATION, THE CRITERIA ARE AS FOLLOWS:-

- LAeq,10MIN 46 DBA: CRUSHING AND HAULAGE ACTIVITY (0700 TO 1800 HRS).
- LAeq,10MIN 40 DBA: HAULAGE OUTSIDE OF CRUSHING TIMES (1800 TO 1900 HRS).

NOISE LEVEL (LAeq)

40 DBA

45 DBA

50 DBA

THE LAND
AS PER THIS
DEVELOPMENT
APPLICATION

0 0.25 0.5 1 KILOMETERS

COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE E-2F: PREDICTED NOISE EMISSION CONTOURS,
DRILLING MAX EXTENT. (TE. 2017, FIGURE 12, P28)

an Diemen Consulting

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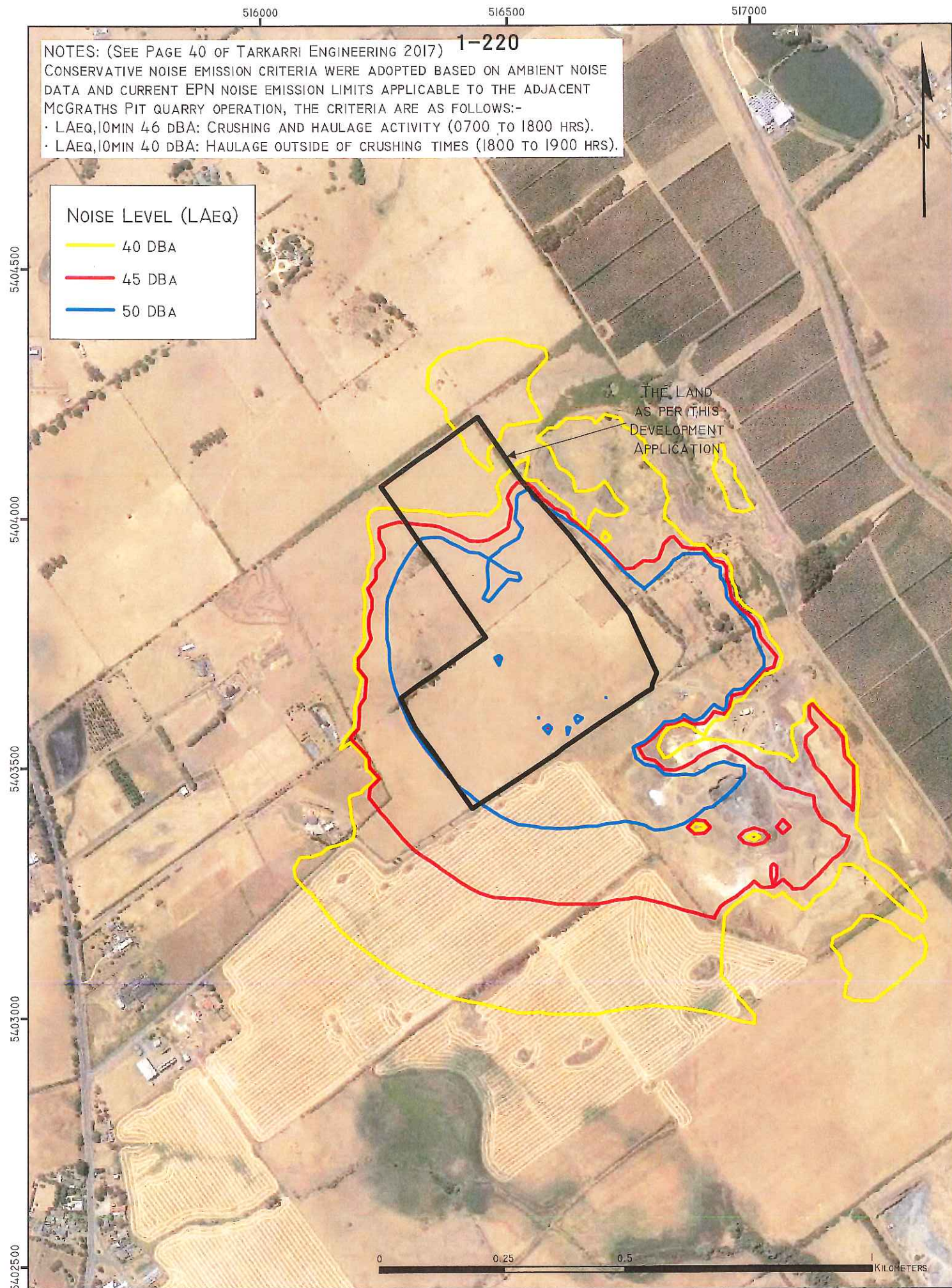
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DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 28TH MAY 2017



COCKED HAT HILL QUARRY - BREADALBANE
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FIGURE E-2G: PREDICTED NOISE EMISSION CONTOURS,
 QUARRYING YR 1. (TE. 2017, FIGURE I3, P29)

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PO BOX 1146 Tass 7251 TAS

SUBMITTAL TICKET: 11 DATE OF TENDERS: 11/05/2017



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 GRID: MGA ZONE 55

TASMAP: PROSPECT
 CLIENT: ADAMS GROUP

DATE: 28TH MAY 2017

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NOTES: (SEE PAGE 40 OF TARKARRI ENGINEERING 2017)

CONSERVATIVE NOISE EMISSION CRITERIA WERE ADOPTED BASED ON AMBIENT NOISE DATA AND CURRENT EPN NOISE EMISSION LIMITS APPLICABLE TO THE ADJACENT McGRATHS PIT QUARRY OPERATION, THE CRITERIA ARE AS FOLLOWS:-

- LAEQ,10MIN 46 DBA: CRUSHING AND HAULAGE ACTIVITY (0700 TO 1800 HRS).
- LAEQ,10MIN 40 DBA: HAULAGE OUTSIDE OF CRUSHING TIMES (1800 TO 1900 HRS).

NOISE LEVEL (LAEQ)

40 DBA

45 DBA

50 DBA

THE LAND
AS PER THIS
DEVELOPMENT
APPLICATION

0 0.25 0.5 1 KILOMETERS

COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE E-2H: PREDICTED NOISE EMISSION CONTOURS,
QUARRYPING YR 10. (TE. 2017, FIGURE 14, P30)

an Diemen CONSULTING

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AERIAL PHOTOGRAPHIC DATA



DATUM: GDA94
GRID: MGA ZONE 55

TASMAT: PROSPECT

CLIENT: ADAMS GROUP

DATE: 28TH MAY 2017

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NOTES: (SEE PAGE 40 OF TARKARRI ENGINEERING 2017) **1-222**

CONSERVATIVE NOISE EMISSION CRITERIA WERE ADOPTED BASED ON AMBIENT NOISE DATA AND CURRENT EPN NOISE EMISSION LIMITS APPLICABLE TO THE ADJACENT MCGRATHS PIT QUARRY OPERATION, THE CRITERIA ARE AS FOLLOWS:-

- LAeq,10MIN 46 DBA: CRUSHING AND HAULAGE ACTIVITY (0700 TO 1800 HRS).
- LAeq,10MIN 40 DBA: HAULAGE OUTSIDE OF CRUSHING TIMES (1800 TO 1900 HRS).

NOISE LEVEL (LAeq)

- 40 DBA
- 45 DBA
- 50 DBA

THE LAND
AS PER THIS
DEVELOPMENT
APPLICATION

0 0.25 0.5 1 KILOMETERS

COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE E-21: PREDICTED NOISE EMISSION CONTOURS,
QUARRYING YR MAX EXTENT. (TE. 2017. FIGURE I5. P31)

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PC 50x150m Thru 1/25 Scale

BASE MAP BY TARKARRI ENGINEERING, 2017. STATE OF TASMANIA
GOVERNMENT OF TASMANIA



DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 28TH MAY 2017

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NOTES: (SEE PAGE 40 OF TARKARRI ENGINEERING 2017) **1-223**

CONSERVATIVE NOISE EMISSION CRITERIA WERE ADOPTED BASED ON AMBIENT NOISE DATA AND CURRENT EPN NOISE EMISSION LIMITS APPLICABLE TO THE ADJACENT McGRATHS PIT QUARRY OPERATION, THE CRITERIA ARE AS FOLLOWS:-

- LAEQ,10MIN 46 DBA: CRUSHING AND HAULAGE ACTIVITY (0700 TO 1800 HRS).
- LAEQ,10MIN 40 DBA: HAULAGE OUTSIDE OF CRUSHING TIMES (1800 TO 1900 HRS).

NOISE LEVEL (LAEQ)

40 DBA

45 DBA

50 DBA

THE LAND
AS PER THIS
DEVELOPMENT
APPLICATION

0 0.25 0.5 1 KILOMETERS

COCKED HAT HILL QUARRY - BREADALBANE DP&EMP

FIGURE E-2J: PREDICTED NOISE EMISSION CONTOURS,
HAULING. (TE. 2017. FIGURE 16. P32)

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DESIGNED BY: TARKARRI, A DIVISION OF TARKARRI ENGINEERING
DRAWN BY: TARKARRI, A DIVISION OF TARKARRI ENGINEERING



DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: PROSPECT
CLIENT: ADAMS GROUP

DATE: 28TH MAY 2017

E.4.9 Drill and Blast Planning

A Blast Management Plan has been developed for the activity (Attachment 4).

Measures to be applied during the preparation of a blast include –

Notifications before blast – residents

All residents within a 1 km radius of a blast will be notified prior to that blast. This notification will be given at least 48 hours before such blasting is due to occur, and preferably before 72 hours. If the blast(s) cannot take place at the time specified, or because of blasting misfires, Mt Oriel Breadalbane Pty Ltd or their delegated agent will advise all those residents within 1 km of the quarry of the revised time at which blasting will take place.

Notifications before blast – nearby quarries

The manager/supervisor of the Stornoway Raeburn and Bis Quarries will be notified prior to the blast. Notification will be given at least 48 hours before such blasting is due to occur, and preferably before 72 hours. If the blast(s) cannot take place at the time specified, or because of blasting misfires, Mt Oriel Breadalbane Pty Ltd or their delegated agent will advise of the revised time at which blasting will take place.

Storage and handling of explosives

The transportation, storage and handling of explosives is conducted by the blast contractor in accordance with the Australian Explosives Code (1999), the Australian Code for the transport of explosives by road and rail (Third edition - 2009) and Australian Standard 2187 Explosives – Transport, storage and Use (parts 1 and 2).

Risk assessment and auditing

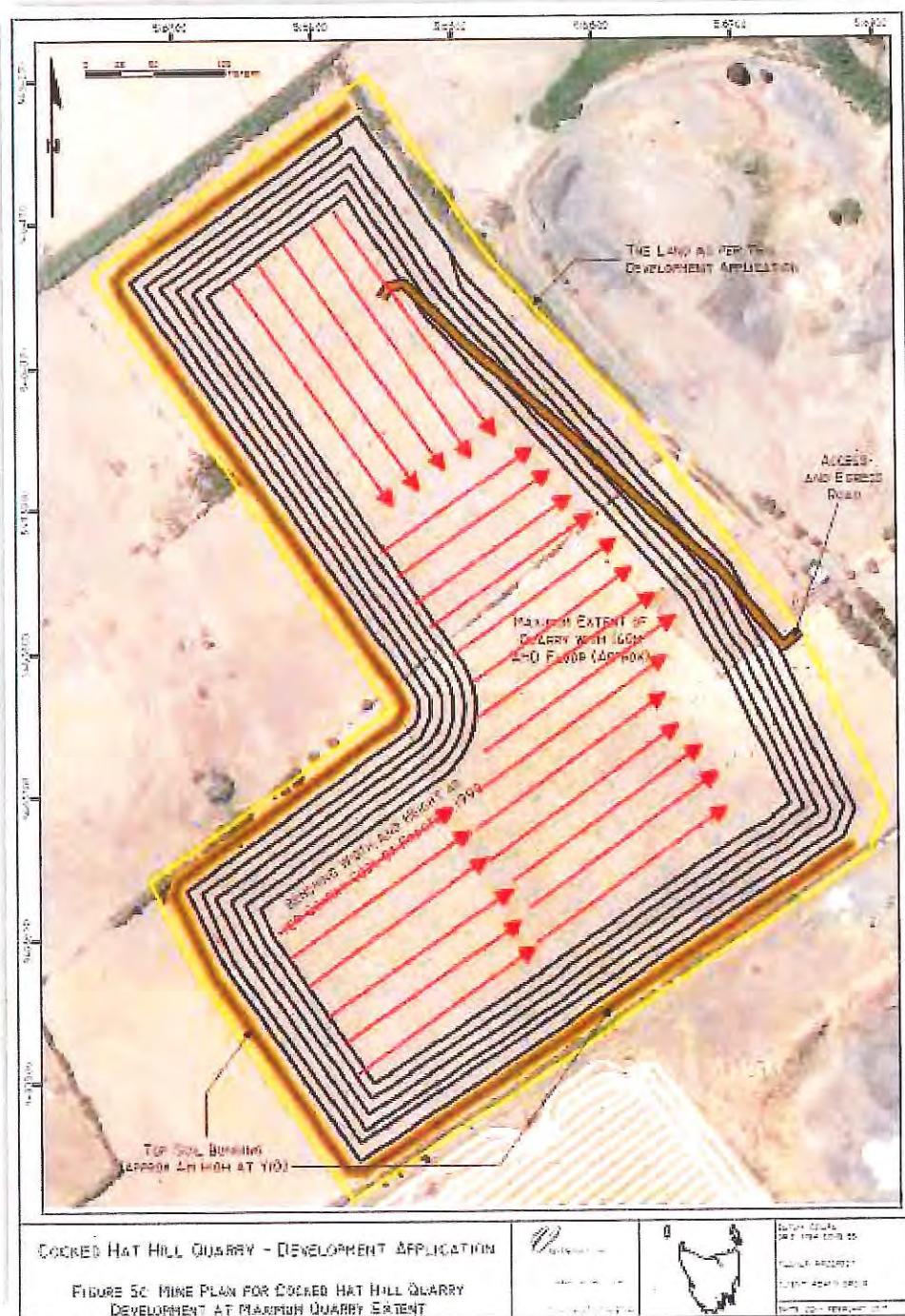
The blast contractor is responsible for conducting a risk assessment and safety audit of the quarry as part of each blast. This includes the drilling of the holes for explosives, handling explosives, operation of detonation devices and the safe detonation of the charges. Mt Oriel Breadalbane Pty Ltd or their delegated agent will receive a copy of the risk assessment and associated documentation that supports the placement of drill holes, levels of explosives used and the detonation devices.

Noise/vibration blast monitoring program

Measurements of air blast overpressure and peak particle velocity will be carried out by the blast contractor in accordance with the methods set down in *Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration*, Australian and New Zealand Environment Council, September 1990. The noise/vibration test results collected by the blast contractor will be securely held by Mt Oriel Breadalbane Pty Ltd or their delegated agent for 5 years from the date of the blast. If the blasting noise limits and/or vibrations as specified in the permit are exceeded, the EPA Director will be notified within 48 hours of the blasting event.

Incident Reporting

The blast contractor is responsible for reporting to Police/Fire any incident that requires their involvement or attendance at the quarry. Mt Oriel Breadalbane Pty Ltd is responsible for reporting any misfires to surrounding relevant landowners: if the blast(s) cannot take place at the time specified, or because of blasting misfires, Mt Oriel Breadalbane Pty Ltd or their delegated agent will advise all those residents within 1 km of the activities on the land of the revised time at which blasting will take place.



E.4.9 Noise – Vibration Management Summary

The below aspects of the site and the activity can be summarised to indicate that noise emissions of the activity are very likely to be acceptable to the local conditions:

- Machinery will be well maintained to minimise the risk of generating excessive noise emissions⁵;

⁵ Commitment 5: Machinery will be well maintained to minimise the risk of generating excessive noise emissions.

- Operating hours will be those in Table 1⁶;
- Utilise a charge mass of 35 kg/delay for initial development blasts⁷;
- Blast design should incorporate a minimum stemming depth of 3 m⁸;
- Increase to 50 kg/delay once high wall blasting is established with blast design to incorporate minimum front row burden of 3 m. Additionally, ensure that blast design allows for the high wall face to be oriented away from critical receiver locations (receiver locations 1, 2 and 9 in Figure 1 of Attachment 7 – being proposed or constructed dwellings at 775, 803 and 805 Hobart Road) as far as practically possible⁹; and
- Develop site-specific scaled regressions for the site via spatially varied monitoring of blasting¹⁰. For the south-west section of the quarry, out to the maximum south-western extent of the quarry, adjust charge mass/delay levels in accordance with results from site-specific scaled regressions once blasting is to occur within 400 m of receiver locations (receivers 1 and 9 – being proposed/constructed dwellings at 803 and 805 Hobart Road).

E.5 SOLID AND CONTROLLED WASTE MANAGEMENT

The activity will not generate Controlled Waste nor will it generate rock/soil/overburden 'solid wastes' as the material excavated will be used for rehabilitation of benches, slopes etc. Machinery related 'solid wastes', such as oil filters, will generally not be produced as machinery servicing will not occur in the quarry (except for emergency repairs or service requirements).

E.5.1 Material Sources

Machinery related 'solid wastes', such as oil filters, will generally not be produced as machinery servicing will not occur in the quarry (except for emergency repairs or service requirements).

E.5.2 Management Summary

The below aspects of the site and the activity can be summarised for waste management practices:

- No machinery servicing, except for emergency repairs or service requirements, will be conducted within the quarry. Wastes generated from machinery repairs will be disposed of in an appropriate bin near the entrance to the quarry for future disposal at a permitted refuse disposal site¹¹; and

⁶ Commitment 6: Operating hours will be those in Table 1.

⁷ Commitment 7: Utilise a charge mass of 35 kg/delay for initial development blasts.

⁸ Commitment 8: Blast design should incorporate a minimum stemming depth of 3 m.

⁹ Commitment 9: Increase to 50 kg/delay once high wall blasting is established with blast design to incorporate minimum front row burden of 3 m. Additionally, ensure that blast design allows for the high wall face to be oriented away from critical receiver locations (receiver locations 1, 2 and 9 in Figure 1 of Attachment 7 – being proposed or constructed dwellings at 775, 803 and 805 Hobart Road) as far as practically possible.

¹⁰ Commitment 10: Develop site-specific scaled regressions for the site via spatially varied monitoring of blasting. For the south-west section of the quarry, out to the maximum south-western extent of the quarry, adjust charge mass/delay levels in accordance with results from site-specific scaled regressions once blasting is to occur within 400 m of receiver locations (receivers 1 and 9 – being proposed/constructed dwellings at 803 and 805 Hobart Road).

¹¹ Commitment 11: No machinery servicing, except for emergency repairs or service requirements, will be conducted within the quarry. Wastes generated from machinery repairs will be disposed of in an appropriate bin located near the site office for future disposal at a permitted refuse disposal site.

- Waste generated by workers from general refuse (eg lunch wrappers) at the quarry will be collected in waste bins provided on-site for general refuse. These will be emptied at least once per fortnight and the material disposed of at a permitted refuse disposal site¹².

E.6 DANGEROUS AND/OR HAZARDOUS GOODS

The storage, handling and transport of dangerous goods, explosives and dangerous substances must comply with the requirements of relevant State Acts and any regulations thereunder, including:

- *Work Health and Safety Act 2012* and subordinate regulations;
- *Explosives Act 2012* und subordinate regulations; and
- *Dangerous Goods (Road and Rail Transport) Act 2010* and subordinate regulations.

E.6.1 Material Sources

Fuel and oil will be used in the quarry to operate and maintain functional machinery. There will be no permanent built storage of fuels, oils, lubricants or any other dangerous good in the quarry.

Chemicals for weed spraying be used (but not stored) in the quarry. They will be handled, used and disposed of in accordance with the manufacturer's directions and relevant regulations.

E.6.2 Management Summary

The below aspects of the site and the activity can be summarised for waste management practices:

- Weed spraying chemicals will be handled, used and disposed of in accordance with the manufacturer's directions and relevant regulations;
- When in the quarry, fuel and oil containers will be stored at least 10 m from any drain or sediment pond and will be bunded (moveable bunds) to a capacity at least 1.5 times the volume of the container; and
- One hydrocarbon spill kit will be stored at the quarry to use in the event of a spillage. Staff will be trained in how to use the kit and the kit will be replaced as and when required.

E.8 EUROPEAN CULTURAL HERITAGE

There are no places listed on the Tasmanian Heritage Register (THR) or Tasmanian Historic Places Inventory (maintained by Heritage Tasmania) in the area to be quarried or Mining Lease.

Vibration is a potential impact to the regional heritage listed structures which are shown in Figure D-11. The nearest listed feature is an old convict quarry – this feature is not sensitive to ground vibration.

Woolpack Inn (near the Breadalbane roundabout and the new Midland Highway section) is the next nearest structure. Strathroy Bridge (still in use by heavy vehicles which cause substantial vibrational forces) is more than 2km from the maximum quarry extent.

As noted in section E.4.9 Noise – Vibration Management Summary, the below aspects of the site and the activity can be summarised to indicate that vibration emissions of the activity are very likely to be acceptable to the local conditions:

- Utilise a charge mass of 35 kg/delay for initial development blasts;
- Blast design should incorporate a minimum stemming depth of 3 m; and

¹² Commitment 12: Waste generated by workers from general refuse (eg lunch wrappers) at the quarry will be collected in waste bins provided on-site for general refuse. These will be emptied at least once per fortnight and the material disposed of at a permitted refuse disposal site.

- Develop site-specific scaled regressions for the site via spatially varied monitoring of blasting. For south-west extent, out to the maximum extent of the quarry, adjust charge mass/delay levels in accordance with results from site-specific scaled regressions once within 400 m of receiver locations (receivers 1 and 9).

The blasting to be conducted at the Cocked Hat Hill Quarry is very unlikely to cause any detrimental impact to the structural integrity of historic buildings and other features.

E.9 ABORIGINAL HERITAGE

The *Aboriginal Relics Act 1975*, provides legislative protection to Aboriginal heritage sites in Tasmania regardless of site type, condition, size or land tenure. Section 14(1) of the Act states that; Except as otherwise provided in this Act, no person shall, otherwise than in accordance with the terms of a permit granted by the Minister on the recommendation of the Director of National Parks and Wildlife:

- destroy, damage, deface, conceal or otherwise interfere with a relic;
- make a copy or replica of a carving or engraving that is a relic by rubbing, tracing, casting or other means that involves direct contact with the carving or engraving;
- remove a relic from the place where it is found or abandoned;
- sell or offer or expose for sale, exchange, or otherwise dispose of a relic or any other object that so nearly resembles a relic as to be likely to deceive or be capable of being mistaken for a relic;
- take a relic, or permit a relic to be taken, out of this State; or
- cause an excavation to be made or any other work to be carried out on Crown land for the purpose of searching for a relic.

If a relic is suspected and/or identified during works then works must cease immediately and the Tasmanian Aboriginal Land and Sea Council and the Aboriginal Heritage Tasmania be contacted for advice before work can continue. If damage to an Aboriginal heritage site is unavoidable a permit under section 14 of the *Aboriginal Relics Act 1975* will be applied for by the quarry operator.

A copy of the **Unanticipated Discovery Plan** (Attachment 8) will be on hand during ground disturbing works to aid the quarry operator in meeting the requirements under the Act if Aboriginal heritage were to be uncovered¹³.

E.10 WEED MANAGEMENT

A Weed and Pathogen Management Plan will be developed and implemented as part of the quarry operation¹⁴. The objectives of the Weed and Pathogen Management Plan (WPMP) should be based on the following:

- record and map the occurrence of weeds within the Lease, with a focus on those areas actively being quarried;
- identify and implement management measures within the Lease to –

¹³ Commitment 13: A copy of the *Unanticipated Discovery Plan* (Attachment 8) will be on hand during ground disturbing works to aid the quarry operator in meeting the requirements under the Act if Aboriginal heritage is uncovered.

¹⁴ Commitment 14: A Weed and Pathogen Management Plan will be developed and implemented as part of the quarry operation.

- minimise the risk of spreading propagules of weeds within the Lease and to locations outside the Lease;
- control and/or eradicate weeds where practicable;
- ensure that rehabilitation works are not compromised by the occurrence or growth of weeds; and to
- minimise the risk of introducing soil-borne pathogens into the Lease.
- monitor and review the results of on-ground actions as required;
- describe a process to enable the periodic importation of clean-fill into the quarry to aid quarry rehabilitation/operation; and to
- establish a mechanism to review the plan, including its objectives and implementation.

The objectives, responsibilities and management actions of the WPMP will need to adapt to new information about the site as it becomes available. The Plan will be reviewed as required with versions of the Plan provided to the Environment Protection Authority.

The early detection of any weeds that enter the Mining Lease is important to ensure that any control or eradication program has the highest likelihood of success. A survey to identify new incursions of weed species should be conducted at appropriate intervals which should be described in the WPMP.

E.10.1 Weed Spraying Program

A targeted Weed Spraying Program will be developed in consultation with a weed spraying contractor whom implement the program. The program will be reviewed each year and updated as new information about the occurrence of weeds become available. The guidance offered by the DPIPW issued 'Guideline for Safe and Effective Herbicide Use near Water' should be applied during weed spraying activities.

E.10.2 Heavy Machinery Washdown

Transport trucks and light vehicles pose less risk to the transportation of weed propagules if they remain on the hard surface of the roads and the gravel loading area and that these areas are well managed to exclude weeds.

The highest risk of transporting propagules into the quarry is from heavy machinery, such as excavators, as these can carry large clods of dirt and mud in which seed propagules can be lodged. Wherever possible heavy machinery will be brought into the quarry and surrounds in a clean condition; free of weed propagules, clods of dirt and vegetative matter.

The exact location of any required washdown site in the quarry should be decided by the contractor, or their supervisor, on the following criteria:

- Stormwater settlement ponds or areas designed for the capture of runoff from roads should be preferentially used for washdown if they are practical to access;
- If stormwater settlement ponds are not readily accessed, ensure washdown is conducted as close as possible to the source of the material being removed;
- Ensure run-off does not directly enter a watercourse or waterbody, a 30-m buffer from any waterway or waterbody is desirable;
- Select a mud-free location (e.g. well grassed, gravel) which is gently sloped to drain effluent away from the washdown area;
- Allow adequate space to safely move tracked vehicles and allow safe vehicle access around the heavy machinery; and

- Pay attention to potential hazards near or at the washdown site (e.g. overhead powerlines, powerpoles and fences).

If there will be large quantities of effluent or there is a risk of extensive run-off, the washdown area should be bunded and a sump constructed to safely dispose of the effluent.

For each of the washdown sites the following prescriptions will be applied: Note: Do NOT apply water to equipment that may be damaged by water.

1. Locate washdown site as close as possible to the source of the materials being removed, and prepare the surface or construct bunding as required.
2. Safely park the vehicle free of any hazards (e.g. electrical), ensure the engine is off and the vehicle is immobilised.
3. Look over the vehicle, inside and out, for where dirt, plant material including seeds are lodged. Pay attention to the underside of the vehicle, radiators, spare tyres, foot wells and bumper bars.
4. Remove any guards, covers or plates if required, being careful of any parts that may cause injury.
5. Knock off large clods of mud, use a crow bar if required and sweep out the cabin.
6. Brush off dried plant material like weed seeds and chaff in radiators and other small spaces where this material lodges.
7. Clean down with a high-pressure hose (using potable drinking water) and stiff brush/crowbar.
8. Start with the underside of the vehicle, wheel arches, wheels (including spare). Next do the sides, radiator, tray, bumper bars etc and finally upper body.
9. Clean associated implements, e.g. buckets.
10. Check there is no loose soil or plant material that could be readily dislodged or removed.
11. Wash effluent away from the machinery; do not drive through wash effluent.

Contractors should keep a log book of where and when they wash down machinery, and of where they then took the machinery. These data are useful in ensuring that checks are made of the washdown locations if any undesirable plants become established in these locations.

E.11 FLORA AND FAUNA

E.11.1 Vegetation

No specific management, mitigation or offset measures are proposed.

E.11.2 Threatened Flora Species

No specific management, mitigation or offset measures are proposed.

E.11.3 Threatened Fauna Species

Tasmanian Devil and Eastern barred bandicoot

No specific management, mitigation or offset measures are proposed.

E.12 SITE CONTAMINATION

The area for which the quarry is proposed has not been used for the storage or disposal of contaminated wastes including rock and soil.

No soil/contaminant surveys or investigations are required.

E.13 HEALTH AND SAFETY

The proposed quarry infrastructure and management measures to mitigate dust/stormwater will result in minimal risk to public health from this proposal.

Proposed management measures and infrastructure includes:

- stormwater runoff treatment;
- fuel and oil storage and transport; and
- noise management to a safe level both on and off the site area.

E.14 COASTAL ZONE

No part of the extractive industry lies within 300 metres of the coast. There will be no impact to the coastal zone from the quarry development.

E.15 MARINE AREAS

There will be no impact to marine areas from the quarry development.

E.16 TRAFFIC

Trucks are proposed to exit the Access Road onto Hobart Road (Figure D-2). The Access Road is located on private freehold land. The location of the quarry has quick and efficient access to many of the major road networks around Launceston (Figure D-2) including three main highways – Bass, Midland and Tasman.

The potential impacts from traffic movements on dust generation and noise emissions (and proposed mitigation measures where they are considered necessary to mitigate the risks) are provided in section E1 (Dust Emissions) and E4 (Noise Emissions) respectively.

PART F - DECOMMISSIONING AND REHABILITATION

It is the aim of Mt Oriel Breadalbane Pty Ltd to minimise the area of land 'open' at the quarry.

Mining Lease 1958P/M allows for 19 hectares of land to be unrehabilitated at any one time – this covers both the proposed Cocked Hat Hill Quarry and the existing McGrath Quarry. The current unrehabilitated area within McGrath Quarry is approximately 9.5 hectares, which enables 9.5 hectares of the approved unrehabilitated to be available for the development of the Cocked Hat Hill Quarry.

The Cocked Hat Hill Quarry will be, at full extent and without any rehabilitation, 11 hectares of disturbed land. Technically, rehabilitation would not need to commence until many years into the activity as there is a large area of land (about 9.5 hectares) available to be open under the terms of the mining Lease – assuming only small areas concurrently opened at McGrath Quarry.

Like any quarry, the operator will need to manage the ratio of area disturbed/ rehabilitated to remain within the terms of the Mining Lease. This is not overly complicated given recent advances in aerial imagery and surveying techniques to calculate areas 'open'.

When closed, the Cocked Hat Hill Quarry will be returned to agricultural pasture which is the current land use.

F.1 PROGRESSIVE REHABILITATION

'Progressive rehabilitation' will apply at the quarrying operation for those areas that have been quarried and are no longer needed or used for the operation of the quarry¹⁵. Progressive rehabilitation refers to the rehabilitation of worked out, or surplus areas, while extractive operations are ongoing. It is an important component of quarry management, particularly where the pit is large or expanding. Progressive rehabilitation includes the stabilisation of the landform prior to revegetation and serves to ensure landform stability and revegetation on an ongoing basis.

The main aims of rehabilitation work are to:

- achieve long term stabilisation of all worked out areas to minimise ongoing erosion;
- revegetate all worked out areas with appropriate agricultural pasture coverage; and
- ensure that worked out areas are safe for future land uses.

It may be several years before any areas are available for rehabilitation given the Mine Plan.

When possible, the rehabilitation of areas that are no longer being quarried or used for another purpose (such as a stockpile holding area, truck turning bay etc.) will be based on the following principles to re-establish agricultural pasture:

1. Benches ripped or cracked prior to substrate addition.
2. Stockpiled weathered gravel, topsoil (from quarry site) and sediment collected from sediment interceptors applied to prepared benches.
3. Application of pasture seed and fertiliser (if required).
4. Monitoring of the following factors –
 - a. weed infestation;
 - b. pasture growth success; and
 - c. landform stability.
5. Remedial works which may include but not necessarily be limited to –

¹⁵ Commitment 15: 'Progressive rehabilitation' will apply at the quarrying operation for those areas that have been quarried and are no longer needed or used for the operation of the quarry.

- a. weed control works;
- b. additional pasture seed spreading;
- c. landform stabilisation works; and
- d. erosion control measures and/or repair works.

F.2 PERMANENT CLOSURE

F.2.1 Planning

In the event of permanent closure of the facility prior to complete extraction of the resource a detailed Decommissioning and Rehabilitation Plan (DRP) will be developed and submitted to the EPA for approval¹⁶.

The DRP should include discussion and processes to:

- Facilitate the orderly and safe removal of machinery and other equipment;
- Establish sufficient and appropriate pasture cover to minimise the risk of dust generation and soil erosion; and
- Establish a monitoring regime that assesses the success or otherwise of the rehabilitation to agreed (MRT, EPA, and Mt Oriel Breadalbane Pty Ltd) sign-off parameters.

F.2.2 Final Bench Form and Slopes

Specific attention will be given to the final form of benches and slopes in the DRP. Face height and bench width at the closure of the quarry will be dictated by practical and economic considerations.

The DRP will consider the following principles:

- Toward the end of the productive life of a high face, intermediate benches may be constructed thereby cutting the existing face in half, or into 3 lifts if necessary, to give a maximum final face height between benches of 5 metres. Lower face heights (e.g. < 5 metres) are preferable for final rehabilitation of the site, because they will be screened more quickly by establishing vegetation (in this case, pasture);
- Slopes and faces should be battered back, preferably to slopes of 3 to 1 or less, or approximately 20° (36%), which will be more likely to hold topsoil and seed without slumping; and
- Where batters are slumping, the toe of the slumped area should be shored up and allowed to drain using rocks or log crib- work or other form of landslip prevention work. Expert advice may need to be sought where slumping occurs.

¹⁶ Commitment 16: In the event of permanent closure of the facility prior to complete extraction of the resource a detailed Decommissioning and Rehabilitation Plan will be developed and submitted to the EPA for approval.

PART G – COMMITMENT SUMMARY

Best practice management is important to the project proponent to minimise the risk of environmental nuisance/harm from the activity.

In the preceding Sections of this DPEMP, the potential environmental effects which may arise from the activity have been detailed and, where appropriate, actions documented to prevent and or minimise potential adverse impacts.

The commitments made by the proponent are summarised in Table 4.

Table 4. Commitment Summary

Number	Commitment	Timeframe
1	Standard industry practice for dust control, which will be applied at the activity, is to dampen material prior to crushing and/or to also have installed sprayers on the output chute to minimise dust emissions from an otherwise dry product.	Ongoing from project commencement
2	General measures that will be used to suppress dust if it does occur include the following industry environmental practices for quarries: • Watering of internal roads as required during dry and windy conditions; • Retention of shelterbelt vegetation along the access road corridor where possible; • Retention of shelterbelt vegetation, where feasible, around the quarry working area to reduce the likelihood of strong winds liberating fine particles into the air; • Covering of trucks with tarpaulins and/or load dampening; and • Minimising the geographic extent of areas of exposed soil.	Ongoing from project commencement
3	No chemicals, fuels or oils will be stored on site overnight, and refuelling of quarry equipment will be carried out using a mobile bund.	Ongoing from project commencement
4	Sediment accumulation rates in the formal sediment basin will be monitored and the maintenance program revised as required. Accumulated sediment will be reused as part of the saleable product or for application onto disused areas as part of site rehabilitation.	Constructed within 2 months of project commencement, monitoring ongoing from project commencement
5	Machinery will be well maintained to minimise the risk of generating excessive noise emissions.	Ongoing from project commencement
6	Operating hours will be - • 0600 to 1900 hrs Monday to Friday • 0800 to 1600 hrs on Saturday	Ongoing from project commencement

	• Closed on Sunday and public holidays (those gazetted Statewide). The following tasks will be limited to the hours stipulated. <i>Drilling and blasting</i> • 0800 and 1700 hrs Monday to Friday • Closed on Sunday and public holidays (those gazetted Statewide). <i>Crushing/Screening</i> • 0700 to 1700 hrs Monday to Friday • Closed on Sunday and public holidays (those gazetted Statewide). <i>Hauling (Including loading)</i> • 0700 to 1900 hrs Monday to Friday • 0800 to 1600 hrs on Saturday • Closed on Sunday and public holidays (those gazetted Statewide).	
7	Utilise a charge mass of 35 kg/delay for initial development blasts.	Initial blasts
8	Blast design should incorporate a minimum stemming depth of 3 m.	As required.
9	Increase to 50 kg/delay once high wall blasting is established with blast design to incorporate minimum front row burden of 3 m. Additionally, ensure that blast design allows for the high wall face to be oriented away from critical receiver locations (receiver locations 1, 2 and 9 in Figure 1 of Attachment 7 – being proposed or constructed dwellings at 775, 803 and 805 Hobart Road) as far as practically possible.	As required
10	For the south-west section of the quarry, out to the maximum south-western extent of the quarry, adjust charge mass/delay levels in accordance with results from site-specific scaled regressions once blasting is to occur within 400 m of receiver locations (receivers 1 and 9 – being proposed/constructed dwellings at 803 and 805 Hobart Road).	When required
11	No machinery servicing, except for emergency repairs or service requirements, will be conducted within the quarry. Wastes generated from machinery repairs will be disposed of in an appropriate bin located near the site office for future disposal at a permitted refuse disposal site.	Ongoing from project commencement
12	Waste generated by workers from general refuse (eg lunch wrappers) at the quarry will be collected in waste bins provided on-site for general refuse. These will be emptied at least once per fortnight and the material disposed of at a permitted refuse disposal site.	Ongoing from project commencement
13	A copy of the <i>Unanticipated Discovery Plan</i> will be on hand during ground disturbing works to aid the quarry operator in meeting the requirements under the Act if Aboriginal heritage is uncovered.	Ongoing from project commencement

14	A Weed and Pathogen Management Plan will be developed and implemented as part of the quarry operation.	Plan implemented within 2 months of project commencement and then ongoing as required by the Plan
15	'Progressive rehabilitation' will apply at the quarrying operation for those areas that have been quarried and are no longer needed or used for the operation of the quarry.	Ongoing as required/permitted
16	In the event of permanent closure of the facility prior to complete extraction of the resource a detailed Decommissioning and Rehabilitation Plan will be developed and submitted to the EPA for approval.	Within 60 days of permanent cessation of the quarry

PART H – ATTACHMENTS

- | | |
|---------------|--|
| Attachment 1 | Development Proposal and Environmental Management Plan. Project Specific Guidelines for Mt Oriel Breadalbane Pty Ltd Cocked Hat Quarry Mt Oriel, Breadalbane |
| Attachment 2 | Land Title |
| Attachment 3 | Minutes – Northern Midlands Council - September 2010 |
| Attachment 4 | Draft Blast Management Plan – Cocked Hat Hill Quarry |
| Attachment 5 | Traffic Impact Assessment (Traffic Engineering and Road Safety) |
| Attachment 6 | Erosion control assessment and sediment basin concept design |
| Attachment 7 | Cocked Hat Hill quarry - environmental noise, ground vibration and air blast overpressure assessment |
| Attachment 8 | Unanticipated Discovery Plan – Aboriginal Heritage Tasmania |
| Attachment 9 | Technical memo – Proposed dwelling at 805 Hobart Road Breadalbane |
| Attachment 10 | House location for 805 Hobart Road, Breadalbane |

Attachment 1 Development Proposal and Environmental Management Plan. Project Specific
Guidelines for Mt Oriel Breadalbane Pty Ltd Cocked Hat Quarry Mt Oriel, Breadalbane

Development Proposal and
Environmental Management Plan
Project Specific Guidelines

for

Mt Oriel Breadalbane Pty Ltd

Cocked Hat Quarry

Mr Oriel, Breadalbane

Board of the Environment
Protection Authority
February 2017



1. General

This document identifies the key issues that need to be addressed in the Development Proposal and Environmental Management Plan (DPEMP) for Mt Oriel Breadalbane Pty Ltd's, Cocked Hat Quarry.

This document should be read in conjunction with the *General Guidelines for the preparation of a Development Proposal and Environmental Management Plan* (<http://epa.tas.gov.au/regulation/guidance-documents>), which provides general information on preparing a DPEMP.

While the DPEMP should evaluate all potential effects of the proposal, the DPEMP should be principally focused on the key issues identified below. The level of detail provided on other issues should be appropriate to the level of significance of that issue for the proposal.

This document identifies the minimum survey requirements and studies required as part of the DPEMP in relation to the key issues.

This document should not be interpreted as excluding from consideration other matters deemed to be significant or matters that emerge as significant from environmental studies, public comments or otherwise during the course of the preparation of the DPEMP.

This document has been prepared on the basis of a Development Application.

2. Key Issues

The key issues that have been identified for consideration in relation to the proposal, and which should be the principal focus of the DPEMP, are as follows:

Key issue	
1	Noise generated by activities occurring on the land, including drilling, crushing, screening, and transportation to and from the land.
2	Blasting impacts.
3	Dust Impacts
4	Stormwater Management

3. Survey and Study Requirements

The following surveys and studies will be required as part of the DPEMP in relation to the key issues. The relevant sections of the DPEMP General Guidelines are also identified.

Key Issue	Survey and study requirements for DPEMP	Relevant section of DPEMP General Guidelines
1. Noise generated by on-site activities	- Noise modelling for each phase of the development identifying the 30, 35, 40 and 45 dB(A) noise contours and predicted noise levels at each sensitive premise potentially affected. - Noise survey of current noise levels in the area relevant to the potential zone of noise impact.	6.4
2. Ground vibration and air-blast overpressure	- Prediction of blast peak particle velocity at residences within 1.2 km. - Contours for peak particle velocity of 2.5, 5, 7.5 and the 10mm/s. - Prediction of air-blast overpressure at residences within 1.2 km. - Contours for air-blast overpressure of 110, 115 and 120dB (Lin Peak).	6.4
3. Dust	Identification of sensitive receptors including adjacent agricultural activities, all major dust sources in the area relevant to the potential zone of dust impact, the identified receptors and an estimation of the relative impact of the proposed activity	6.1
4. Stormwater	Identification of proposed onsite and any offsite storm water treatment facilities, potential stormwater flow paths including any combined flow from adjacent pits, to surface water discharge point(s)	6.2

4. Detailed Requirements for the DPEMP

The following DPEMP requirements are in addition to the requirements of the DPEMP General Guidelines. These additional requirements are grouped under the relevant section number corresponding to the DPEMP General Guidelines.

2.1 General

In addition to the matters stipulated in Section 2.1 of the DPEMP General Guidelines the DPEMP must contain the following:

- Statement on the expected life of the quarry.
- A description of adjacent quarrying operations (including the Stornaway pit) and any arrangements regarding shared access, blast scheduling, emission control etc.
- Planned operating hours on the site, rates of extraction and production, number of blasts and estimated number of product haulage truck movements per day.

- Description of chosen method(s) for quarrying and processing of target material, including all major items of equipment to be used (e.g. crushers, screens, rock breakers, dozers, haulage trucks, drill etc.).
- Location and dimensions of any dams or sediment ponds and storm-water management infrastructure. Any off site infrastructure that may be used must be detailed.

2.5 Site Plan

In addition to the matters stipulated in Section 2.5 of the DPEMP General Guidelines the DPEMP must contain the following:

- A map showing the location of the mining lease.
- A quarry plan which includes, but not necessarily be limited to; the direction of quarrying, bench heights, working face(s), location of all major items of equipment (e.g. crushing machinery, rock breakers etc.), location of rock dumps, product storage areas, sediment treatment ponds and internal haul roads. The plan should detail separation distance between pits, retained wall heights and any connections, such as culverts or shared access roads between the proposed and existing pit
- Site plan or map(s) depicting the access routes to both the proposed and existing adjacent pits as well as the pit operated by Stornoway to the south.
- Identification of areas to be progressively rehabilitated during the quarries operating life.
- Plan of the site drainage, including principle discharge points from the activity to the receiving environment, either directly or via the adjacent existing pit, natural drainage features, drains and sediment ponds.
- Location of any historical workings that may affect quarry planning.

6.1 Air Emissions

In addition to the matters stipulated in Section 6.1 of the DPEMP General Guidelines the DPEMP must contain the following:

- Description of the potential for dust to be generated from quarrying operation on site, from road surfaces and from vehicle entrainment as a result of transporting raw material from the site.
- Survey of all major sources of dust in the area relevant to the potential zone of dust impact.
- Measures to minimise the potential impact of dust generated by the proposal, such as watering or sealing of roads, covering of truck loads, reduced vehicle speed, and road maintenance.
- Consideration of the potential cumulative impact of increased quarry activity and shared road usage on dust production and management with respect to identified sensitive receptors, including neighbouring agricultural activities

6.2 Surface Water Quality

In addition to the matters stipulated in Section 6.2 of the DPEMP General Guidelines the DPEMP must contain the following:

- A description of the receiving environment for site runoff and the potential cumulative impact upon that receiving environment.
- Identify any shared drainage and sediment control infrastructure with the adjacent pit.
- Management measures to prevent sediment movement into water courses. This should include contingencies in case control measures fail, e.g. a breach of a sediment pond during heavy rainfall or flooding.

- Estimation of volume of runoff from the site, the capacity of the sediment pond(s) and expected detention time(s). If off-site infrastructure is a component of the proposed sediment mitigation then combined catchments and management aspects must be detailed.

6.4 Noise Emissions

In addition to the matters stipulated in Section 6.4 of the DPEMP General Guidelines the DPEMP must contain the following:

Operational noise

- A noise survey of current noise in the area including measurements of sound level at noise sensitive receptors. Major existing sources of noise in the area should be identified.
- Description of all proposed major noise sources (fixed and mobile), e.g. any equipment such as a rock drill, rock breaker, crusher, screener, and activities and activities such as handling of material (i.e. loading and transportation of the material within the land). Provide details of make, model, engine power ratings, throughput capacity, planned hours of operation and associated noise attenuation.
- Details of the sound power output levels for all major sources of noise associated with the proposal.
- Topographical maps and area plans showing the current and future proposed locations of all major noise sources associated with the proposal; potentially affected residences (showing precise distances between quarry and any noise sensitive areas for each stage of the proposal). Any other sensitive receptors, that may be affected by the proposal, should be included in the discussion.
- Noise modelling for each phase of the development identifying the 30, 35, 40 and 45 dB(A) noise contours and predicted noise levels at each sensitive premise potentially affected.
- Operating hours, and details regarding expected duration (in days over the course of 12 months) of use of all major noise generating equipment on site.
- Any proposed measures to mitigate noise impacts.
- For all potential noise sensitive receptors an assessment of the potential for the activity to cause a noise nuisance at any period during the life of the quarry, taking into account the noise survey data, all the required modelling results, and potential cumulative noise emissions associated with all noise generating activities identified in the area. The relative impact of the proposed activity at each noise sensitive receptor compared with other identified noise generating activities should be discussed.

Blasting

- Proposed blasting scheme, including blast size and intended blast frequency.
- Prediction of blast peak particle velocity at residences within 1.2 km.
- Provide a map showing contours for peak particle velocity of 2.5, 5, 7.5 and the 10mm/s.
- Prediction of air-blast overpressure at residences within 1.2 km.
- Provide a map showing contours for air-blast overpressure of 110, 115 and 120dB (Lin Peak).
- A discussion of the potential cumulative frequency of blasting from all quarries within the area.
- An assessment of blasting impacts on identified residences and other noise and vibration sensitive activities, taking into account cumulative aspects of blasting in the region.

6.7 Biodiversity and Natural Values

In addition to the matters stipulated in Section 6.7 of the DPEMP General Guidelines, the DPEMP must address the following:

- There are records in the area for flora listed under the *Threatened Species Protection Act 1995* (TSPA) and/or *Environment Protection and Biodiversity Conservation Act 1999* that may have potential habitat on the property in question. These include the grassland species *Pultenaea prostrata*, *Tricoryne elatior*, *Triptilodiscus pygmaeus* and *Velleia paradoxa* all listed as vulnerable under the TSPA. It is recommended that the property be surveyed by a suitably qualified person in accordance with the Guidelines for Natural Values Assessments. The guidelines can be found at: <http://dpipwe.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>

6.10 Heritage

In addition to the matters stipulated in Section 6.10 of the DPEMP General Guidelines, the DPEMP must contain the following:

- A map showing the location of any place listed on the Tasmanian Heritage Register within or at approximately 2km of the proposal. This should include Strathroy Bridge (THR#4387). The potential for any impacts upon any listed site as a result of blasting should be discussed.

6.11 Land Use and Development

In addition to the matters stipulated in Section 6.11 of the DPEMP General Guidelines, the DPEMP must contain the following:

- A discussion of impacts to adjacent residential, commercial, agricultural and tourist activities, potential future uses and impacts to those existing and potential future uses.

6.19 Cumulative and interactive impacts

In addition to the matters stipulated in Section 6.19 of the DPEMP General Guidelines, the DPEMP must contain the following:

- An overview of all identified potential cumulative impacts and summary of the relative impact of the proposed quarry with respect to impacts associated with other activities.

6.0 Traffic Impacts

In addition to the matters stipulated in Section 6.20 of the DPEMP General Guidelines, the DPEMP must contain the following:

- Information on traffic associated with the proposal; vehicle type, expected tonnages and any alternative access roads (routes).
- Maximum number of vehicle movements per day.
- Discussion of the potential impacts to nearby residences (noise and dust) due to vehicle movements to and from the site.
- Cumulative impacts associated with shared use of the access to the proposed pit by other nearby pits
- Details of management measures proposed to mitigate any adverse effects due to traffic.

Attachment 2 Land Title

FILE NUMBER Y20423 GRANTEE PART OF 584 ACRES GTO TO THOMAS SCOTT		CONVERSION PLAN LOCATION CORNWALL - BREADALBANE CONVERTED FROM GL1863 NOT TO SCALE LENGTHS IN METRES		Registered Number P.144549 APPROVED 17 AUG 2005 <i>Alice Kawa</i> Recorder of Titles			
MAPSHEET MUNICIPAL CODE No. 123 (5040)		LAST UPI No. 4700014		ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN		DRAWN NJD	
SKETCH BY WAY OF ILLUSTRATION ONLY "EXCEPTED LANDS"							
 The sketch illustrates Lot 1, a large parcel of 57.16ha. It is bounded by several other lots and a road. To the north and west are lots with survey numbers (S.P.101202) and (S.P.129000). To the east is lot (S.P.117465). To the south is a 'RIGHT OF WAY (CONV. 32/5672)' with a width of 958.57 (2 Bgs.), adjacent to lot (D.32508). Hobart Road is shown at the bottom left, with a 'WIDE ROAD' section. Other dimensions and survey numbers shown include 782.74, 29.77, 673.11 (2 Bgs.), 533.10, 104.21, 102.60, 10.06, and (P.109406). A north arrow points towards the top left.							

SEARCH OF TORRENS TITLE

VOLUME 144549	FOLIO 1
EDITION 1	DATE OF ISSUE 19-Aug-2005

SEARCH DATE : 25-Sep-2016

SEARCH TIME : 01.04 PM

DESCRIPTION OF LAND

Parish of BREADALBANE Land District of CORNWALL
Lot 1 on Plan 144549
Being the land described in Conveyance No.GL1863
Derivation : Part of 584A-0R-0P Gtd to Thomas Scott
Derived from Y20423

SCHEDULE 1

MT. ORIEL BREADALBANE PTY LTD

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
11/1240 CONVEYANCE: Benefiting Easement: Right of Carriageway
over the Road 10.06 wide shown on Plan No.144549
32/5672 CONVEYANCE: Burdening Easement: Right of Carriageway
(appurtenant to Lot 3 on Diagram No.32508) over the
Right of Way shown on Plan No.144549

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

PROPERTY ID: 6393335

MUNICIPALITY: NORTHERN MIDLANDS

PROPERTY ADDRESS: MT ORIEL
833 HOBART RD
BREADALBANE TAS 7258

PROPERTY NAME: MT ORIEL

TITLE OWNER: 144549/1 : MT. ORIEL BREADALBANE PTY LTD

INTERESTED PARTIES: MT. ORIEL BREADALBANE PTY LTD

POSTAL ADDRESS: MOUNT ORIEL
(Interested Parties) 833 HOBART RD
BREADALBANE TAS 7258

MAIN IMPROVEMENTS SUMMARY

Improvements: HSE, CTG, FARM IMPTS
Improvement Sizes **Improvement:** **Area:**
(Top 3 by Size): DUTCH BARN 6000.0 square metres
HOUSE 204.0 square metres
HOUSE 98.0 square metres

**Number of
Bedrooms:**

**Construction Year
of Main Building:** 1950

Roof Material: Galvanised Iron

Wall Material: Weatherboard

Land Area: 57.16 hectares

LAST SALES

Contract Date	Settlement Date	Sale Price
04/11/2004	23/12/2004	\$620,000

LAST VALUATIONS

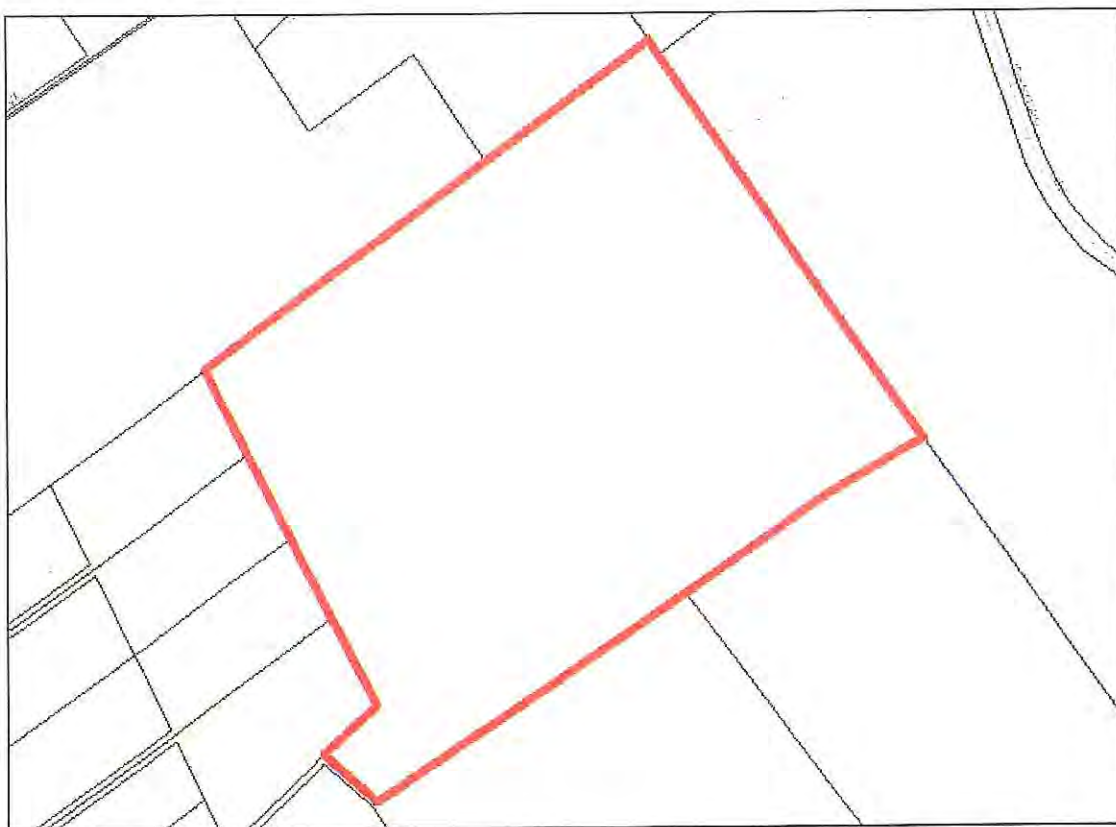
Date Inspected	Levels At	Land	Capital	A.A.V.	Reason
18/10/2012	01/07/2012	\$925,000	\$1,200,000	\$48,000	Revaluation
19/01/2007	01/10/2006	\$622,000	\$870,000	\$34,800	Revaluation

No information obtained from the LIST may be used for direct marketing purposes.

Much of this data is derived from the Valuation Rolls maintained by the Valuer-General under the provisions of the Valuation of Land Act 2001. The values shown on this report are as at the Levels At date.

While all reasonable care has been taken in collecting and recording the information shown above, this Department assumes no liability resulting from any errors or omissions in this information or from its use in any way.

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Explanation of Terms

Property ID - A unique number used for Valuation purposes.

Date Inspected - The date the property was inspected for the valuation.

Levels At - Levels At - or Levels of Valuation Date means the date at which values of properties are determined for all valuations in a Municipal Area.

Land Value - Land Value is the value of the property including drainage, excavation, filling, reclamation, clearing and any other invisible improvements made to the land. It excludes all visible improvements such as buildings, structures, fixtures, roads, standings, dams, channels, artificially established trees and pastures and other like improvements.

Capital Value - Capital Value is the total value of the property (including the land value), excluding plant and machinery.

AAV - Assessed Annual Value. AAV is the gross annual rental value of the property excluding GST, municipal rates, land tax and fixed water and sewerage, but cannot be less than 4% of the capital value.

Interested Parties - This is a list of persons who have been recorded by the Valuer-General as having interest in the property (ie owner or Government agency).

Postal Address - This is the last advised postal address for the interested parties.

Multiple Tenancies - Properties that have multiple tenants are assessed for separate AAV's. e.g. a house and flat.

