Wallaroo Contracting Pty Ltd
Lilla Villa Quarry – Proposed Expansion
Environmental Effects Report

Prepared By: Barry Williams

Date: 27 June 2025

Issue	Date	Recipient	Organisation
Issue 1	12 December 2024		Wallaroo Contracting Pty Ltd
Issue 2	19 December 2024		Environment Protection Authority
Revision 1	27 February 2025		Environment Protection Authority
Revision 2	6 June 2025		Environment Protection Authority

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Abbreviations

EMPC Act – Environmental Management and Pollution Control Act 1994

BCM - Bank Cubic Metres, a measure of solid rock reserves in the ground

GDE -Groundwater dependent ecosystems

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PART A – PROPONENT INFORMATION

TABLE 1: PROPONENT INFORMATION

Entity name	Wallaroo Contracting Pty Ltd
Trading name	Wallaroo Contracting Pty Ltd
Address	P.O. Box 176 BICHENO Tas 7215
ABN	80 105 356 867
Proponent contact	Robert Lyne
Mobile	0428 751 113
Email	admin@wallaroocontracting.com.au

TABLE 2: CONSULTANT INFORMATION

Company name	Integrated Land Management & Planning
Consultant contact	Barry Williams
Mobile	0437 394 492
Email	barry.williams@ilmp.com.au

PART B – PROPOSAL DESCRIPTION

1 DESCRIPTION OF PROPOSED ACTIVITY

TABLE 3: PROPOSAL DESCRIPTION

Activity	Lilla Villa Quarry is a fresh dolerite hard rock quarry. The activity is classified under EMPC Act Schedule 2 as: *5 Extractive Activities* *(a) Quarries: the extraction of 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.*
New or existing	Lilla Villa Quarry has operated under mining lease 1910P/M since 2011. The activity is permitted through Glamorgan Spring Bay Council permit DA 10251 with environmental conditions issued under Permit Conditions Environmental No. 8052.
Product	Blended materials for base and sub-base for road construction Class 1, 2 and 3. Aggregates for road surfacing and for concrete manufacture. With overburden removed the quarry is estimated to have 600,000 BCM in reserves. The solid rock has a bulk density of approximately 2.9 tonnes per cubic metre therefore the quarry can deliver a further 1,740,000 tonnes or around 1,000,000 cubic metres. This equates to a design life of 10 years at maximum annual production rate sought in this application or 25 years at the current maximum rate.
Current permit limits	40,000 cubic metres per year or 64,000 tonnes at a conversion factor of 1.6.
Permit limit sought	100,000 cubic metres per year or 160,000 tonnes using a conversion factor of 1.6.
Methods	Lilla Villa Quarry uses drill and blast techniques to extract and fracture fresh rock. The shot rock is then processed through a contract mobile crusher circuit to produce the various products which are stored on site in stockpiles until required to service clients.
Operational campaigns	Lilla Villa Quarry extracts and processes rock on a campaign style basis. An extractive campaign commences with stripping topsoil and friable overburden from the extractive area. A pattern of holes is drilled to accept the explosive charges and stemming. A shot is initiates which results in an amount of fractured rock (shot rock) on the quarry floor.

<table>
<tr><td></td><td>Depending on the number and depth of the holes drilling may take between two and three weeks. A single shot may liberate 15,000 BCM which is around 43,000 tonnes.

A processing campaign commences when a team of contract crushers bring mobile equipment to site. This equipment will work through the shot rock producing product stockpiles of various sizes and grades of aggregates and gravels.

Processing the shot rock may take between three and four weeks.

This proposal is likely to cause extraction and processing campaigns to increase from two to four per year.</td></tr>
<tr><td>Transport</td><td>Product will be carted from stockpile by on-road trucks travelling on the private access road to Lilla Villa Lane and then onto an existing junction with Tasman Highway. Cartage will respond to demand which is likely to increase during the construction season September to May each year. Cartage will occur during working hours, 7.00 am to 7.00 pm.

<table>
<tr><td>Item</td><td>Amount</td><td>Units</td></tr>
<tr><td>Annual production (m3) max.</td><td>100000</td><td>m3</td></tr>
<tr><td>average bulk density</td><td>1.60</td><td>t/m3</td></tr>
<tr><td>Annual production (t) max.</td><td>160000</td><td>t</td></tr>
<tr><td>Conservative pay load</td><td>39</td><td>t</td></tr>
<tr><td>Loads to cart production</td><td>4103</td><td></td></tr>
<tr><td>Weeks worked per year</td><td>48</td><td></td></tr>
<tr><td>Days worked per week</td><td>6</td><td></td></tr>
<tr><td>Days worked per year</td><td>288</td><td></td></tr>
<tr><td>Adjust for public holidays</td><td>280</td><td></td></tr>
<tr><td>Loads per day</td><td>14.7</td><td></td></tr>
<tr><td>Movements per day (in/out)</td><td>29.3</td><td></td></tr>
</table></td></tr>
<tr><td>Stockpiling</td><td>Lilla Villa Quarry extracts and processes on a campaign style basis. The Operator progressively clears vegetation from an area of ground and uses a dozer and excavator to strip overburden from the source rock. The stripping and overburden are stored in a designated area adjacent to the pit and will remain until required for rehabilitation works.

Periodically a blasting contractor is engaged to drill and blast an area of fresh ground. The result is fractured shot rock on the floor of the pit. Subsequently a crushing contractor is engaged and mobile crushers and screens are mobilised to the site. These machines operate for a period of weeks to further process the shot rock into the various products which are stored on site in product stockpiles.</td></tr>
<tr><td>Areas of disturbance</td><td>Current area of disturbance – 5.75 hectares

Proposed expansion area - 1.80 hectares

Proposed rehabilitation area - 0.55 hectares

Total area disturbed over life - 7.55 hectares</td></tr>
</table>

	Maximum area unrehabilitated - 7.00 hectares
Equipment	This proposal is not seeking to change the types of equipment used.
Major equipment	

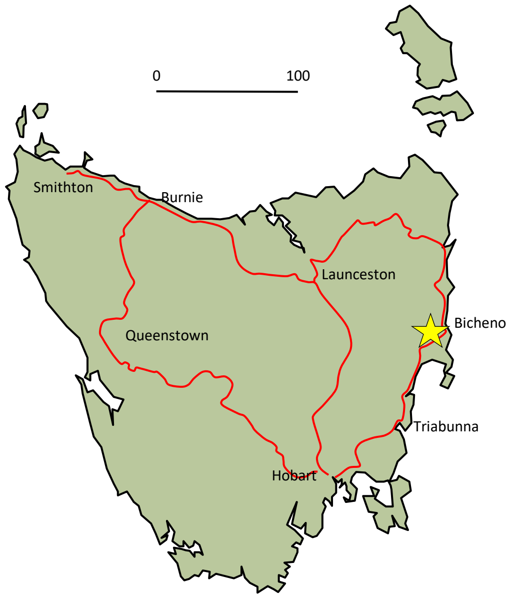
Operation	Equipment	Power (kW)	Sound power dB
Drilling	Mobile drill rig	120	117
Ripping / excavating	Excavator	120	108
Loading / stockpiling	Wheel loader CAT 950K	157	103
Crushing	Primary crusher: J-1175 Cone crusher: C-1540 VSI: Twister-Trac VS350	257 261 403	120
Screening	Screener: Terex-Finlay 883	72	109
Excavator (rock breaker)	Komatsu PC200LC	120	116
Road truck / water cart	various		104

Infrastructure	No permanent buildings are proposed at Lilla Villa Quarry. The existing access road and security gate will be utilised. Current sediment control infrastructure will be enlarged and supplemented to meet current best practice guidelines.

Proposal timeline					
Case for assessment	Case accepted	Advertising	EPA assessment	Council assessment	Permit issued
February 2024	June 2025	July 2025	August 2025	September 2025	October 2025

Operating hours		
	Extraction and processing	Transport
Weekdays	7.00 am to 7.00 pm	7.00 am to 7.00 pm
Saturdays	8.00 am to 4.00 pm	8.00 am to 4.00 pm
Sundays public holidays	No work	No work

1.1 LOCATION AND PLANNING CONTEXT



The quarry site is located approximately 4.0 kilometres southwest of Bicheno off the Tasman Highway. The site is accessed via a Lilla Villa Lane which intersects with the Tasman Highway.

Security is provided by a gate which can be locked when the quarry is not in operation.

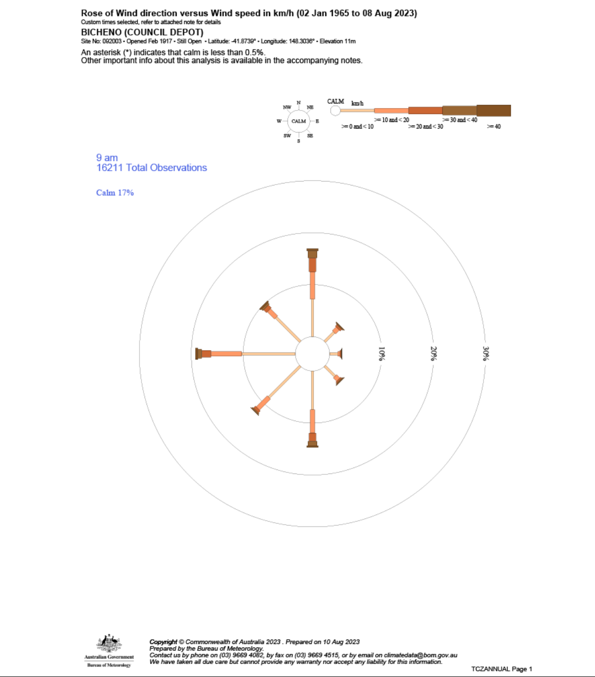
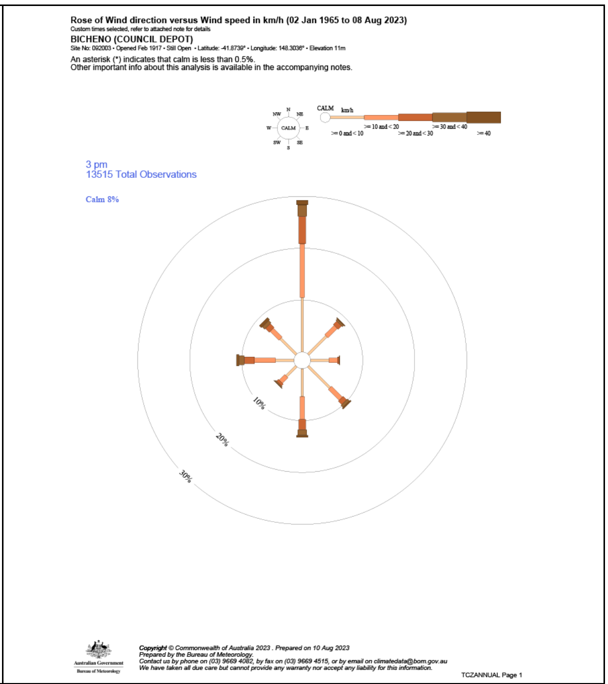
Location	The site is located approximately 4.3 kilometres west of Bicheno.		
Property ID	9371392		
Title Reference	36272/1		
Planning permit	Lilla Villa Quarry currently operates under Planning Permit DA10251 with environmental conditions imposed through Permit Conditions – Environmental No. 8052. Glamorgan Spring Bay Council requested the proponent lodge a development application for council to assess the proposal.		
Land zoning and tenure	Lilla Villa Quarry is situated on private freehold land zoned as 'Rural' under the Glamorgan Spring Bay Local Provisions Schedule.		
Use class and Permissibility	Quarrying is classified as within the 'Extractive Industries' use class. Extractive Industries is a 'Permitted' use in the Rural zone. No rezoning is required.		
Mining lease	1910P/M	Status	granted
Mining lease area	30 hectares		

TABLE 4: DESCRIPTION OF SITE AND SURROUNDS

Land use	Lilla Villa Quarry is situated on a rock ridgeline rising above surrounding land that has been developed for agricultural production. The quarry site land is unsuitable for agricultural purposes due to the rock substrate cropping out. The land surrounding is not irrigated and is used currently for grazing stock (cattle and sheep). Land north of the cadastral and mining lease boundary is under a conservation covenant (14069). The agriculture land use zone is applied to this land and the covenant has two building envelopes, one comprising the weekender dwelling and the other currently has no building. Residential development is discretionary in the agriculture zone.
Topography	The quarry site is situated on the east facing aspect of a low ridgeline adjacent to the flood plain of the Aspley River. The mining lease area ranges from an elevation of 30 metres (AHD[1]) on the east boundary to approximately 50 metres. Dolerite bedrock is cropping out on the top of the ridge. The landform is not a river terrace.
Climate	Nearest weather station recording a full range of data is Bicheno (Council Depot) 092003. (B.O.M. (a), 2024).

Mean Temp.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Max. (^{0}C)	21.5	21.5	20.6	18.9	16.5	14.5	14.1	14.7	16.2	17.4	18.4	20.1	17.9
Min. (^{0}C)	13.1	13.2	12.3	10.4	8.5	6.8	6.2	6.4	7.5	8.6	10.3	11.7	9.6
Mean rainfall													
(mm)	53.9	56.4	57.1	57.9	55.3	61.8	50.8	50.6	44.7	57.5	62.1	68.2	676.2
Mean wind speed													
9am (km/h)	11.5	10.2	9.6	9.7	9.4	8.9	9.2	10.3	11.3	11.3	11.7	11.6	10.4
3pm (km/h)	16.3	15.7	14.0	12.8	10.3	10.1	11.1	12.2	14.1	15.8	15.8	16.2	13.7

[1] AHD – Australian Height Datum (metres above sea level)

	
Predominant wind direction and strongest winds are from the west in the morning.	Predominant wind direction and strongest winds are from the north in the afternoon.

Geology	The quarry is mapped as being located within an area of Cenozoic talus suggesting the formation is derived from the large dolerite formations east and west of the site. This suggests that the source rock consists of alluvial boulders which is contradicted by evidence in extractive operations to date. Faces have the appearance of fresh dolerite becoming less weathered with depth.
Soils	Soils derived on a dolerite substrate are predominantly reddish – brown clay / loam with numerous stones. Topsoil grades to regolith with depth. The regolith varies in thickness because of uneven weathering in the substrate. The organic topsoil is stripped from the surface and stockpiled separately to the subsoil (regolith) which is considered overburden and is also stockpiled for future rehabilitation works. The presence of clay makes the soil moderately susceptible to water erosion.
Hydrology	The mining lease boundary is 130 metres distant from the Apsley River. A tributary to the Apley River cuts through the eastern boundary of the mining lease. The access road to the quarry is outside the mining lease and approaches to within approximately 90 metres of the bank of the Apley River. The Apsley River and the closest tributary are both classified as having an integrated conservation value (ICV) of VH (very high) by the CFEV[2] project.
Natural values	The mining lease area is divided by Lilla Villa Lane. The land west of the lane is mainly mapped as agricultural land (FAG) Land to the east encompasses the low ridge and is mapped as *Eucalyptus amygdalina* forest and woodland on dolerite (DAD) and *Eucalyptus amygdalina coastal* forest and woodland (DAC). The actual

[2] CFEV – Conservation of Freshwater Ecosystem Values project, a nationwide audit of the ecological value of inland waterways.

	quarry disturbance is mapped as extra-urban miscellaneous (FUM) and regenerating cleared land (FRG).
Ecological survey	To better understand the natural values implications of the proposed expansion of Lilla Villa Quarry the Operator commissioned a Natural Values Assessment by Environmental Consulting Options Tasmania (ECOtas). The assessment included a field survey of the site on 26 September 2024 and the report was made available 25 October 2024 and subsequently updated February 2025 (ECOtas, Oct 2024 updated Feb 2025). The report is reproduced in full as Appendix 1 and is summarised below. The report includes a report prepared from the Natural Values Atlas in the appendices.

2 Maps and site plans

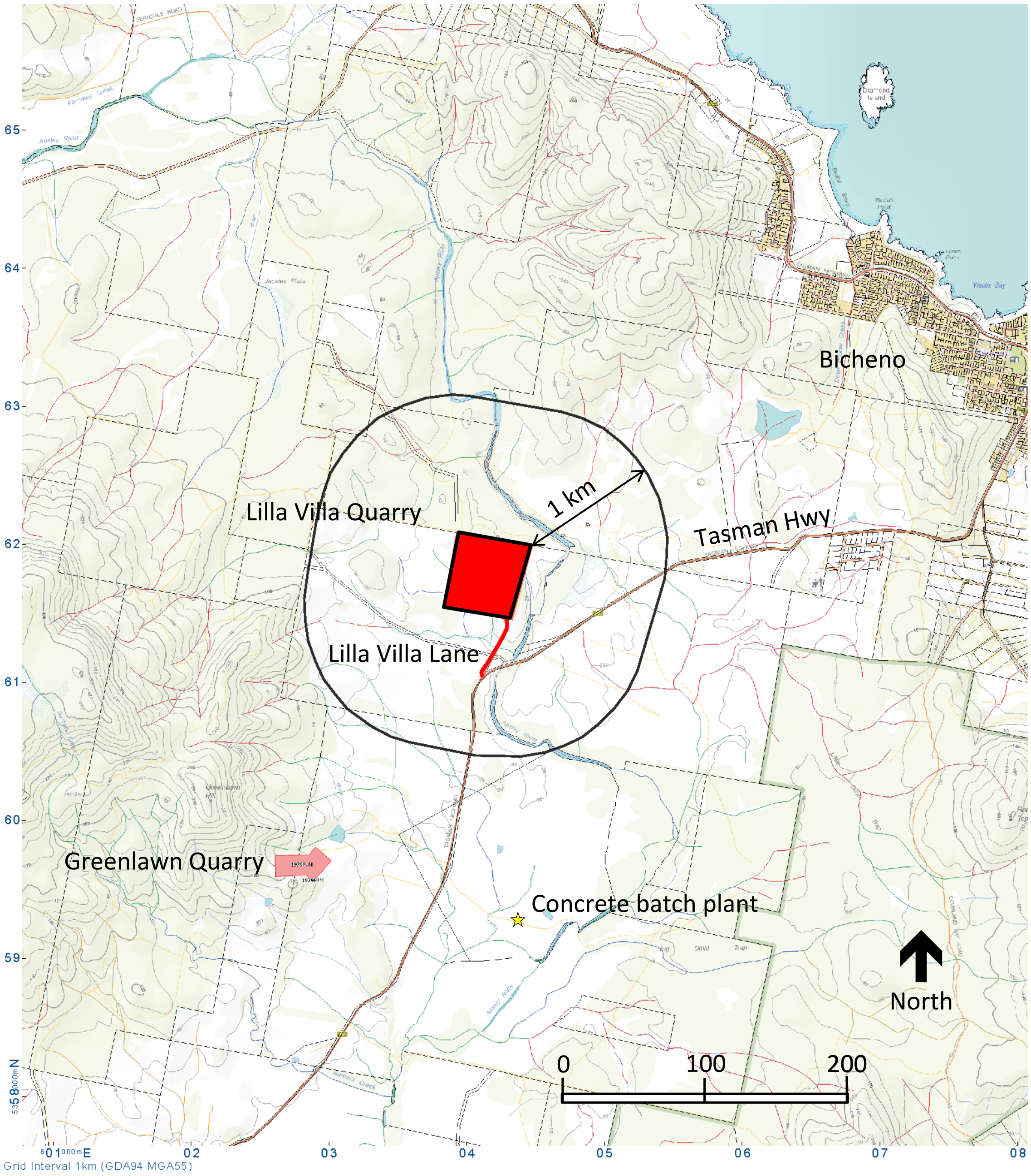


Figure 1: Location map (extract The LIST)

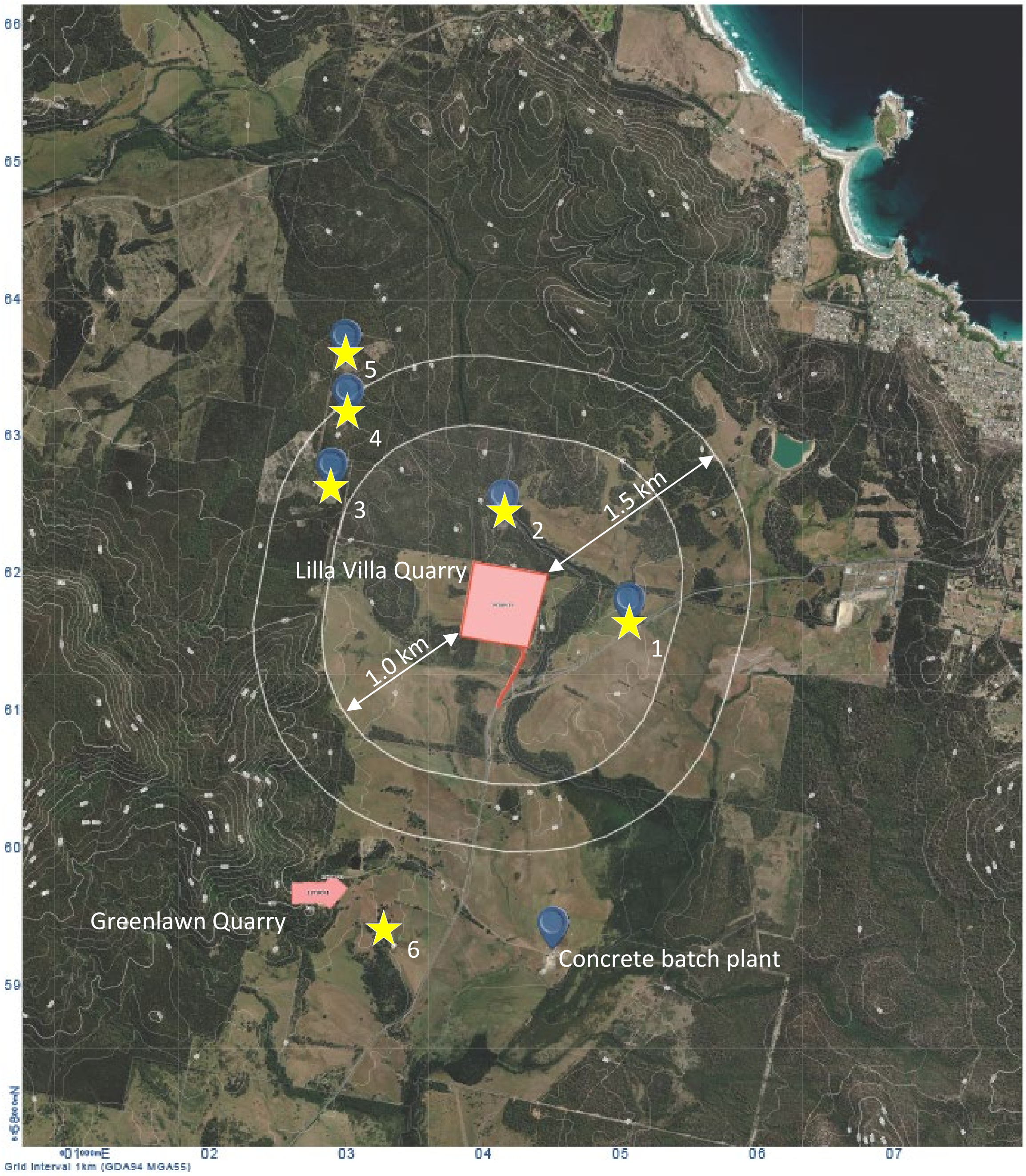


FIGURE 2: POTENTIAL SENSITIVE USES

TABLE 5: SEPARATION DISTANCE TO POTENTIAL SENSITIVE USES

Number	Address	Separation distance (m)
1	17010 Tasman Highway, Bicheno (related to quarry operator).	675
2	110 Lilla Villa Lane, Bicheno	305
3	251 Lilla Villa Lane, Bicheno	1,135
4	220 Lilla Villa Lane, Bicheno	1,395
5	340 Lilla Villa Lane, Bicheno	1,715
6	17010 Tasman Highway “Greenlawn” Bicheno (related to quarry operator).	2,220

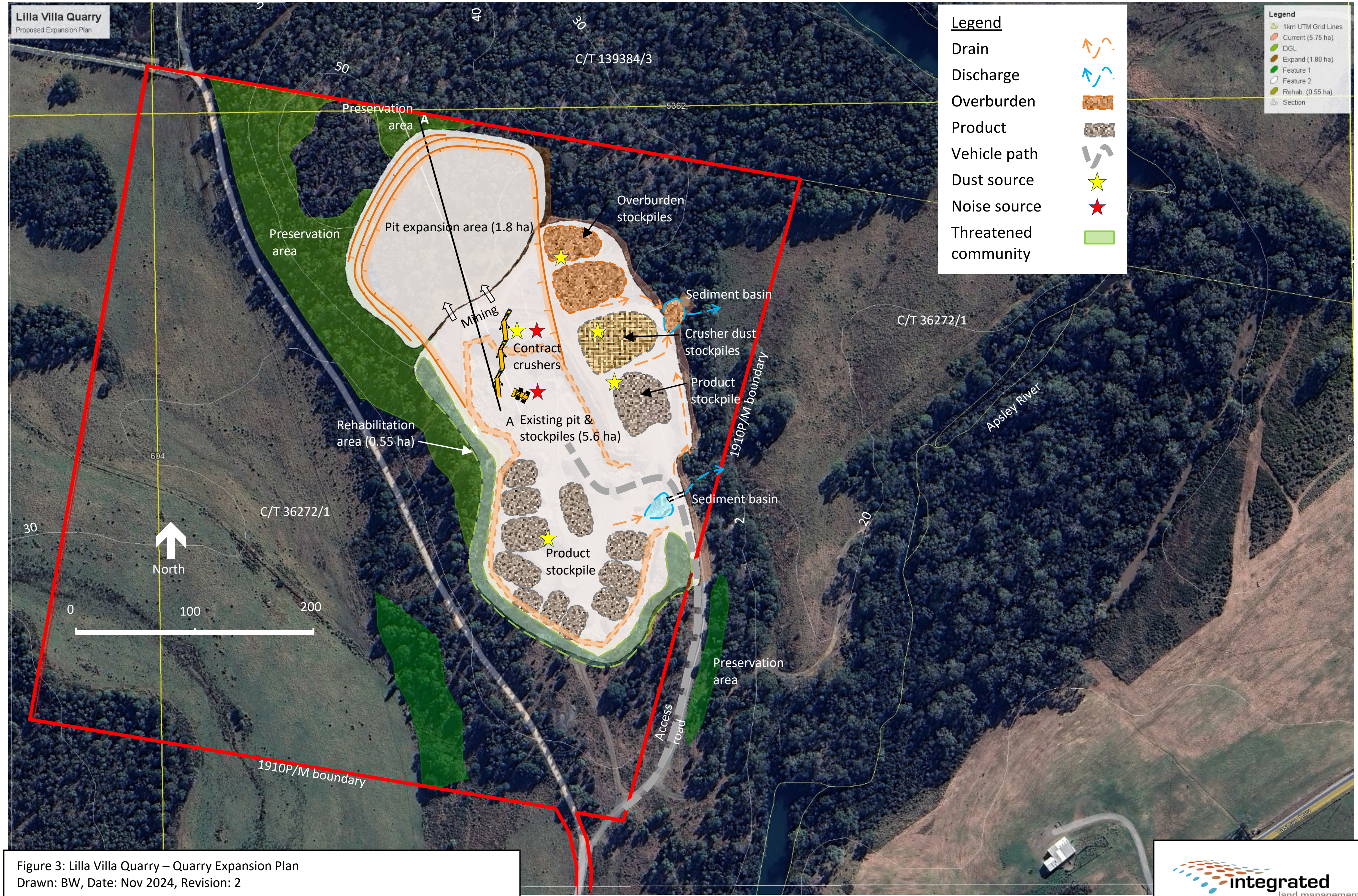


Figure 3: Lilla Villa Quarry – Quarry Expansion Plan
Drawn: BW, Date: Nov 2024, Revision: 2

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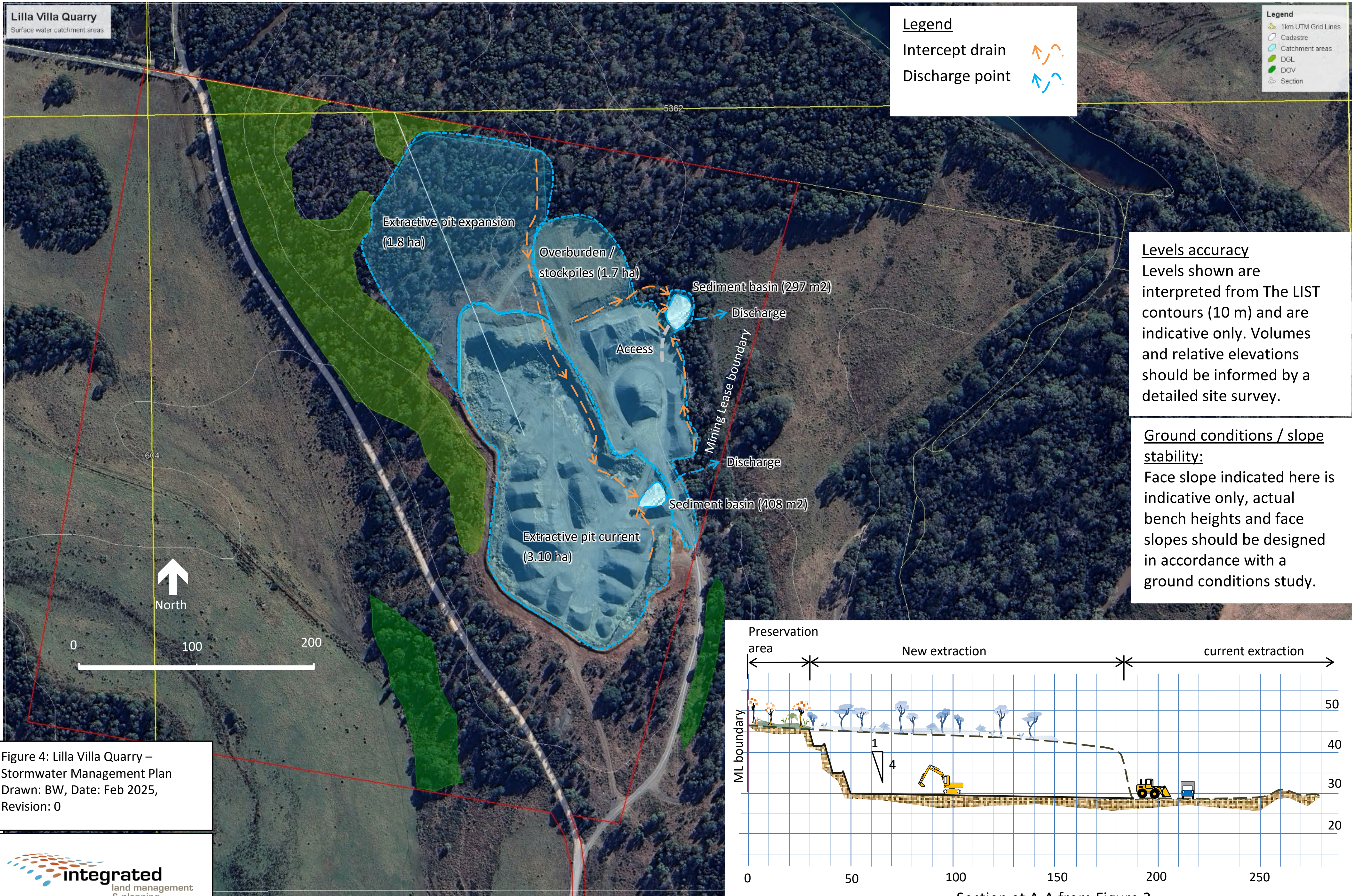

Figure 4: Lilla Villa Quarry – Stormwater Management Plan
Drawn: BW, Date: Feb 2025,
Revision: 0

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3 Project rationale and alternatives

Rationale	Lilla Villa Quarry supplies blue ‘fresh dolerite’ rock which is processed using contract crushers and screens to produce blended gravels and aggregates. The blended gravels are used for road pavement construction and the aggregate can be used for road sealing or for concrete. The site is near to the regional centre of Bicheno and easy trucking distance to Swansea, Coles Bay. Glamorgan Spring Bay Council and civil contractors engaged on State Roads Authority projects are regular customers. Projects requiring quarry products Lilla Villa Quarry can supply are becoming more common and larger in scale. The quarry plan for Lilla Villa Quarry is nearing completion. The Operator can see a potential benefit of submitting a new quarry plan and increasing the annual production cap to provide extra capacity to accommodate larger projects when they occur without disadvantaging regular customers.
Alternatives	The Lilla Villa Quarry can continue to operate in its current configuration and permitted status for a period but will not be able to service larger projects while servicing regular clients. These projects will therefore be serviced by quarries further afield with inherent additional cartage costs and long-range heavy vehicle traffic. Alternatively, a ‘once off’ assessments for an EPN will be required to authorise additional production above the cap. Quarries are best managed according to a comprehensive quarry plan locating extraction, processing and stockpiling areas and formulated runoff control and progressive rehabilitation to suit the level of production.

4 Existing activity

4.1 Environmental monitoring

Environmental monitoring is required for each blasting occasion. The results of monitoring for air-blast overpressure and ground vibration for a recent blast occasion are discussed in Section 3 Noise and blasting. No other environmental monitoring is required by the current permit conditions.

4.2 Public complaints

The Operator has not received any complaints directly from the public in relation to environmental emissions from Lilla Villa Quarry. The Operator is unaware of any public complaints having been received by regulating agencies in relation to environmental emissions from Lilla Villa Quarry.

4.3 Breaches of permit conditions

A recent site audit found that the operator had breached two of the current permit conditions included in PCE No. 8052 contained in Development Permit No. DA 10251.

TABLE 6: PERMIT BREACHES

Condition	Restriction	Breach	Date
Q1 – Regulatory limits	Annual processing capacity limited to 40,000 cubic metres.	EPA found evidence that the activity processed materials more than the permit limit in years 2020/21 and 2022/23.	22 April 2024
Condition DC3 – Progressive rehabilitation	Maximum area of disturbance limited to 2.5 hectares.	EPA found evidence that the disturbed area currently is more than the permit limit.	22 April 2024

4.4 CONTRAVENTIONS OF ENVIRONMENTAL LAW

The above breach of permit conditions was communicated to the Operator in the form of a 'Show Cause Notice' that required a commitment to resolve the issues to the satisfaction of the Director of the EPA or face prosecution under Section 51B of the EMPC Act.

PART C ENVIRONMENTAL IMPACTS AND MANAGEMENT

1 AIR QUALITY

1.1 EMISSION SOURCES

Lilla Villa Quarry is a blasting / crushing quarry using mobile equipment on a campaign style basis. The nature of these operations is there is no point source air emissions but rather fugitive emissions occur in relation to specific activities occurring at times.

1.1.1 DRILLING

Prior to a blast a series of holes are drilled to receive the explosives. The holes are drilled in a pattern over the area of ground which will be in a different location each time. Drilling produces fine stone chips and dust which gathers at the top of the hole.

1.1.2 BLASTING

When a shot is initiated fine particles of rock can be ejected from fractures and crevices in the source rock. This is an acute emission source which varies in intensity in relation to different rock types.

1.1.3 EARTHMOVING

Areas adjacent to the existing quarry have dolerite rock cropping out. The source rock in the pit is quite fresh with little weathering. However, it is possible that weathered dolerite will be encountered during extraction. Dolerite commonly weathers from the fractures within the bedrock, a process referred to as spheroidal weathering. Highly weathered dolerite results in kernels (rounded dolerite boulders and cobbles) in a clay matrix. When the clay component is dry, earthmoving activities can give rise to dust emissions.

1.1.4 CRUSHING / SCREENING

Current construction materials standards require source rock to be processed through a crusher and screen to provide the required material properties. Fugitive emissions occur from loading hoppers, the mechanical action of the crushers, materials travelling on conveyors and on the vibrating screens.

1.1.5 CRUSHER DUST AND OTHER STOCKPILES

Stockpiles of products and crusher dust can be a source of dust emissions in dry windy weather.

1.1.6 TRANSPORT

As with earthmoving, handling the processed product can give rise to dust emissions via placing the product in the trays of on-road trucks and the trucks traversing unmade surfaces entering and leaving the site.

1.2 ASSESSMENT OF RISK

1.2.1 PROXIMITY OF SENSITIVE RECEPTORS

Part B, Figure 2 shows the quarry site, mining lease application area and a 1.5 kilometre buffer. There are potential sensitive receptors within the buffer. The nearest potential sensitive receptor is a weekender located at 110 Lilla Villa Lane. This dwelling is occasionally occupied. Other potential sensitive uses are tabulated in **Table 5: Separation distance to potential sensitive uses** along with the separation distance from the curtilage of the building to the nearest mining lease boundary.

1.2.2 Climate and weather

The Bicheno area is a low rainfall region, **Part B, 1.3 Description of site and surrounds** 'Climate' shows throughout the year extended dry periods can be expected. 'Climate' also shows that predominant winds are from the north and west in the morning and north in the afternoon making receptors located south of the quarry most exposed.

1.2.3 Quarry Code of Practice

The quarry code of practice stipulates that "dust should not be normally visible crossing the boundary of the premises" (Environment Protection Authority, May 2017).

1.2.4 Respirable crystalline silica

Respirable crystalline silica dust are minute particles of silica produced when processing materials with a crystalline silica component. Dolerite source rock has silica as a constituent and drilling and blasting can produce dust containing silica. Worker's health is maintained by operators working within sealed cabins with air conditioning featuring HEPA filters to capture dust. Crib facilities are located at the batch plant which is remote from the quarry.

The source rock from Lilla Villa Quarry has been tested for typical concentration of crystalline silica. The results of the testing are included in MRT report LJN2020-021 (Mineral Resources Tasmania, 2020). The analysis found that samples from Lilla Villa Quarry contained approximately 13% quartz by weight, which is a comparatively low concentration.

1.2.5 Visual impact

Tasman Highway is a tourist route and a popular section of Tasmania's Great Eastern Drive. Lilla Villa Quarry is concealed from vantage points along the Tasman Highway but a plume of dust from the quarry would be visible and potentially intrusive.

1.2.6 Assessment

The most exposed receptor is 110 Lilla Villa Lane which located northwest of the quarry. The strongest wind in the afternoon when dust emissions are more likely will tend to carry any dust emitted away from this property.

The operator will manage dust emissions to comply with the Quarry Code, which will prevent visible dust crossing the mining lease boundary and hence being visible from Tasman Highway.

1.3 Air emission mitigation

The operator will employ the following measures to mitigate the risk of excessive air emissions:

- Drop distances to hoppers, from conveyors and into truck trays will be kept to a minimum.
- All vehicles including trucks and light vehicles will be restricted to a speed limit of 20 kilometres per hour on the quarry site.
- Prevailing wind conditions will be considered when planning drilling and blasting and drillers dust will be picked up from around drill holes if windy conditions are likely.
- Provision will be made to activate mist sprays on conveyor drop points during crushing if dust suppression is required from this source. Similarly in windy weather product and crusher dust stockpiles will be dampened with a water spray pumped from the either sediment pond to supressed wind borne emissions. A water cart will be on standby if water cannot be provided from site sediment ponds.

1.4 Performance standard

1.4.1 EPP (Air Quality) 2004

Section 6 of the Environment Protection Policy (Air Quality) 2004 (Environment Division, 2005) states:

(1) Environmental values are the values or uses of the environment that are to be protected.

(2) The environmental values to be protected under this Policy are –

> *(a) the life, health and well-being of humans at present and in the future;*
>
> *(b) the life, health and well-being of other forms of life, including the present and future health, wellbeing and integrity of ecosystems and ecological processes;*
>
> *(c) visual amenity; and*
>
> *(d) the useful life and aesthetic appearance of buildings, structures, property and materials*.

Adoption of the mitigation measures described above will minimise the risk that environmental standards set out in the EPP (Air Quality) are not protected.

Management measures 1: Air quality

Item	Proposed measure	Timeframe
1.	A speed limit of 20 kilometres per hour is imposed on all vehicles and machinery traversing the site.	During operational campaigns.
2.	Trucks carting product from Lilla Villa Quarry will have tarpaulins covers applied.	At all times.
3.	Drilling dust will be contained if drilling occurs during dry and windy conditions.	As required during drilling.
4.	Provision will be made to activate mist sprays on conveyor drop points during crushing.	As required to supress dust emissions.
5.	During periods of dry windy, weather a water cart will be used to dampen road surfaces, stockpiles and on the quarry floor.	As required to supress dust emissions.

2 Water quality (surface, discharge and groundwater)

Lilla Villa Quarry is situated within the catchment of a tributary to Aspley River. This proposal will not change the direction of flows but will increase the catchment area from the extractive pit.

2.1 Emission sources

Quarries contribute to water quality issues because of uncontrolled runoff from surfaces where erodible materials have been exposed and the sediment entrained runoff enters waterways. Other forms of liquid emissions will be covered in subsequent sections. The potential for sediment transport is a function of the area exposed (not covered with vegetation, buildings or paving) and the erosion potential of the soil.

2.1.1 Catchments

Hard rock quarries have two distinct catchment area types:

- overburden, product stockpiles, loading and vehicle manoeuvring areas,
- extraction, processing areas.

The former have potentially erodible stockpiles containing fine materials including clays and common traffic activity causing surface disturbance. The latter normally are stripped to remove any soil or vegetative materials that may harbour pathogens. The spoil from stripping is either topsoil with vegetation or overburden and are stored in windrows until required for rehabilitation purposes. The extractive areas are subjected to infrequent but intensive blasting / crushing disturbance.

The stockpile catchment area at Lilla Villa Quarry will not increase due to this proposal but the stormwater runoff management system will be improved to better control runoff and improve sediment retention capacity.

The extractive pit catchment area will increase progressively as this quarry plan is delivered. Bunds surrounding the top face prevent ingress of water from outside the foot print. These perimeter areas are the subject of immediate rehabilitation which will result in early vegetation cover to stabilise surfaces. No areas outside those currently disturbed report to the extractive pit footprint. The catchment is the pit floor, faces and bench above which has been scalped clean of soil.

Table 7: Disturbed area catchments

Catchments	Area (hectares)
Overburden, stockpiles	1.70
Extractive pit (current)	3.10
Extractive pit (expansion)	2.10
Rehabilitation area	0.55

2.1.2 Soil type

Part B 1.3 Description of site and surrounds describes the soil have having a moderate potential for water erosion. This assessment is true for the overburden stockpiles and surrounding ground. The crusher dust stockpile is susceptible to erosion and some collapse is evident.

The extractive pit area has had all erodible material removed, the substrate is now fresh dolerite rock with a small amount of dust attributable to drilling blasting and crushing operations.

2.2 Assessment of risk

Sediment control infrastructure will only deal with rain falling directly on the site due to the land surface outside the pit falling away in each direction. Risk will be assessed for each catchment separately:

- Overburden stockpile area: Surfaces in this area are susceptible to erosion and surfaces tend to drain directly into a band of native vegetation. Currently the catchment is not fully captured and a substantial sediment basin is partly filled with crusher dust. There is a moderate risk that offsite sediment discharge can occur.
- Extractive pit area: Surfaces in this area have been scalped clean and the remaining hard rock surface is not susceptible to erosion. Dust generated in this area has been removed to the crusher dust stockpile and any remaining will be captured in the fissures present in the pit floor fracture zone. There is a low risk that this area will contribute to offsite sediment discharge.
- Rehabilitation area: No further activity will occur in this area and natural recruitment is already providing around 40% vegetation cover. Seeding and fertilisation will encourage more vegetation cover and this area will soon not be a source of eroded sediment. It is highly unlikely that this area will contribute to any offsite sediment discharge.

2.3 Sediment emission mitigation

Runoff will be controlled by a combination of intercept drains and sediment basins. Overland flow outside of the quarry footprint will naturally drain away from the workings.

2.3.1 Intercept drains

The quarry floor will continue to be developed to have a gradual gradient to direct water from the benches, faces and quarry floor to a sediment basin constructed adjacent to the vehicle ramp and subsequently through a french drain under the access road into intact vegetation.

The stockpile areas will contribute to sediment load, whereas the extraction areas will be unlikely to contribute significantly. Runoff from the overburden, crusher dust and product stockpile areas will be controlled with new V-drains to intercept and direct surface flow to an existing sediment basin. This basin will be cleaned out and access will be improved to enable better maintenance.

2.3.2 Quarry floor sediment basin

The main contributor to the sediment load will be the product stockpiles. The particles liberated from these will be larger than 0.02 mm and will not be dispersive. Therefore, a Type C sediment basin is appropriate. A type C sediment basin is free draining (using a decant pipe). During dry conditions water can be retained for construction water supply (I.E.C.A., 2018).

Catchment area: 5.2 hectares

Drainage path: 460 metres quarry floor (fractured) coefficient of runoff 0.24,

Sheet flow travel time = $(107\ n\ L^{0.333})/S^{0.2}$, IECA Book 2 (A5) where:

n = Hortons roughness (bare soil 0.028)

L = overland sheet flow path (m) (maximum 200)

S = slope (%) (minimum 1%)

Sheet flow travel time = $(107*0.028*200^{0.333})/1.0^{0.2}$ = 17.5 mins

From (B.O.M. (b), 2024) the average intensity for a 17.5 minute 1 in 1 year storm is 32.8 mm/hr.

Q1 = (C I A)/360 = (0.5 x 32.8 x 5.2)/360 = 0.237 m3/s

Q = 0.5Q1 = 0.118 m3/s

Minimum average surface area

As = Ks He Q

Where Ks = sediment settlement coefficient (Table B22)

He = hydraulic efficiency correction factor (Table B23)

As = 3270 x 1.0 x 0.118 = 387 m2

From Table B26 settling zone and sediment storage depths using settling zone surface 387 m2.

Settling zone volume	333 m3
Total basin volume	497 m3
Settling zone depth	0.86 m
Total depth	1.5 m

Actual surface area of proposed sediment basin = 408 m2 (34 metres long by 12 metres wide)

This sediment basin will have a surface area of 408 square metres and a total capacity of 612 cubic metres.

2.3.3 Stockpile area sediment basin

The stockpile area includes the overburden stockpiles which will be progressively constructed as new extractive areas are developed and the crusher dust / product stockpile area. Crusher dust will be stored on the quarry floor when enough area is available, reducing the threat of uncontrolled off-site discharge of sediment entrained runoff. Product stockpiles will still be stored on this area.

Catchment area: 1.7 hectares

Drainage path: 80 metres sheet, 60 metres channel (fractured) 0.24,

Sheet flow travel time = $(107*0.028*80^{0.333})/1.0^{0.2}$ = 12.8 mins

60 metres V-drain Channel flow, top width 1.2 m average slope 0.5%

mass flow rate - 1.006 m/s, volumetric flow rate – 0.362 m3/s (OMNI calculator, 2024)

Channel flow travel time 60/(60*1.006) = 1 mins

Total time of concentration for a critical storm = 13.8 mins

From (B.O.M. (b), 2024) the average intensity for a 14 minute 1 in 1 year storm is 36.7 mm/hr.

Q1 = (C I A)/360 = (0.5 x 36.7 x 1.7)/360 = 0.087 m3/s

Q = 0.5Q1 = 0.043 m3/s

Minimum average surface area

As = Ks He Q

Where Ks = sediment settlement coefficient (Table B22)

He = hydraulic efficiency correction factor (Table B23)

As = 3270 x 1.0 x 0.043 = 140 m2

From Table B25 settling zone and sediment storage depths using settling zone surface 140 m2.

Settling zone volume	102 m3
Total basin volume	152 m3
Settling zone depth	0.78 m
Total depth	1.5 m

Actual surface area of sediment basin = 297 m2 (27 metres long by 11 metres wide).

The summaries of the Bureau of Meteorology intensity, frequency, duration (IFD) data used in the above calculations are reproduced below:

Australian Government
Bureau of Meteorology

Location

Label: Not provided
Latitude: -41.8907 [Nearest grid cell: 41.8875 (S)]
Longitude: 148.2508 [Nearest grid cell: 148.2625 (E)]

IFD Design Rainfall Intensity (mm/h)

Issued: 20 November 2024

Rainfall intensity for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).
FAQ for New ARR probability terminology

	Annual Exceedance Probability (AEP)						
Duration	**63.2%**	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
1 min	89.7	101	140	169	199	243	279
2 min	75.3	84.4	113	133	153	178	196
3 min	67.3	75.6	102	121	140	164	183
4 min	61.4	69.1	94.2	112	131	155	175
5 min	56.6	63.8	87.6	105	123	147	167
10 min	41.8	47.2	65.7	79.7	94.4	116	134
15 min	34.0	38.4	53.5	64.9	77.1	95.0	110
20 min	29.1	32.8	45.6	55.2	65.5	80.5	93.1
25 min	25.6	28.9	40.1	48.5	57.3	70.1	80.8
30 min	23.1	26.1	36.0	43.4	51.2	62.4	71.6
45 min	18.4	20.7	28.3	33.9	39.7	47.7	54.2
1 hour	15.6	17.5	23.9	28.5	33.1	39.4	44.4
1.5 hour	12.4	14.0	19.0	22.4	25.9	30.4	33.9
2 hour	10.6	12.0	16.2	19.1	21.9	25.6	28.4
3 hour	8.59	9.70	13.1	15.4	17.6	20.4	22.5
4.5 hour	6.94	7.87	10.7	12.6	14.3	16.7	18.4
6 hour	5.97	6.79	9.30	10.9	12.5	14.6	16.2
9 hour	4.79	5.48	7.61	9.01	10.4	12.2	13.6
12 hour	4.07	4.68	6.56	7.82	9.05	10.7	12.0
18 hour	3.19	3.68	5.24	6.32	7.38	8.87	10.0
24 hour	2.64	3.06	4.40	5.35	6.29	7.63	8.68
30 hour	2.26	2.62	3.81	4.65	5.50	6.70	7.65
36 hour	1.97	2.30	3.35	4.11	4.89	5.97	6.83
48 hour	1.58	1.84	2.71	3.34	3.99	4.88	5.59
72 hour	1.13	1.32	1.94	2.41	2.89	3.53	4.03
96 hour	0.885	1.03	1.52	1.87	2.25	2.73	3.11
120 hour	0.730	0.848	1.24	1.53	1.84	2.22	2.52

Australian Government
Bureau of Meteorology

Location

Label: Not provided
Latitude: -41.8907 [Nearest grid cell: 41.8875 (S)]
Longitude: 148.2508 [Nearest grid cell: 148.2625 (E)]

IFD Design Rainfall Depth (mm)

Issued: 20 November 2024

Rainfall depth for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).
FAQ for New ARR probability terminology

	Annual Exceedance Probability (AEP)						
Duration	**63.2%**	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
1 min	1.50	1.69	2.33	2.82	3.32	4.04	4.64
2 min	2.51	2.81	3.78	4.44	5.11	5.92	6.54
3 min	3.37	3.78	5.11	6.05	6.99	8.20	9.13
4 min	4.09	4.60	6.28	7.48	8.70	10.3	11.6
5 min	4.72	5.31	7.30	8.74	10.2	12.3	14.0
10 min	6.97	7.87	11.0	13.3	15.7	19.4	22.4
15 min	8.49	9.59	13.4	16.2	19.3	23.8	27.5
20 min	9.68	10.9	15.2	18.4	21.8	26.8	31.0
25 min	10.7	12.1	16.7	20.2	23.9	29.2	33.7
30 min	11.6	13.0	18.0	21.7	25.6	31.2	35.8
45 min	13.8	15.5	21.2	25.4	29.7	35.8	40.6
1 hour	15.6	17.5	23.9	28.5	33.1	39.4	44.4
1.5 hour	18.7	21.0	28.5	33.7	38.8	45.6	50.9
2 hour	21.3	24.0	32.4	38.2	43.8	51.1	56.7
3 hour	25.8	29.1	39.3	46.2	52.7	61.2	67.6
4.5 hour	31.3	35.4	48.2	56.6	64.6	75.0	82.8
6 hour	35.8	40.7	55.8	65.6	75.1	87.5	96.9
9 hour	43.2	49.4	68.4	81.1	93.3	110	122
12 hour	48.9	56.1	78.7	93.9	109	129	145
18 hour	57.3	66.2	94.4	114	133	160	181
24 hour	63.3	73.4	106	128	151	183	208
30 hour	67.7	78.6	114	139	165	201	230
36 hour	71.1	82.7	121	148	176	215	246
48 hour	75.9	88.4	130	160	191	234	268
72 hour	81.5	94.9	140	173	208	254	290
96 hour	84.9	98.8	145	180	216	262	299
120 hour	87.6	102	149	184	221	266	302

The existing sediment basin is already approximately 300 square metres in surface area. The basin will be cleared of accumulated sediment and a decant structure installed to allow the basin to drain gradually between rain events.

Access to the sediment basin will be improved to facilitate regular maintenance, the spillway will be improved with a rock lined surface to prevent scouring.

A V-drain will be constructed on the perimeter of the stockpile area with a top width of 1.2 metres and a depth of 0.6 metres.

The calculation above is derived from (I.E.C.A., 2018) and finds the capacity of sediment basins necessary to control runoff from the site. The V-drain size is calculated using the online Omni calculator to ensure that when drains are maintained design flows can be directed to the sediment basins.

2.4 Performance Standard

The Apsley River catchment is included in the Glamorgan Spring Bay Catchments area of the Environmental Management Goals for Tasmanian Surface Waters (DPIWE, 2000). Protected Environmental Values for this section of the catchment and this land tenure i.e. Surface Waters on Private Land (including forest on private land)

A: Protection of Aquatic Ecosystems
(ii) Modified (not pristine) ecosystems

(a) from which edible fish are harvested

B: Recreational Water Quality & Aesthetics

(i) Primary contact water quality (Western side of the bridge at Brushy Plain Rivulet (Buckland) and Tee Tree Rivulet; Bluff River at "Littleworth", Deep Hole, Little Swanport; in the Apsley River at "Fern Dale" and at "Glen Allsyar"; and at the Denison River mouth)

(ii) Secondary contact water quality
(iii) Aesthetic water quality

C. Raw Water for Drinking Water Supply

(i) Subject to coarse screening plus disinfection (Triabunna, Orford, Swansea, Bicheno)

D: Agricultural Water Uses

(i) Irrigation
(ii) Stock watering

E: Industrial Water Supply (batching plant, at "Greenlawn" Bicheno).

That is, as a minimum, water quality management strategies should seek to provide water of a physical and chemical nature to support a healthy, but modified aquatic ecosystem from which edible fish, crustacea and shellfish may be harvested; that is suitable as a raw water for drinking water supply subject to coarse screening plus disinfection at the offtake location for the Triabunna, Orford, Swansea, Bicheno town water supplies; that is acceptable for irrigation and stock watering purposes; which will allow people to safely engage in primary contact recreation activities such as swimming at the western side of the bridge at Brushy Plain Rivulet (Buckland) and Tee Tree Rivulet; Bluff River at "Littleworth", Deep Hole, Little Swanport; in the Apsley River at "Fern Dale" and at "Glen Allsyar", and at the Denison River mouth; and secondary contact recreation activities such as paddling or fishing in aesthetically pleasing waters; and is suitable for use for a (batching plant, at "Greenlawn" Bicheno).

The *Quarry Code of Practice* (Environment Protection Authority, May 2017) requires water discharged to inland waters to have total suspended solids TSS concentration not exceeding 30 mg/L. During a storm event, any plume leaving the site should not be visibly more turbid than the receiving waters.

2.5 EFFICACY OF CONTROLS

Construction of a new sediment basin in the quarry floor and a new V-drain on the perimeter of the stockpile area will be combined with cleaning and maintenance of the existing sediment basin adjacent to the stockpile area. These actions will minimise the risk that the proposed expansion of Lilla Villa Quarry would fail to meet the environmental management goals for the receiving aquatic environment.

The Operator will monitor the sediment control infrastructure to ensure that capacities are not compromised by accumulated sediment.

MANAGEMENT MEASURES 2: SEDIMENT CONTROL

Item	Proposed measure	Timeframe
6.	A new sediment basin will be constructed on the floor of the quarry designed in accordance with I.E.C.A. standards.	Prior to expanding extraction area
7.	A new V-drain will be constructed on the perimeter of the stockpile area to intercept and direct surface water to the sediment basin	As soon as possible
8.	The existing sediment basin will be cleared of accumulated sediment to restore capacity to at least 152 cubic metres	As soon as possible

2.6 GROUNDWATER

Lilla Villa Quarry is situated on a rocky ridge above the flood plain to the Apsley River. Sections of the flood plain are mapped as Groundwater Dependent Ecosystems (GDEs) by Groundwater Dependent System Atlas available through the Bureau of Meteorology website.

Extractive operations can affect GDEs by creating a void below the groundwater (GW) table and hence causing a localised lowering of the GW table. The effect of this lowering can be reversal of flows in GW and drying of GDE altering dependent flora and fauna.

Extraction at Lilla Villa Quarry has not encountered the GW table at any point and the intention is currently to expand the area horizontally rather than excavate deeper. It is therefore unlikely that GW flows will be affected by this proposal.

3 Noise emissions and blasting

The operator contracted a site-specific noise study to quantify the noise emissions from the operation and impact on sensitive receptors (residences). The report (Pitt & Sherry, Feb 2025) produced in response to the noise survey work is included in this document as Appendix 2 and is summarised below.

Lilla Villa Quarry operates on a campaign basis and noise survey measurements were taken during a crushing campaign to obtain actual data. The crusher circuit machines were set up close to each other making measuring individual machines not possible. Reference sound power levels were used and checked against on-site measurements.

3.1 Noise sources

Equipment sound power levels used in noise modelling are tabulated below:

Table 8: Equipment sound power levels

Equipment	Quantity	Sound power level dB(A)
Pegson 1100 x 650 Jaw Crusher	1	119.8
Powerscreen Chieftain 2100X Inclined Conveyor	2	109.1
Powerscreen 1300 Maxtrak Cone Crusher	2	109.6
Drill Rig	1	117.0
Excavator	2	107.7
Wheel Loader (stationary)	1	106.1
Wheel Loader (moving)	1	70.0 dB(A)/m
Road Truck	1	65.0 dB(A)/m

3.2 Potential sensitive receptors

Figure 2: Potential sensitive uses in this report shows nearby residences in proximity to the Lilla Villa Quarry operation. The noise report considered two closest residences as these were the most exposed in relation to noise.

Table 9: Nearest residences to activity

Number	Address	Separation distance (m)
1	17010 Tasman Highway, Bicheno (related to quarry operator).	670
2	110 Lilla Villa Lane, Bicheno	300

It is noted that Lilla Villa cottage is owned by the family of the operator of Lilla Villa Quarry and hence cannot be considered 'in other ownership'.

3.3 Calculated noise emission impact

The purpose of the noise study is to predict the impact of expanding the current activity into a new extraction and processing area within the current mining lease boundary. The expansion area is contiguous with the existing extraction area, retains the current floor level but advances the northern face further north towards the mining lease boundary (see Figure 3: Lilla Villa Quarry – Quarry Expansion Plan). The advancement brings the extraction and processing operations closer to 110 Lilla Villa Lane but increase the height of the intervening face. Activities will move further away from Lilla Villa cottage and cause a high face on the east side of the activity to intervene.

The noise study provides a series of predicted operational noise levels for the current and expanded operation:

Table 10: Predicted noise levels - various sources / locations (dB(A))

Number		Residence (sensitive receptors)	Crushing		Drilling	Truck loading
Noise report	This report		Current operation	Expanded operation		
R07	1	17010 Tasman Highway, Bicheno	45.0	44.4	36.7	39.1
R04	2	110 Lilla Villa Lane, Bicheno	36.8	40.0	36.6	27.2
R06	3	251 Lilla Villa Lane, Bicheno	34.3	34.0	32.8	26.4
R05	4	220 Lilla Villa Lane, Bicheno	35.2	37.2	30.9	28.0

3.4 Regulation of environmental noise

Lilla Villa Quarry will be regulated under environmental conditions imposed by the EPA. Where specific site conditions do not call for a variation, the limits imposed are likely to be derived from the *Quarry Code of Practice*:

> *Noise from quarrying and associated activities, including equipment maintenance, when measured at any neighbouring sensitive use must not exceed the greater of:*
>
> *the A-weighted 10 minute L90, excluding noise from the quarry, plus 5 dB(A), or*
>
> *the following levels:*
>
> - *45 dB(A) from 0700 to 1900 hours (daytime)*
> - *40 dB(A) from 1900 to 2200 hours (evening), and*
> - *35 dB(A) from 2200 to 0700 hours the following day (night time)*
>
> *when measured as a 10 minute Leq.*

Regulatory authorities may require compliance with alternative noise limits derived from a site-specific noise assessment. (EPA Tasmania, May 2017)

3.5 Operating hours

Lilla Villa Quarry will abide by the recommended operating hours for a quarry stated in the *Quarry Code of Practice* (Environment Protection Authority, May 2017).

Table 11: Operating hours

Activity	Week days	Saturday	Sunday & public holiday
Excavating / processing	7.00 am to 7.00 pm	8.00 am to 4.00 pm	-
Loading / carting	7.00 am to 7.00 pm	8.00 am to 4.00 pm	-
Blasting	10.00 am to 4.00 pm	-	-

3.6 Noise attenuation measures

The designed advancement of Lilla Villa Quarry will retain substantial high faces on the north, west and east side. High walls will become more pronounced as extraction proceeds. These barriers will cause future noise emissions at the nearest residence in other ownership to marginally reduce.

The operator will continue to engage professional crushing contractors which employ late model well maintained machines that will have proprietary silencers and other noise reduction equipment fitted.

3.7 Current blasting

Lilla Villa Quarry is a drill and blast operation and the proposed increase in annual production will increase the number of blasts per year. Currently the site fires up to three or four shots per year, at the maximum annual rate of production proposed the rate of blasting will increase to between 6 and 10 per year.

Blasting is undertaken by fully qualified and experienced blasting contractors (currently Orica). A recent blast detonated on 20 September 2024 used a charge mass of 260 kg and fragmented 6,633 bank cubic metres of rock. This blast was monitored for air blast over-pressure and ground vibration and returned the following figures.

Table 12: Blast monitoring results

Air-blast overpressure	102.4 dB (linear)	Ground vibration	2.22 mm/s

3.8 Regulation of blasting

Blasting at Lilla Villa Quarry will be regulated under environmental conditions imposed by the EPA. Where specific site conditions do not call for a variation, the limits imposed are likely to be derived from the *Quarry Code of Practice*:

> *Blasting must be carried out such that, when measured at the curtilage of the nearest residence (or sensitive use) in other occupation or ownership, air blast and ground vibration comply with the following:*
>
> > *a) for 95% of blasts, air blast overpressure must not exceed 115 dB (Lin Peak);*
> >
> > *b) air blast overpressure must not exceed 120 dB (Lin Peak) at all;*
> >
> > *c) for 95% of blasts, ground vibration must not exceed 5 mm/s peak particle velocity; and*
> >
> > *d) ground vibration must not exceed 10 mm/s peak particle velocity at all.*

3.9 Future blast design

To meet design criteria of 95% of blasts not exceeding a peak particle velocity of 5 mm/s, the noise assessment report (Pitt & Sherry, Feb 2025) recommends a maximum blast charge of 145 kg for blasts occurring closest to the residence at 110 Lilla Villa Lane.

A maximum blast charge of 145 kg for blasts occurring closest to the residence at 110 Lilla Villa Lane will meet the design criteria of 95% of blasts not exceeding 115 dB(Lin Peak).

3.10 Blasting impact attenuation measures

The operator will continue to engage fully qualified and professional blasting contractors. Each blast will be monitored for levels of air blast over-pressure and ground vibration and any failure to meet the standards imposed will trigger and investigation and the incident and results of the investigation will be reported to the EPA.

The operator will continue to maintain a 'complaints register' recording any complaint relating to environmental issues, the ensuing investigation and resolution actions.

Management measures 3: Noise emissions

Item	Proposed measure	Timeframe
9.	Professional crushing contractors will be utilised for each crushing campaign, equipment will be late model, well maintained with all proprietary silencing equipment fitted.	On each crushing campaign occasion.
10	A certified blasting contractor will undertake blasting and all blasts will be monitored for air-blast overpressure and ground vibration.	On each blast occasion

11	The Operator will maintain a 'complaints register' and will investigate complaints and provide extra mitigation measures to alleviate the nuisance.	If complaints are received.

3.11 Performance

3.11.1 Environment Protection Policy (noise) 2009

This policy seeks to regulate noise generated externally to the affected premises to protect environmental values as below:

(1) Environmental values are the values or uses of the environment that are to be protected.

(2) The environmental values to be protected under this policy are the qualities of the acoustic environment that are conducive to

a) the wellbeing of the community or a part of the community, including its social and economic amenity; or
b) the wellbeing of an individual, including the individual's
   (i) health; and
   (ii) (ii) opportunity to work and study and to have sleep, relaxation and conversation without unreasonable interference from noise.

The noise assessment concludes that the quarry currently and with the proposed expansion will be unlikely to cause an adverse impact on amenity or cause environmental harm if operated in compliance with the Q*uarry Code of Practice*. The activity can proceed and expand and still comply with the objectives of the Environment Protection Policy (Noise) 2009.

4 Natural values

4.1 Natural Values Assessment

A natural values assessment was commissioned to survey and document important values present on the site. The assessment report includes in the appendices a Natural Values Atlas report for this site. The report was submitted in October 2024 and updated on 20 February 2025 (ECOtas, Oct 2024 updated Feb 2025) is appended to this report as Appendix 1. The natural values assessment was edited in June with further description of the study area as requested. The findings of the values assessment are summarised below:

4.1.1 Threatened flora

Plant species that are listed on both the *Threatened Species Protection Act 1995* (Tas) and on the schedules of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) were detected during the field investigation:

- *Epacris apsleyensis* (apsley heath) and
- *Stenanthemum pimeleoides* (propellor plant)

4.1.2 Threatened fauna

No fauna species listed on the *Threatened Species Protection Act 1995* (Tas) or on the schedules of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) were detected during the field investigation.

The study area supports potential habitat (to varying degrees) for the following species:

- *Sarcophilus harrisii* (Tasmanian devil);
- *Dasyurus maculatus* subsp. *maculatus* (spotted tailed quoll);
- *Dasyurus viverrinus* (eastern quoll);
- *Perameles gunnii* (eastern barred bandicoot);
- *Lathamus discolor* (swift parrot);
- *Neophema chrysostoma* (blue-winged parrot);
- *Aquila audax* subsp. *fleayi* (wedge-tailed eagle); and
- *Tyto novaehollandiae* (masked owl).

4.1.3 Vegetation types

The study site supports the following vegetation communities as classified under TasVeg 4.0:

- Water, sea (OAQ)
- agricultural land (FAG);
- regenerating cleared land (FRG);
- extra-urban miscellaneous (FUM);
- *Bursaria-Acacia* woodland and scrub (NBA);
- *Allocasuarina verticillata* forest (NAV);
- *Eucalyptus amygdalina* forest and woodland on dolerite (DAD); and
- *Eucalyptus globulus* dry forest and woodland (DGL).
- *Eucalyptus ovata* forest and woodland (DOV).

The presence of *Eucalyptus globulus* dry forest and woodland and *Eucalyptus ovata* forest and woodland, which are identified as a threatened native vegetation community under Schedule 3A of the *Nature Conservation Act 2002* (Tas) means that parts of the site can be interpreted as “priority vegetation” pursuant to C7.3.1(a) of the State Planning Provisions.

4.2 Recommendations

4.2.1 Vegetation types

The report (ECOtas, Oct 2024 updated Feb 2025) recommends that the areas mapped as *Eucalyptus globulus* dry forest and woodland be excluded from future expansion and be managed to minimise the risk of degradation.

It is noted the areas mapped as *Eucalyptus ovata* forest and woodland (DOV) were not to be disturbed under this proposal.

4.2.2 Threatened flora

If the planned expansion of Lilla Villa Quarry will disturb any of the individuals of threatened flora species detected in the study an application for a Permit to Take must be submitted and approved before work can proceed.

It is noted that areas where threatened flora species were detected as part of the natural values survey will be preserved with exclusion areas.

4.2.3 THREATENED FAUNA

Swift parrot

Excluding the areas mapped as *Eucalyptus globulus* dry forest and woodland from disturbance also preserves potential foraging and nesting habitat for *Lathamus discolor* (swift parrot).

Marsupial carnivores

The report concluded that the increase in production is unlikely to cause an increase in road kill to marsupial carnivores (devils, quolls). Most of the extra demand will be during the construction season, spring, summer and autumn, hence an increase in traffic will occur at this time. It is unlikely that any additional truck movements will occur during dawn or dusk.

Wedge-tailed eagle (white-bellied sea eagle)

The nearest known nest is RND #2317 which is 2,400 m northeast of the mining lease area, several other known nest sites are greater than 2 kilometres from the site. The report concludes that no part of the proposed activity is within 500 metres or 1 kilometre 'line of sight' of a known nest or any potential habitat for a novel nest, therefore no additional management prescriptions or nest surveys are required.

4.3 *ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999* (CTH)

The Natural Values Assessment report (ECOtas, Oct 2024 updated Feb 2025) addresses the likelihood the proposal will have a significant impact on matters of national environmental significance. The conclusion of the study is that the activity as proposed will not trigger significant impact thresholds because;

- the protected flora species are outside the impact area,
- habitat likely to harbor significant fauna species is protected, and
- runoff water management measures will protect Ramsar values.

4.4 PROPOSED CLEARING

The confirmed status of the vegetation community encroaching on the mining lease northern boundary caused a substantial redesign to exclude the areas mapped as *Eucalyptus globulus* dry forest and woodland from clearing. The area of clearing for Lilla Villa Quarry has now been reduced to 1.8 hectares of the *Eucalyptus amygdalina* forest and woodland on dolerite community.

The boundary of the preservation areas closest to the proposed extraction area will be delineated with posts and flagging to mitigate the risk of inadvertent damage in future works. All activity apart from the initial stripping will occur on the next bench or quarry floor and hence will not pose a threat to the preservation areas.

Future planned works and woodland clearing will proceed in areas that have been surveyed and found not to contain individuals of species listed as threatened under state legislation. No application for a 'Permit to Take' will be made.

MANAGEMENT MEASURES 4: NATURAL VALUES

Item	Proposed measure	Timeframe
12	Preservation areas will be established and delineated over the areas mapped as *Eucalyptus globulus* dry forest and woodland, to prevent inadvertent disturbance in the future.	Prior to expanding extraction area
13	A preservation area will be established over the areas adjacent to the access road where threatened flora species are known to be present.	On issue of a permit

5 WEEDS, PESTS AND PATHOGENS

5.1 WEEDS

One weed species gorse (*Ulex europaeus*) was observed on the site. Gorse is classified as a declared weed pursuant to the *Biosecurity Act 2019* (Tas). It was evident that the site is already the subject of a targeted weed control program.

A continuation of the current weed control program is recommended including monitoring for new or expanded infestations every 6 to 12 months and immediate control action for any outbreaks.

5.2 PATHOGENS

5.2.1 PHYTOPHTHORA CINNAMOMI

Phytophthora cinnamomi – (Pc): no field symptoms of Pc presence were detected, the report concluded that the site is most probably Pc free.

The report recommends a site hygiene protocol to ensure machinery coming onto site is clean and weed free.

5.2.2 MYRTLE WILT

The site does not support myrtle trees, no special management necessary.

5.2.3 MYRTLE RUST

No evidence of myrtle rust was detected.

5.2.4 CHYTRID FUNGUS

Marginal potential habitat is present although drainage is ephemeral so the likelihood of amphibian populations is low. Management measures to control Pc will help to prevent the introduction of Chytrid fungus as well.

MANAGEMENT MEASURES 5: WEED AND HYGIENE

Item	Proposed measure	Timeframe
14	The current weed management controls will continue with monitoring every 6 to 12 months.	On issue of a permit.
15	All earthmoving equipment coming onto the site will be washed down in accordance with the *Weed and Disease Planning and Hygiene Guidelines* (DPIPWE, 2015).	On issue of a permit
16	The surface above the top face will be stripped for a machine width from the live edge to remove soil and vegetation.	On issue of a permit.

6 WASTE

6.1 WASTE FROM EXTRACTION

Lilla Villa Quarry will advance into a new development area to extend its operational life. Extractive operations will generate small amounts of stripping, topsoil and overburden which will be relocated to the overburden stockpile area. This material will be used to undertake rehabilitation and revegetation activities immediately and later when the quarry is decommissioned.

The source rock is dolerite and during the quarry's active life has not shown evidence of containing pyrite or any other potentially acid forming mineral. The development area and land immediately surrounding are not mapped as having any potential for acid sulphate soils being present.

The range of products derived from Lilla Villa Quarry have scope to accommodate oversized and dust. Oversized shot rock will be broken down into smaller sizes suitable for crusher feed or stored on site for reclamation or retaining wall works. Crusher dust can be gradually blended into other products in small quantities. There will be no permanent waste products from production other than overburden.

6.2 SPARES AND LITTER

Machinery will be taken to the Operator's workshops in the concrete batch plant yard for servicing and maintenance. Spares or waste generated through breakdowns or routine lubrication will be retained in workers utilities and taken off-site at the end of each working day.

Litter emanating from lunches and other amenities will be retained in enclosed containers and periodically disposed of to an approved disposal site.

7 ENVIRONMENTALLY HAZARDOUS SUBSTANCES

7.1 HYDROCARBONS

Mobile equipment will be refuelled using a utility mounted refuelling facility. Lubricants, engine oil and hydraulic fluid for daily maintenance will continue to be stored in the Operator's concrete batch plant workshops. Lubricants for daily servicing will be kept in the operator's utility vehicles.

7.2 Leak and spills

The Operator will provide a hydrocarbon spill kit ready for immediate deployment if a hydrocarbon leak or spill occurs. A hydrocarbon boom will be available for deployment across the surface of the sediment basin should a hydrocarbon spill or leak enter the sediment control infrastructure.

7.3 Other hazardous substances

Sufficient explosives will be brought on to site on the day of the blast. No explosives will be stored on site. Storage and handling of explosives will be the responsibility of the blasting contractor.

Management measures 6: Hazardous substances

Item	Proposed measure	Timeframe
17	A hydrocarbon spill kit and a hydrocarbon boom will be available and ready for immediate deployment in the event of a leak or spill.	At all times

8 Site contamination

Lilla Villa Quarry is located on private land which has only been used for grazing stock and quarrying. Since inception of the quarry operation, there has not been any incident that may have caused contamination to the land or groundwater in the knowledge of the Landowner.

9 Other off-site impacts

Part B Table 3: Proposal description, shows the site can generate up to 30 vehicle movements per day at full production. For short periods traffic may increase to 40 movements per day servicing high intensity, short term projects.

The traffic will be mainly truck and trailer combinations with some single truck movements for local projects. Within the quarry area the trucks will be limited to a maximum speed of 20 kilometres per hour. Road trucks will be limited to 40 km/hr on Lilla Villa Lane to the junction with Tasman Highway.

Engine brakes can be intrusive during period of low ambient noise (clear, still mornings, evenings). With a restrictive speed limit on the quarry access road drivers should be able to avoid using engine brakes on this Lilla Villa Lane.

Cartage will be restricted to the operating hours for the quarry. Trucks will not be arriving or leaving the site before 7.00 am or after 7.00 pm during the week. During winter these hours will include 1 hour in the morning before daylight and perhaps 2 hours in the afternoon after dusk. There is a small possibility for trucks travelling during these hours to hit nocturnal animals moving through the landscape at night. Lilla Villa Lane runs through open paddocks with low grass road side vegetation which reduces the risk of animals being startled and running into the path of oncoming vehicles.

Studies show that vehicle speed has a direct correlation to road kill and reducing vehicle speed is an effective tool to reduce road kill. Also, visibility can be a determinate for the likelihood of road kill so clearing vegetation adjacent to the carriageway can reduce road kill incidence. (Alistair J, 2008)

MANAGEMENT MEASURES 7: OFF-SITE IMPACTS

Item	Proposed measure	Timeframe
18	Truck drivers will be required to refrain from using engine brakes on the quarry access road.	Upon issue of a new permit
19	Truck drivers will take extra care to avoid road kill when accessing the site at times when visibility is poor.	During winter months
20	Truck drivers will be restricted to a maximum speed of 20 km/hr on the quarry access road to Lilla Villa Lane.	On issue of a new permit
21	Truck drivers will be restricted to a maximum speed of 40 km/hr on Lilla Villa Lane to the Tasman Highway.	On issue of a new permit

10 MONITORING

10.1 MONITORING

The Lilla Villa Quarry Operator will conduct regular monitoring to ensure compliance with environmental conditions.

10.2 SEDIMENT CONTROL INFRASTRUCTURE

The Operator will observe the level of accumulated sediment in the sediment basins and drainage channels. Once the level of accumulated sediment in the basins or drains has risen to half the full water level, the pond and drains will be cleaned out. The spoil gathered from clearing the sediment basins and drains will be stored with rehabilitation materials for use in future rehabilitation activities.

10.3 DUST IMPACTS

The quarry operator will observe dust conditions in dry and windy weather. If adverse weather conditions are predicted the operator will implement suppression measures such as dampening unsealed trafficked surfaces and stockpiles until conditions improve.

10.4 WEEDS

During normal operations the operator, employees and contractors will observe the quarry stockpiles and surrounding areas for emergent weeds and if present, initiate controls as required.

11 DECOMMISSIONING AND REHABILITATION

11.1 PROGRESSIVE REHABILITATION

The agreed end use for Lilla Villa Quarry is to return most of the site to pasture suitable for stock grazing. Remaining benches and faces will not be suitable for stock and instead will have native vegetation regenerated.

Progressive rehabilitation will take place immediately to repair a disturbed area surrounding the top quarry face comprising 0.55 hectares.

11.2 Decommissioning

Once all remaining marketable materials have been recovered, the operator will carry out decommissioning and rehabilitation:

- All machinery and equipment will be removed from the site.
- Faces will be reduced to maximum height of 5 metres.
- The access track quarry floor and remaining benches will be ripped to enhance infiltration.
- Overburden stockpiles will be spread over the ripped surfaces and placed against the toe of remaining faces to further reduce the height.
- Topsoil stockpiles will be spread on the finished surface and any remaining stripping pulled back over this.
- The sediment basins will be retained until a self-sustaining vegetation cover is achieved and then allowed to gradually fill and become a wetland.

11.3 Monitoring

Until such time as the site is considered rehabilitated the operator will continue to monitor the following aspects of the rehabilitation:

Inspection	Action
Emerging weeds	Weed control using herbicide spray or cut and paint.
Sediment basins will be inspected for capacity.	Clean out if accumulated sediment has reduced basin effectiveness.
Planting and natural recruitment revegetation.	Broadcast native seed mix if revegetation is not successful.

12 Greenhouse gas emissions and climate change

Lilla Villa Quarry is a strategically located construction materials source. The Bicheno / Swansea area is developing and is likely to develop further in the future. Future development includes Council works, subdivision, new buildings and proposed future State Roads contracts which will substantially increase demand for the products Lilla Villa Quarry produces. These products are high mass / low value materials that should be sourced close to the project. Alternative sources would substantially increase cartage which increases costs but also significantly increases greenhouse gas emissions associated with cartage kilometres.

Greenhouse gas emissions produced by using diesel energised machinery is compensated for by the quarry being located close to the market and saving on cartage.

Part D Summary of Proposed Management Measures

Item	Proposed measure	Timeframe
1.	A speed limit of 20 kilometres per hour is imposed on all vehicles and machinery traversing the site.	During operational campaigns
2.	Drilling dust will be contained if drilling occurs during dry and windy conditions.	As required during drilling
3.	Provision will be made to activate mist sprays on conveyor drop points during crushing. A water cart will be on standby if water cannot be provided from site sediment ponds	As required during crushing
4.	A new sediment basin will be constructed on the floor of the quarry designed in accordance with I.E.C.A. standards.	Prior to expanding extraction area
5.	A new V-drain will be constructed on the perimeter of the stockpile area to intercept and direct surface water to the sediment basin	As soon as possible
6.	The existing sediment basin will be cleared of accumulated sediment to restore capacity to at least 152 cubic metres	As soon as possible
7.	Professional crushing contractors will be utilised for each crushing campaign, equipment will be late model, well maintained with all proprietary silencing equipment fitted.	On each crushing campaign occasion.
8.	A certified blasting contractor will undertake blasting and all blasts will be monitored for air-blast overpressure and ground vibration.	On each blast occasion
9.	The Operator will maintain a 'complaints register' and will investigate complaints and provide extra mitigation measures to alleviate the nuisance.	If complaints are received.
10	A preservation area will be established over the areas mapped as Eucalyptus globulus dry forest and woodland, to prevent inadvertent disturbance in the future.	Prior to expanding extraction area
11	A preservation area will be established over the areas adjacent to the access road where threatened flora species are known to be present.	On issue of a permit
12	The current weed management controls will continue with monitoring every 6 to 12 months.	On issue of a permit.

13	All earthmoving equipment coming onto the site will be washed down in accordance with the Weed and Disease Planning and Hygiene Guidelines (DPIPWE, 2015).	On issue of a permit
14	The surface above the top face will be scalped for a machine width from the live edge to remove soil and vegetation.	On issue of a permit.
15	A hydrocarbon spill kit and a hydrocarbon boom will be available and ready for immediate deployment in the event of a leak or spill	At all times
16	Truck drivers will be required to refrain from using engine brakes on the quarry access road.	Upon issue of a new permit
17	Truck drivers will take extra care to avoid road kill when accessing the site at times when visibility is poor.	During winter months
18	Vegetation will be cleared adjacent to the quarry access road to minimise road kill risk.	On issue of a new permit

Part E – Public and Stakeholder Consultation

Lilla Villa Quarry is situated on the Operator's family's land. The family is aware and supports the Operator's intention to modify the quarry plan and increase production at Lilla Villa Quarry.

Mineral Resources Tasmania (MRT) is aware of the Operator's intention to change the quarry plan and increase production at Lilla Villa Quarry. A representative of MRT attended a site meeting recently where the proposal was discussed in detail.

Environment Protection Authority (EPA) represented by the Assessment Officer and the Regulator also attended the same site meeting. EPA will receive this Environmental Effects Report (EER) in support of a case for assessment under the *Environmental Management and Pollution Control Act 1994* legislation. The Board of the Environment Protection Authority will evaluate the case for assessment and feedback from interested stakeholders and agencies to determine what environmental conditions may apply to any permit issued.

The Glamorgan Spring Bay Council (GSBC) will receive a Development Application which will be assessed following public advertising of the development application plus the EER. Any feedback from interested stakeholders will be taken into consideration by the EPA and Council in the determination to issue a permit or otherwise.

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