

DPEMP SUPPLEMENT

'THE GUMS' QUARRY, PALANA ROAD WHITEMARK, FLINDERS ISLAND



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SUPPLEMENT FIGURES

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PART A - BACKGROUND

A Development Proposal and Environmental Management Plan (DPEMP) was prepared to support a Development Application by Markarna Grazing Company Pty Ltd for a Planning Permit to intensify the use of a quarry on the property known as The Gums, north of Whitemark on Flinders island.

The application sort approval for production levels of up to 120,000 cubic metres per annum, with specific qualifications as to when production levels would exceed 20,000 cubic metres per annum.

Given the strategic location of the quarry and its unique product, the development described two modes of operation. When combined, the two types of production represented the 120,000 cubic metres annual limit sought by the applicant. The two operational modes for the activity described are -

1. Normal Production – normal (extraction volume limited on a per annum basis to 20,000 cubic metres) extraction associated with minor works including those conducted by the proponent and for sale to customers.
2. Major Projects – those projects which require a large volume of material (maximum of 100,000 cubic metres of extraction per annum) over a short to medium term (weeks or several months) which have social and economic benefits to the island economy and infrastructure.

The intensified 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 120,000 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 120,000 cubic metres per annum**].

Level 2 Activities must be referred by the Planning Authority (in this case, Flinders Council) and to the Environment Protection Authority (the EPA), for assessment under EMPCA.

Council advertised the application for a 28-day period within which anyone could make a representation about the project. When the representation period closed, the Council forwarded all representations to the EPA.

The Environment Protection Authority (EPA) received additional comments from referral agencies in relation to planning application DA 012/216 and supporting documentation including the document entitled *Development Proposal and Environmental Management Plan, ‘The Gums’ Quarry, Palana Road, Whitemark, Flinders Island* dated 9 October 2016 (DPEMP).

Eleven public representations were received. These are identified by number only in Tables 1 and 2.

Comments were also received from Flinders Council and several State Government agencies.

A supplementary report to the DPEMP was requested by the EPA. Information *required* by the EPA is listed in Table 1. In addition, the EPA has encouraged the proponent to provide comment on the public and agency comments listed in Table 2.

TABLE 1: ADDITIONAL INFORMATION REQUIRED BY THE EPA BOARD

| Supplement No. | Representation No./ Agency | Comments and issues | Additional information required |
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| 1 | 6 | Contends that the purpose of the Right of Way (ROW) on the neighbouring property was to access an internal block and that because this block now has independent access the ROW “has lost its intended use”. Asserts it is not legal to use the ROW to access the quarry. | Confirm the access routes from Palana Road to the quarry site and provide the map grid coordinates of each access point to the land to which the planning application relates, noting that these access points may be relevant to the EPA Board’s determinations. |
| 1 | EPA Tasmania - Noise | No information is provided of potential noise impacts associated with use of the existing access road on the land to which the planning application relates. | If the existing access road on the land is to be used then provide details of distances of the road from residences and any other sensitive receptors, noting whether these residences are in ownership other than by the owner of the land to which the application relates. Discuss potential noise impacts associated with the use of this route as opposed to the route detailed in the DPEMP. |
| 1 | | It is noted that in the proposed access route there are 2 right angle bends nearest the neighbouring residence that are likely to result in truck breaking noise. | Discuss the potential speeds vehicles will be moving along the access route on the land and how will this translate into breaking and associated noise. |
| 1 | Flinders Council | Proposal raised during site meeting with Council to use the existing access road to the mining lease for outgoing traffic is not discussed in the DPEMP. | If a change in traffic movements is proposed, confirm all potential routes for inbound and outbound traffic, volumes of traffic on each and circumstances under which they are to be used. |

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| 1 | EPA Tasmania - Dust | <p>It is noted that according to the DPEMP, at the proposed quarry operation peak intensity the number of loads transported would be 1 every 6 minutes. This equates to one vehicle movement every 3 minutes 6 days a week over a period of 3 months. It is considered that should it be necessary to mitigate dust generation from the road surface during these periods via surface wetting that doing so would be difficult.</p> | <p>It is noted that there is an existing alternative access route to the proposed quarry on the application land. It is also noted that Council have advised that the use of the existing access road, at least for some vehicle movements, is being considered. As discussed above confirmation of vehicle route usage is required.</p> <p>Submit a dust management plan which takes into account road routes on the land to which the planning application for the proposal relates. The plan should include:</p> <p>an assessment of the potential dust generated from the road surfaces and from the quarry location to cause an environmental nuisance at the nearest residence in other ownership. This assessment should be based on available meteorological data and take into account worst case weather conditions. Mitigating factors such as distance of the routes from potential residences in other ownership and vegetation screening for each route should be taken into account.</p> <p>Procedures for dust monitoring and complaints response Practical mitigation procedures eg circumstances under which work will be ceased to allow for surface wetting or for unfavourable condition to dissipate.</p> <p>It is noted that although the EPA Board is not requiring that the dust management procedures be applied to that part of the proposed access route located off the land to which the planning application relates. It will consider such impacts directly attributable to the proposal in its decision making regarding the proposed activity. Particularly where a viable alternative route which may pose less of a potential risk is available.</p> |
| 2 | 6 | <p>Believes water spray requirements for wetting surfaces will be significant and require frequent water truck movements. This number of water trucks has not been taken into account.</p> | <p>Discuss in terms of the dust management plan required later in this information request.</p> |

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| 2 | 6 | Asserts no water source exists at the quarry and thus water would have to be imported resulting in depletion of water bores in the area | Indicate where possible sources of water for use in surface wetting are located taking into account periods where significant volumes of water for road wetting may be envisaged. |
| 3 | 6 | All run off will eventually enter the neighbours property and it is asserted this would create swamps in low spots. | Provide a description of the current condition of the receiving environment for runoff from the site, including any degradation apparent as a result of historical operations on the quarry site. Discuss any changes to runoff volume and quality likely as a result of the proposal and the potential impacts. |
| 3 | Flinders Council | Concerns raised that a 10m vegetation buffer is not sufficient to ensure discharge from the proposed sediment dam will not impact on the neighbouring land. | As above |
| 3 | 6 | Asserts sand enters the neighbouring property during heavy rains | As above |
| 4 | 6 | Asserts fly rock was deposited on the neighbouring land during a previous blast at the site and that this caused damage to mowing machinery. Concerned that the potential for fly rock to deposit on the land would prevent cropping. Refers to the reported potential for flyrock to land on the airport runway located 2,175m distant as evidence that fly rock could affect a potential cropping area of 300Ha as well as be a risk to residences, cars and people. | The blast management plan in the DPEMP must be amended to ensure neighbouring agricultural land is identified as a receiving environment and mitigation measure should be provided to specifically manage potential deposition of flyrock on that land. The potential location and facing of initial blasts is necessary information to enable assessment of potential flyrock deposition on the neighbouring agricultural land without mitigation. |

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| 5 | 6 | <p>It is asserted the VIPAC noise assessment is considered deficient for the following reasons:</p> <p>Recommends a noise limit of 50dBA which is 15-20 dBA above the assessed ambient noise level.</p> <p>Says that daytime ambient noise levels at the neighbouring residence are 40-60dB(A) however no access for measuring background noise levels was provided. In addition, there is no discussion of differences between Leq and L90 noise levels.</p> <p>No Lmax levels at the neighbouring residence provided. It is noted there is no explanation of why an adjustment for impulsivity is not necessary.</p> <p>Does not measure noise levels of all activities occurring at the same time.</p> <p>Considers a maximum of only 3 trucks every 10 minutes travelling along the access route.</p> <p>The distance between the location of the blast and the curtilage of the neighbouring dwelling is estimated at 770m rather than the reported 800m distance. Given the closeness of the estimated Air blast overpressure to the assessment criteria the difference is considered critical.</p> <p>Blast assessment does not account for topography.</p> <p>As no blast plan has been prepared the ability to meet the overpressure levels cannot be assessed.</p> <p>No working of air blast overpressure is provided.</p> | <p>Discuss why a maximum charge mass/delay of 100kg was chosen for the purpose of assessment? What would be the actual maximum charge mas/delay be?</p> <p>NB: the above information is necessary to assess likelihood of air blast overpressure exceedances. No additional information is needed to address the other comments made in relation to the VIPAC report.</p> |
| 6 | MRT | <p>“The mine plan fails to identify any areas that will be needed for overburden/topsoil/vegetation stockpiling purposes.”</p> | <p>Provide a revised mine layout showing indicative locations for stockpiling of overburden, topsoil and vegetation.</p> |

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| <p>6</p> | | <p>“The mine plan does not appear to represent the true space required for stockpiling, truck movements etc. and appears to represent a conceptual schematic of the sites layout only. The mine plan appears to be somewhat optimistic in its expectations for it to remain inside the current footprint.”</p> | <p>Provide a revised mine plan containing sufficient information to demonstrate that at peak production all truck movements to from and on the site can be accommodated within the proposed footprint, as well as ongoing operations and stockpiling.</p> <p>Stockpiles include overburden, topsoil and vegetation stockpiles.</p> <p>The initial proposed disturbance footprint must be defined and areas to be progressively rehabilitated as the quarry extends should be identified. The layout should be based on typical dimensions of equipment, turning requirements for trucks and other vehicles and practical working volumes of stockpiles. It must be demonstrated that uncontrolled emission of materials from the proposed footprint or expansion of the footprint beyond the proposed area will not occur.</p> |
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TABLE 2: OTHER MATTERS RAISED DURING THE PUBLIC CONSULTATION PERIOD

| Representation No./ Agency | Comments and issues | Further Info Requested by the EPA? | EPA Comments | Further Info provided by applicant |
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| 1,3 | Assertion that the public roads are not suitable for heavy trucks or prolonged use by smaller trucks. Suggestion that the size of truck and the number of trucks per day be limited. | No | This matter is outside the EPA Board's responsibility. | Refer to the Traffic Impact Assessment (Attachment S2) which considered pavement impacts. |
| 1,2,4,5,7 | Concerns that large number of trucks using public roads will create a traffic hazard. Two representors identified the "tourist season" as a particular concern. One representor considered such high levels of traffic were inconsistent with the Planning Scheme. Suggestion that speed limit for trucks would be appropriate | No | This matter is outside the EPA Board's responsibility. | Refer to the Traffic Impact Assessment (Attachment S2) which considered pavement impacts. |
| 1,2,4,5 | Concerns that traffic along public roads associated with the quarrying operation will create a noise nuisance (or that noise is not discussed) and general loss of amenity for adjacent residences. | Yes | It is noted that environmental nuisance directly attributable to traffic movements associated with the proposal can be taken into account by the EPA Board in its determinations. Road condition and use will affect the potential for the proposal to cause environmental nuisance. This is a matter which Council may consider during the planning assessment. Provide a description of potential transport routes along public roads, residential setbacks along these | See Section B.2.1 Potential Transport Routes. |

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| | | | routes and vehicle movements along these routes during peak production compared with during other periods to assist the EPA Board. Such information would be particularly relevant for hours of operation proposed outside of those specified in the Quarry Code of Practice. | |
| 1,2,4, 5,7 | The visual impact of the existing quarry is noted eg as a “scar on the landscape”. | No | This matter is outside the EPA Board’s responsibility. | See section B.2.4 Visibility . |
| | Concerns raised that the proposal will increase the extent of the visual impact. One representor considers Visual impact should be assessed from the perspective of aircraft arriving and departing. | | | |
| 3,5 | Belief that the proposal will benefit one individual for little benefit to the community as a whole, in particular potential damage to roads, increased traffic and noise are noted against some short term work as a benefit. | Yes | The economic uses of quarried material and benefits of the proposal have not been described in any detail in the DPEMP, nor weighed up against potential environmental impacts. Such information would provide useful context for the EPA Board as well as representors. | See Section B.2.2 Economic matters . |
| 4 | Considers restriction should be placed on the potential for quarried materials to be exported. | Yes | The economic uses of quarried material and benefits of the proposal have not been described in any detail in the DPEMP, nor weighed up against potential environmental impacts. Such information would provide useful context for the EPA Board as well as representors. | See Section B.2.2 Economic matters . |
| 1,5,7 | A maximum production limit of 20,000 tonnes [or | No | The environmental impacts of the | |

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| | less] is considered adequate for the islands needs and that a permit for the higher production limit is unnecessary. | | proposal will be assessed for a production limit of 120,000 tonnes per annum. | |
| 7 | The annual production capacity of the activity is considered excessive. Long term theoretical extraction volumes would result in significant landscape impacts. No consideration beyond the 20 year timeframe is made. | No | Sufficient information has been provided in the DPEMP. | The maximum possible extent of the quarry is shown in Figure B-1 of the DPEMP. |
| 2,6 | <p>The following errors are identified in the DPEMP:</p> <ul style="list-style-type: none"> • Extraction to start July/August 2016. • Boyer Rd does not exist on Flinders Island. • This quarry is not a coal mine. • Repairs will be floated to the Lilydale Workshop. • Material for the Markana Park runway seems to apply to Sunbury and the rock mentioned is quartz. • There is no Gundagi Rd on Flinders Island. <p>One representor believes the report to be a cut and paste of a report for a coal mine in Bangor and therefore infers it is not valid documentation.</p> | Yes | Although these errors are not considered to affect the assessment made of the environmental aspects of the operation, it is considered that correction would remove any inferred ambiguity. | See Section B.2.6 Corrections. |
| 2,4,5,6 | <p>Either dispute or consider there is insufficient evidence provided to support assumptions that the rock from the quarry can be used for Flinders Island Airport runways and Council and State Government roads.</p> <p>One representor was concerned regarding the lack of detail of all potential projects for the gravel resource believing it makes it difficult to determine if the DPEMP is sufficient.</p> | Yes | The economic aspects of the proposal have not been described in any detail in the DPEMP, nor weighed up against potential environmental impacts. Such information would provide useful context for the EPA Board as well as representors. | See Section B.2.2 Economic matters. |
| 2,4,5 | Assertion bitumen roads were repaired in 2016 following damage caused by “pine plantation trucks”. Inference truck movements to and from the activity would cause similar issues. On | No | This matter is outside the EPA Board’s responsibility. | Any damage to roads caused by a previous activity have nothing to do with this application. |

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| | representation concern general regarding road damage and costs. | | | |
| 2,4,5 | Concerns commitments won't be carried out or conditions won't be enforced | No | Environmental aspects of the proposal will be assessed on its merits and conditions or restrictions imposed accordingly. | The planning system is underpinned by legislation (<i>Land Use Planning and Approvals Act 1993</i> , <i>Environmental Management and Pollution Control Act 1994</i> and <i>Mineral Resources Development Act 1999</i>) which addresses matters of non-compliance with permit conditions, commitments and lease terms. These matters are outside the scope of the assessment process. |
| 2,6 | The existing quarry has not been in operation continuously since 1986 and therefore the quarry being termed a "working quarry" is disputed. One representor states that because operations have largely ceased thus the proposal should be treated as "an application for a new level 2 quarry". | No | The planning application is for a new activity. | The existing quarry has existing use rights. The current application is a new application. |
| 2,5 | Consider the proposal will reduce market value of adjoining properties. No recompense for this loss is mentioned in the documentation. | No | This matter is outside the EPA Board's responsibility. | Land and real estate values are not a matter for contemplation in the planning system. |
| 2 | Assertion that if fly rock lands on an existing crop it would be impossible to clean up and the crop would be lost. | No | The blast management plan must be amended as already discussed. | See section B.1.4 Item 4 – Blast management and fly rock and Attachment S5 for a revised Blast |

| | | | | Management Plan. |
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| 3 | As the access road (in part) is located on an adjoining property considers an agreement with the adjoining landowner should be in place. | Yes | Details of discussion with the adjacent landowner regarding access to the proposal site should be provided. Without an agreement, although access may be legal, it is more likely that environmental nuisance complaints will be made and require resolution. | See section B.2.3 Access Road. |
| 3 | States proponent does not provide data to support assertion that the transport of quarry material to the island by barge is more expensive. Therefore it cannot be assessed whether the proposal is more favourable [economically] that the existing situation. | Yes | The economic aspects of the proposal have not been described in any detail in the DPEMP, nor weighed up against potential environmental impacts. Such information would provide useful context for the EPA Board as well as representors. | See Section B.2.2 Economic matters. |
| 10,11 | Consider the proposal will provide jobs and material which one representor notes would otherwise be imported. | Yes | The economic aspects of the proposal have not been described in any detail in the DPEMP, nor weighed up against potential environmental impacts. Such information would provide useful context for the EPA Board as well as representors. | See Section B.2.2 Economic matters. |
| 9 | Considers that it is vital the proposal proceed for the “economic and social prosperity of the island” | Yes | The economic aspects of the proposal have not been described in any detail in the DPEMP, nor weighed up against potential environmental impacts. Such information would provide useful | See Section B.2.2 Economic matters. |

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| | | | context for the EPA Board as well as representors. | |
| 4,5 | Considers the proposed hours of operation to be excessive | Yes | Operations outside of the ‘acceptable standard’ hours specified within the Quarry Code of Practice should be justified. | See discussion within section B.2.1 Potential Transport Routes. |
| 5 | Believes that the proposal will impact on tourism | Yes | The economic aspects of the proposal have not been described in any detail in the DPEMP, nor weighed up against potential environmental impacts. Such information would provide useful context for the EPA Board as well as representors. | See Section B.2.2 Economic matters. |
| 6 | Notes that when the original level 1 quarry was approved all exclusion zones were on the owners land and that is no longer the case as some of the land has been purchased by the neighbour. | No | Environmental aspects of the proposal will be assessed in relation to the potential impact on nearby residences and other relevant sensitive receptors. | The Scheme inclusive of zone and overlays are those to be used for the assessment of the application. Ownership of the land upon which these zones and overlays occur are irrelevant. |
| 6 | Does not believe the proposal meets the quarry code of practice in “most aspects” Refers to the following distances recommended by the quarry code of practice: 1000m for blasting. Separation distance is to the nearest residence is 300m less the considers blasting should be prohibited. “the containment area should be within the boundaries of the quarry lease” Crushing distance should be 750m however in this | No | Sufficient information is provided in the DPEMP to enable assessment against the quarry code of practice. | |

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| | case the distance is 600m. All dust should be contained within the quarry lease. | | | |
| 6 | Notes there is an existing access road on the land to which the application relates. | Yes | As discussed, if this access road is to be used then some additional information is required in relation to potential noise and dust impacts. In addition it would be of benefit to state why this road was, at least initially, not considered for use as the primary access to the quarry. | See discussion in section B.1.1 Item 1 – Access and associated matters |
| 6 | Asserts truck noise for the access road at the nearest residence is ignored. | No | Truck noise is not ignored. | Considerable attention has been given to modelling (and re-modelling) truck noise from the access ways into and out of the Land. |
| 6 | Believes ambient noise readings were carried out they were selectively taken during ploughing resulting in elevated recorded level. | No | The measured ambient noise level is considered consistent with levels measured at other locations where farming activity occurs from time to time. | |
| 6 | Asserts ambient noise is 20dBA at most and thus the assessment criteria of 50dBA is 30dBA above criteria and therefore “not allowed”. | No | For daytime noise levels 50dBA is considered a reasonable assessment criterion. It should however be noted that lower limits may be considered for early morning evening or night time activity. | |
| 6 | Considers that echo effect of the terrain has not been taken into account and that this would significantly increase noise pollution. | No | A 3 dimensional terrain model was used and reflecting surfaces are taken into account by SoundPLAN. | |
| 6 | Infers noise report is in error as it refers to noise made by cows and there are no cows on the property. | No | Does not impact on report findings. | |

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| 6 | Asserts no mention made of truck passing the house every 6 minutes. | No | This is detailed and modelled. | |
| 6 | Asserts that during operation at the site 13 years ago noise emissions were significant | No | Not relevant to the current assessment. | |
| 6 | Considers the suggestion to install noise proof windows or similar implies noise will be a problem. | No | Not relevant to the current assessment. | |
| 6 | Believes that with truck breaking and acceleration noise from truck movements along the access road will be significantly higher than predicted. | Yes | Additional information is required regarding likely speeds of vehicles and associated breaking noise on the land to which the application relates. Speeds and associated noise outside that land are not a matter considered by the Board directly, however environment impacts attributable to the proposed activity on the land can be considered in the EPA Board's determination. | See discussion in section B.1.1 Item 1 – Access and associated matters |
| 6 | Asserts a noise of 40 dBA at the house would be equivalent to a lawn mower running 15 metres from the house for the duration major projects periods | No | The assertion is not supported by the literature in relation to this issue. | |
| 6 | Considers there will be a loss of privacy for the neighbouring residence. | No | This matter is outside the EPA Board's responsibility. | |
| 6 | Oil leaks would result in contamination of groundwater on neighbouring land. | No | Sufficient information has been provided in the DPEMP. | |
| 6 | "All diesel powered vehicles and machinery will need to have particulate filters and Add Blue systems." | No | This matter is outside the EPA Board's responsibility. | |
| 6 | Asserts that the combined diesel exhaust and particulate matter pollution pose an elevated health risk for nearby residents | No | The use of diesel powered machinery is ubiquitous in agricultural areas | |
| 6 | Concerned about the potential for deposition of | No | A dust management plan has been | |
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| | dust and diesel exhaust fumes on crops | | required. | Dust management and associated matters. A Dust Management Plan has been prepared and is in Attachment S3. |
| 6 | Concerned silica dust will be emitted if vehicle loads not properly wetted and that this has the potential to cause silicosis | No | In relation to other quarries, advice from Department of Health and Human Services has been received to the effect that silicosis is primarily an occupational health and safety issue and is not a population health issue. | |
| 6 | Concern regarding dust contamination of rainwater tanks on the neighbouring property making it unsuitable for drinking. This would mean the neighbour would have to import water at great cost. | No | A dust management plan has been required. | See section B.1.2 Item 2 – Dust management and associated matters. A Dust Management Plan has been prepared and is in Attachment S3. |
| 6 | Refers to a quarry code of practice acceptable standard that “all dust must be contained within the quarry lease” [Acceptable standard 6.5.2 reads “Dust should not normally be visible crossing the boundary of the premises”] | No | A dust management plan has been required. | See section B.1.2 Item 2 – Dust management and associated matters. A Dust Management Plan has been prepared and is in Attachment S3. |
| 6 | Discusses health hazards associated with small sized particulate matter (PM10 and PM2.5) | No | Emission of a significant fine particulate fraction is not associated with normal quarrying operations. | |
| 6 | Concerns raised about enforcement, bond payment to Council for damage caused by the proposal (including to roads) and the responsible person for quarry operations being The Adams Group rather than Markarna Grazing. | No | This matter is outside the EPA Board’s responsibility. | The planning system is underpinned by legislation (<i>Land Use Planning and Approvals Act 1993, Environmental Management and Pollution Control Act 1994</i> and |

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| | | | | <p><i>Mineral Resources Development Act 1999</i>) which addresses matters of non-compliance with permit conditions, commitments and lease terms.</p> <p>These matters are outside the scope of the assessment process.</p> |
| 6 | Concerned a traffic impact assessment has not been carried out. | No | This matter is outside the EPA Board's responsibility. | A traffic impact assessment has been conducted (see Attachment S2). |
| 6 | Concerned the quarry will impact on the growing of barley on the neighbouring land for a whisky distillery due to dust and diesel fume contamination and the damage to the "Clean Green" brand. | No | The use of diesel powered machinery is ubiquitous in agricultural areas. Brand issues are outside the EPA Board's responsibility. | |
| 6 | Argues that if the quarry were approved it would mean the proposed interim land zoning of Rural Living could not be made permanent as it would be inconsistent with the quarry presence. | No | This matter is outside the EPA Board's responsibility. | Future potential land use and development is not a consideration when determining a planning application. |
| 6 | Asserts wedge tailed eagles visit the quarry regularly. Without a survey for nests in the vicinity of the quarry it is asserted that the potential impact on the species is unknown. | No | An assessment of the potential for Wedge Tailed Eagle nesting habitat is provided. The Policy and Conservation Advice Branch, DPIPW, did not raise concerns regarding this assessment. | |
| 6 | Asserts swift parrots feed on the neighbouring property contrary to reported sightings being at some distance. | No | An assessment of the potential for swift parrot breeding and foraging habitat is provided. The Policy and Conservation Advice Branch, | |

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| | | | DPIPWE, did not raise concerns regarding this assessment. | |
| 6 | All run off will report to the neighbour's paddocks. If runoff is acidic it would mean frequent liming would be required. | No | Sufficient information is provided in the DPEMP to assess this issue. | |
| 6 | It is asserted the proposal does not comply with the <i>Flinders Island Planning Scheme 2000</i> and therefore should be rejected. | No | This matter is outside the EPA Board's responsibility. | The Scheme is a matter for the planning authority. |
| 6 | Concerned regarding the importation of weeds from roadsides, particularly Parramatta Grass. Considers washdown of all vehicles entering the property is necessary. | No | Sufficient information provided in the DPEMP | |
| 7 | DPEMP does not discuss the potential for recycling of materials currently going to landfill as a component of roadbuilding materials | No | The proposal relates to a rock extraction activity. Opportunities for incorporation of other materials into road construction works are outside the scope of the Boards assessment. | |
| Council | Site distance along Palana road will require removal of vegetation. How is site distance to be guaranteed given that the proponent does not own the land on either side of the access point from Palana Road. | No | This matter is outside the EPA Board's responsibility. | Council is responsible for maintaining roadside vegetation to the benefit of all road users. |
| Council | "The current site can be seen as a scar on the land. Further extension of the existing site may mean a large visual scar on the hillside." | No | This matter is outside the EPA Board's responsibility. | See section B.2.4 Visibility . |
| Council | "A recent farm fire highlighted the need for Bushfire Protection, to the Community, from high risk activities." Council also states that "environmental impacts may also arise from a site fire due to the nature of materials (fuel etc) used on site." | Yes | The nature of the activity proposed on the land is described however no comment is made regarding the relative sensitivity of the activity to bushfire and potential associated emissions, or the potential for generation of escaped fire, | See section B.2.7 Fire risk . |

| | | | compared to other activities consistent with the land zoning. | |
|------|--|-----|---|--|
| PCAB | <p>“The DPEMP indicates that <i>Lasiopetalum discolor</i> is present at the site. If present, this would represent a significant increase in range for the species, as there are no records of this taxon from Flinders Island (the only extant population in Tasmania is on Prime Seal Island). Internal experts have advised that the population is more likely to be the non- listed <i>Lasiopetalum macrophyllum</i>. It is therefore recommended that specimens of the plant be lodged at the Tasmanian Herbarium, for confirmation (or otherwise) of species identification.</p> <p>Should the population be confirmed to be <i>Lasiopetalum discolor</i>, a permit to take would be required and it is recommended that prior to lodgement of an application further advice should be sought from PCAB. As a minimum the applicant would be required to develop a mitigation plan in accordance with the “mitigation hierarchy” set out in Appendix 4 of the Department of Primary Industries, Parks, Water and Environment Guidelines for Natural Values Surveys - Terrestrial Development Proposals.”</p> | No | This information is necessary in relation to securing a “permit to take” under the <i>Threatened Species Protection Act 1995</i> ”. | See section B.2.5 Threatened species - correction. |
| MRT | The mine cross section is not to scale. | No | Does not impact upon the EPA Board’s assessment | |
| MRT | “The Particle size distribution report sent to Golder Associates P/L Melbourne Laboratory states in the Sample history & comments that the sampled material is from stockpiled material at Mt Aitken Road, Sunbury, Victoria. This may well be material that was transported from the Flinders quarry 1229P/M for the purposes of assessment, | Yes | This information may be useful in describing the economic benefits associated with the proposal. | Material was taken from The Gums Quarry to Victoria where it was stored at the Mt Aitken Quarry prior to being tested. |

| | | | | |
|--|---|--|--|--|
| | however, it would be appreciated to know with certainty if this is in fact the case.” | | | |
|--|---|--|--|--|

PART B - SUPPLEMENT RESPONSES**B.1 TABLE 1 ITEMS****B.1.1 Item 1 – Access and associated matters**

Information requested –

| |
|--|
| <p>Confirm the access routes from Palana Road to the quarry site and provide the map grid coordinates of each access point to the land to which the planning application relates, noting that these access points may be relevant to the EPA Board’s determinations.</p> |
| <p>If the existing access road on the land is to be used then provide details of distances of the road from residences and any other sensitive receptors, noting whether these residences are in ownership other than by the owner of the land to which the application relates.</p> <p>Discuss potential noise impacts associated with the use of this route as opposed to the route detailed in the DPEMP.</p> |
| <p>Discuss the potential speeds vehicles will be moving along the access route on the land and how will this translate into breaking and associated noise.</p> |
| <p>If a change in traffic movements is proposed, confirm all potential routes for inbound and outbound traffic, volumes of traffic on each and circumstances under which they are to be used.</p> |
| <p>It is noted that there is an existing alternative access route to the proposed quarry on the application land. It is also noted that Council have advised that the use of the existing access road, at least for some vehicle movements, is being considered. As discussed above confirmation of vehicle route usage is required.</p> <p>Submit a dust management plan which takes into account road routes on the land to which the planning application for the proposal relates. The plan should include:</p> <ul style="list-style-type: none"> • an assessment of the potential dust generated from the road surfaces and from the quarry location to cause an environmental nuisance at the nearest residence in other ownership. This assessment should be based on available meteorological data and take into account worst case weather conditions. Mitigating factors such as distance of the routes from potential residences in other ownership and vegetation screening for each route should be taken into account. • Procedures for dust monitoring and complaints response • Practical mitigation procedures eg circumstances under which work will be ceased to allow for surface wetting or for unfavourable condition to dissipate. <p>It is noted that although the EPA Board is not requiring that the dust management procedures be applied to that part of the proposed access route located off the land to which the planning application relates. It will consider such impacts directly attributable to the proposal in its decision making regarding the proposed activity. Particularly where a viable alternative route which may pose less of a potential risk is available.</p> |

The grid coordinates (GDA94 datum) for the access ways into the **Land** are shown in Figure S-1a. This includes the Right of Way and the main access into the land.

There is a proposed modification to the access arrangements as a direct response to the representations received by the planning authority. The alteration is not a fundamental change to the activity, rather it is reflective of the applicant’s willingness to respond positively to the representations received during the advertising process. The representation phase is a statutory process to facilitate public participation in the planning process, an objective of the Resource Management and Planning System.

Consequently, the following will be applied –

1. **Major Projects** – A loop will be established as shown in Figure S1a for trucks to enter the ROW to access stockpiled material on 634 Palana Road which will then exit via the existing access to 634 Palana Road. The SISD distances required by the Scheme for both the ROW and existing access are met. Trucks will cart material from the quarry to the stockpile location, but these will be separate to the trucks collecting and delivering the material. The process of trucks entering the ROW and exiting via the existing access is depicted in Figure S1a; and
2. **Normal Production** – the existing access will be used as depicted in Figure S1b.

The speed of trucks will be approximately 20-30km/hr.

There has been additional noise modelling and analyses conducted by Dr Alex McLeod (see Attachment S1) of the proposed traffic movement locations and pattern of truck numbers. Of note is that the trucks entering the ROW will be empty and hence they will not be under load.

A **Dust Management Plan** is contained within Attachment S3.

Stockpile location

A letter of support from the landowner for the location of the stockpiles associated with Major Projects is in Attachment 10.

The vegetation of the area within which the stockpiles will be created (and then removed at the completion of the Major Project) is *Allocasuarina verticillata* forest (TASVEG – NAV). This vegetation type is a non-threatened community which is common in the Palana Road area and on the island generally. It supports no threatened species in this location.

Right-of-way

Figure S3 shows the distances from the ROW and access road (both to be used for Major projects) to nearest residences, including the residence that occurs on the property (634 Palana Road) where the stockpiles are to be created and accessed for Major Projects.

The use of the ROW [we have legal advice that identifies the proposal outlined by this Development is a lawful use of the ROW which contrasts with the purported unlawful stated use of the ROW by a representor], combined with the existing access presents a viable carting option for the operator for major projects whilst being reasonable in minimising the extent of potential impact to adjoining landowners. An EPA imposed prohibition on the use of the ROW, which could only be done by it on environmental impact grounds, would be both unjustified on the environmental impact assessment evidence in the DPEMP and this Supplement and make the operation of major projects impracticable.

Traffic volumes will remain unchanged as to those presented in Tables 3 and 4 of the DPEMP, however for major projects the trucks will enter the ROW and exit via the main access. For ease of understanding, and to avoid any possibility for confusion or ambiguity, Tables S1 and S2 provide truck volumes for each access where applicable.

Table S1. Examples of gravel supplies and associated truck generation for Normal Production

| Type of Supply | Size of Supply | Period of Supply and Truck Movements |
|----------------|---|---|
| Campaign | 2,000 tonnes using 30 t trucks (67 truckloads) | 5 days = 14 trucks/day = 28 truck movements/day |

| | | |
|------------|--|---|
| Campaign | 2,000 tonnes using 20 t trucks (100 truckloads) | 6 days = 17 trucks/day = 34 truck movements/day |
| Low volume | 200 tonnes using 12 t truck (17 truckloads) | 2 days = 9 trucks/day = 18 truck movements/day |

As noted in the DPEMP, it is likely that 120 truck movements per day will be the maximum number given the physical constraints of access into the quarry and the time needed to load trucks with the gravel as they arrive. Over a 12-hour day (0700 to 1900 hrs) this equates to 10 trucks per hour, on average, which means that there would be about 1 truck every 6 minutes.

Table S2. Examples of gravel supplies and associated truck generation for Major Projects

| Type of Supply | Size of Supply | Period of Supply and Truck Movements | Truck movements along the ROW |
|----------------|--|--|--|
| Campaign | 60,000 tonnes using 30 t trucks (2,000 truckloads) | 60 days = 34 trucks/day = 68 truck movements per day | 32 truck movements per day (about 3 per hour over a 10-hour day) |
| Campaign | 40,000 tonnes using 30 t trucks (1,334 truckloads) | 45 days = 30 trucks/day = 60 truck movements per day | 30 truck movements per day (3 per hour over a 10-hour day) |
| Campaign | 100,000 tonnes using 30 t trucks (3,333 truckloads) | 60 days = 56 trucks/day = 112 truck movements per day | 56 truck movements per day (6 per hour over a 10-hour day) |

B.1.2 Item 2 – Dust management and associated matters

Information requested –

| |
|---|
| Discuss in terms of the dust management plan required later in this information request. |
| Indicate where possible sources of water for use in surface wetting are located taking into account periods where significant volumes of water for road wetting may be envisaged. |

A **Dust Management Plan** is contained within Attachment S3.

There are periods when water is likely to be limited, or absent from the sediment pond. The Dust Management Plan contemplates such occurrences by having alternative options that do not rely on water. Note that the quarry may not operate during all or part of the period when water is not readily available on site. The operator may choose to install a water tank in the quarry to hold water specifically for the crusher sprinkler system or for use when water is absent from the sediment pond. It is likely to be more cost-effective to utilise a surface stabilisation agent (chemical dust suppressant) than import water from further afield.

Note that the use of commercially available chemical dust suppressants is **lawful** in Tasmania. The manufacturer's recommendation on use will be adopted by the quarry operator.

B.1.3 Item 3 – Water management and receiving environment

Information requested –

Provide a description of the current condition of the receiving environment for runoff from the site, including any degradation apparent as a result of historical operations on the quarry site. Discuss any changes to runoff volume and quality likely as a result of the proposal and the potential impacts.

Environment Sensitivity

The receiving environment is of low sensitivity as it is pasture - cropland.

The Protected Environmental Values for the Flinders Municipal Area are described in the document *ENVIRONMENTAL MANAGEMENT GOALS for TASMANIAN SURFACE WATERS - FLINDERS MUNICIPAL AREA CATCHMENTS* November 2002. The document is available from http://epa.tas.gov.au/Documents/Flinders_Municipal_Area_Catchments_Final_Paper.pdf

For waters flowing through private land the identified PEV's for Agricultural uses are –

‘Surface Waters flowing through Private Land (including forest on private land)

... 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 may be harvested; that is acceptable for irrigation and stock watering purposes;’

There are no specific targets for water quality in the document. Given the measures outlined in the DPEMP for the management of water quality (eg. Sediment pond construction that is appropriately sized and located) it is likely that the quality of the surface waters flowing from the Land will be suitable for Agricultural uses. Of note is the sandy environment into which the creeklines/drainage lines flow from the Land into the adjacent agricultural lands. There are no perennial creeklines or drainage lines, surface flows would be ephemeral as evident by the Google Earth images provided in section B.1.4 Item 4 – Blast management and fly rock of this Supplement. If there are surface flows onto the adjacent pasture from the Land the evidence suggests that -

1. they would likely be short-term events as there are no scars, erosion channels, defined water course locations etc in the agricultural lands; and
2. the water would quickly dissipate into the sandy soils of the plains to the west of the quarry.

Concerns raised about water quality and quantity

Council expressed concern about surface water discharge. The current sediment control measures operating at the quarry are those installed by the Council as they were the previous operator of the quarry. It was noted by a representor that run off will eventually enter their property and it is thus asserted that this would create swamps in low spots.

There does not appear to be any detrimental effects to the receiving environment of from the discharge of water from the quarry onto those lands.

Note that the current water/sediment control measures are virtually dysfunctional and water has therefore been flowing freely into the receiving environment with little sediment control. Logically, the installation of such a system that is appropriately sized and located would serve to improve this situation.

Images below show the sediment pond arrangements as they currently occur and the receiving environment.



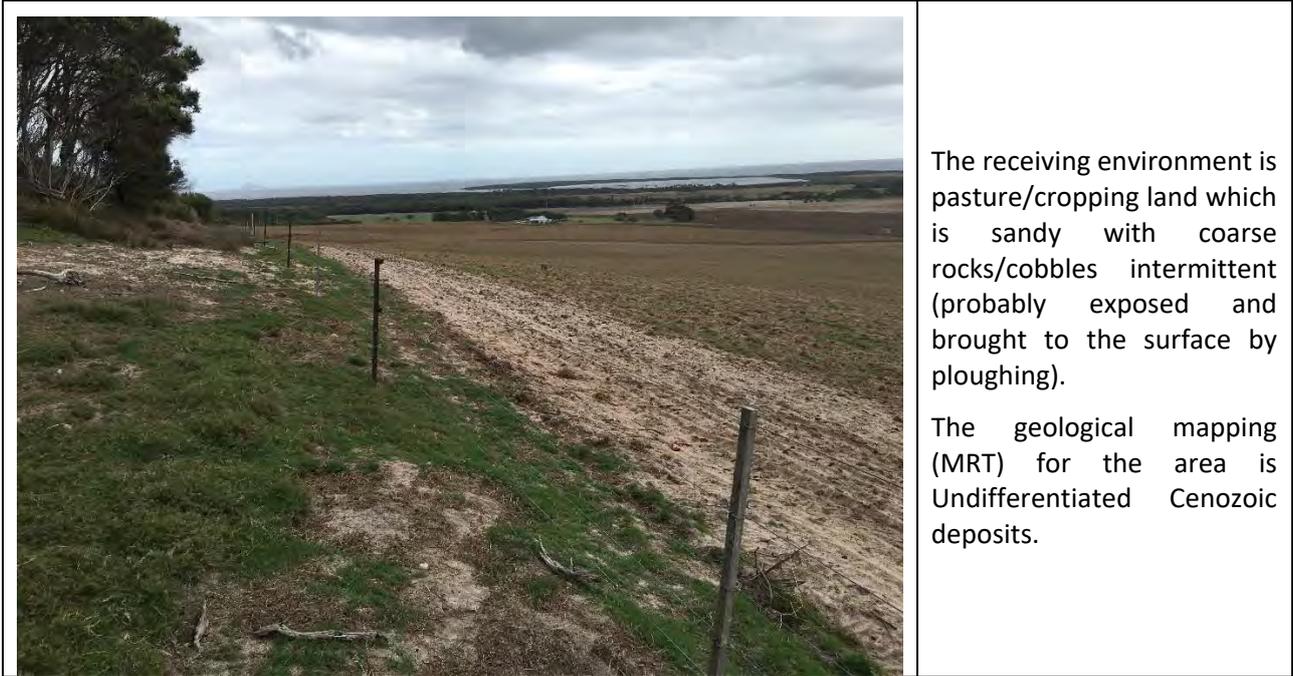
Existing sediment pond from previous operations of the quarry.

The 'pond' is sediment-laden and being colonised by sheoak (*Allocasuarina verticillata*). The quantity and age of the seedlings of this species is suggestive that the pond has not been cleaned (to maintain water holding/sediment removal efficacy) for many years.



Existing sediment pond from previous operations of the quarry.

Note the agricultural land to the north of the vegetative screen.



Further assessment of water quantity

In terms of the volume of runoff etc it is necessary to recap the current runoff location and area of the catchment.

The ridgeline and slope system upon which the quarry is located has several drainage lines that flow westward from the catchment boundary formed by the top of the ridgeline. The low relief topography surrounded by the hills from Blue Rocks to Parrys Bay is comprised of well-drained sands with drainage lines that report to wet areas on the edge of Parrys Bay (eg near Long Point Road).

The overflow from the sediment pond is into some woody debris and remnant native vegetation in the Mining Lease and then into agricultural land. There is no clearly defined channel nor any substantial evidence that the sediment pond overflows often or that when it does the volumes are large or fast flowing. The well-drained nature of the sandy loams on the flats to the west of the quarry are such that water may not be able to accumulate to create surface flows.

Historically, the catchments would have been approximately those shown in Figure S2-a. The catchments are 11.34 and 0.64 hectares (11.98 hectares total) – with the smaller catchment area generating surface flows that would have been discharged into the current location of the sediment pond. The drainage of the catchment was in effect directed to the smaller catchment.

The current catchment arrangement is the opposite – there are three sub-catchments present which are 0.12 hectares, 1.25 hectares and 10.57 hectares (11.94 hectares total).

There is practically no net increase in the volume of water being discharged from the Mining Lease to the adjoining land – the land areas of the catchments are virtually the same (11.98 and 11.94 hectares respectively).

When the quarry is using water from the sediment pond it is more likely that there would be marginally less surface runoff onto the adjoining land, not more.

B.1.4 Item 4 – Blast management and fly rock

Information requested –

The blast management plan in the DPEMP must be amended to ensure neighbouring agricultural land is identified as a receiving environment and mitigation measure should be provided to specifically manage potential deposition of flyrock on that land. The potential location and facing of initial blasts is necessary information to enable assessment of potential flyrock deposition on the neighbouring agricultural land without mitigation.

A revised (April 2017) **Blast Management Plan** is provided in Attachment S5.

We have taken advice from a blast contractor and consequently, we have removed from the Blast Management Plan the reference to fly rock potential impacting upon the Flinders Island Airport. The airport is too far from the quarry for there to be a risk of fly rock. We have however retained the acknowledgment that fly-rock may, under very poor blast conditions, pose a risk to aircraft flying near the quarry – the management measures that relate to this risk are retained within the plan.

The neighbouring land is agricultural land used for grazing and cropping, as noted by the neighbour in their representation.

Modern blast techniques and the use of a suitably qualified and insured engineer/blast contractor minimise the risk of generating fly-rock. There are many examples of quarries being located adjacent to and within highly agricultural landscapes – the fly rock risk can be suitably managed and mitigated.

As noted in the DPEMP, 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. The Adams Group or their delegated agent will receive a copy of this risk assessment and safety audit and associated documentation that supports the placement of drill holes, levels of explosives used and the detonation devices.

The following has been retained in the **Blast Management Plan** (Attachment S5) -

‘Rock Debris (‘fly rock’) – monitoring and management

The quarry is located well away from the nearest house and there is an embankment in place between the blast zone and the nearest residence (Figure 2). Notwithstanding this, a video system will be used to record the blast with it focused specifically on the creation or otherwise of fly rock into the adjoining land or other land.’

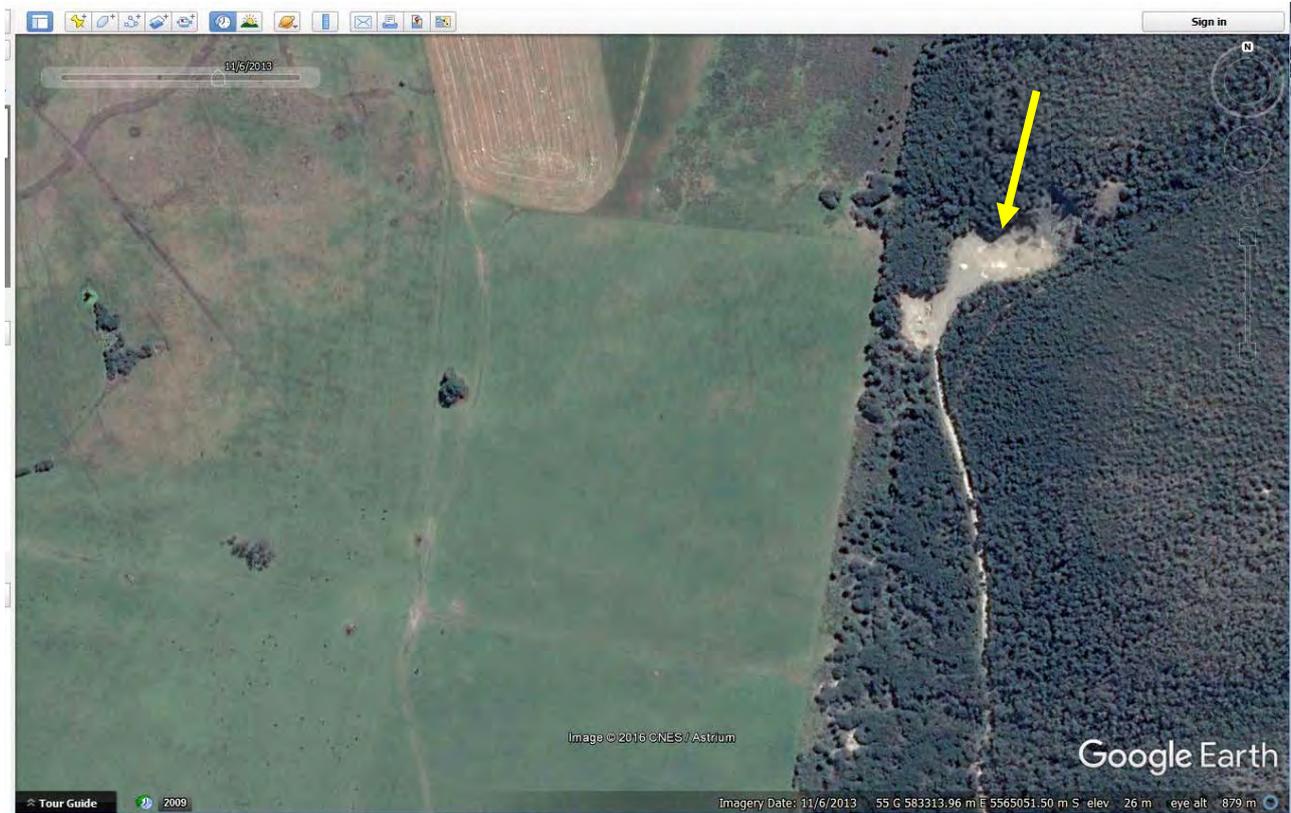
The use of video footage, which is relatively inexpensive given modern technology, can be used to determine if fly-rock occurred and the trajectory at which it left the quarry. The blast design (pattern, aspect, charge mass delay etc) can also be used by an engineer to calculate distance and trajectory of fly-rock that may have been caused by a poor blast. It is worth noting that the risk of fly-rock is very low given the modern explosives, use of planning/calculations to accurately determine blast characteristics and other measures (eg blast mats) if required/stipulated by the blast contractor. Only suitably experienced persons can be accredited with the use of explosives. We therefore do not see the relevance of the potential location and facing of the initial blasts – the initial blast has no greater or lesser risk of generating fly-rock than any subsequent blast.

The below images accessed from Google Earth suggest that the landscape west of the quarry is used for agriculture – pasture and cropping. Indeed, the image in June 2013 indicates that the land is cropped by the ploughed paddock at the top of the image. Harvest/ploughed lines can be seen in the paddock immediately adjacent to the Mining Lease (December 2015 image) – suggestive of the use of machinery that can plough or harvest crops.

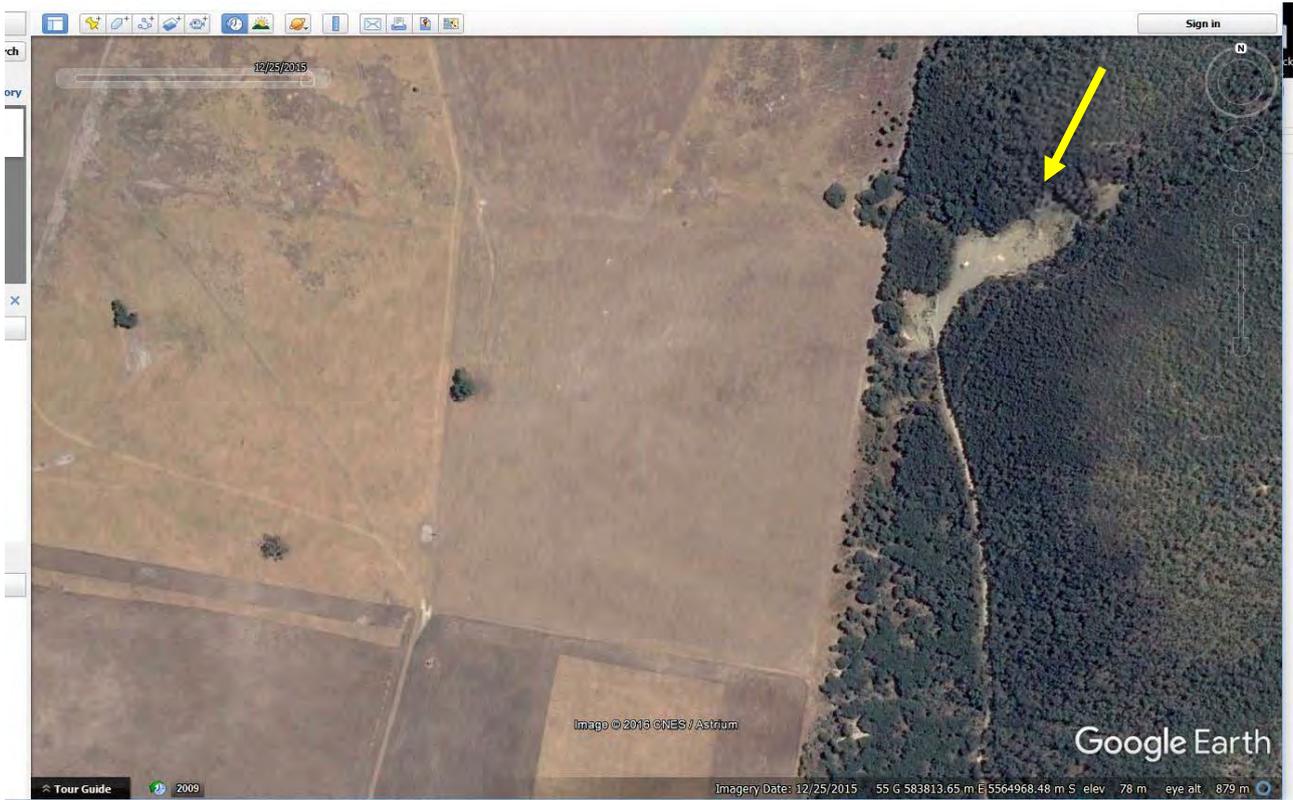
The images below show the location of the quarry as a yellow arrow relative to the adjacent agricultural land.

If these paddocks became ‘full of fly rock’ by previous operator’s poor use of the quarry 13 years ago then it was at that time the landowner of the adjacent agricultural land should have acted to correct the mistake – their failure to act about an alleged fly-rock incident cannot be used now as a justification to prevent an activity from occurring.

11 June 2013 – Google Earth Image



25 December 2015 – Google Earth Image



B.1.5 Item 5 – Charge mass delay (blasting)

Information requested –

Discuss why a maximum charge mass/delay of 100kg was chosen for the purpose of assessment? What would be the actual maximum charge mas/delay be? NB: the above information is necessary to assess likelihood of air blast overpressure exceedances. No additional information is needed to address the other comments made in relation to the VIPAC report.

A charge mass delay of 100 kg was chosen as that is the likely charge mass delay used for the activity. The material to be blasted is known to respond well to this charge mass delay as suggested to us by a blast contractor. It is very unlikely that a charge mass delay exceeding 100 kg would be used, rather it is likely to be less than the mass used for assessment purposes.

B.1.6 Item 6 – MRT matters

Information requested –

Provide a revised mine layout showing indicative locations for stockpiling of overburden, topsoil and vegetation.

Provide a revised mine plan containing sufficient information to demonstrate that at peak production all truck movements to from and on the site can be accommodated within the proposed footprint, as well as ongoing operations and stockpiling.

Stockpiles include overburden, topsoil and vegetation stockpiles.

The initial proposed disturbance footprint must be defined and areas to be progressively rehabilitated as the quarry extends should be identified. The layout should be based on typical dimensions of equipment, turning requirements for trucks and other vehicles and practical working volumes of stockpiles. It must be demonstrated that uncontrolled emission of materials from the proposed footprint or expansion of the footprint beyond the proposed area will not occur.

Some of the matters raised by MRT may be more appropriately addressed via the enactment of their own legislation – the *Mineral Resources Development Act 1995*.

The current approved MRT Mine Plan is contained within Attachment S5.

There is scant overburden and topsoil – it is skeletal bedrock, typical of this geology on Flinders island and in north-eastern Tasmania where there is low rainfall (<600 mm per annum).

There is also scant vegetative cover on the quarriable area – it is short, regrowth (from a hot wildfire) sclerophyll vegetation that when removed and chipped would yield very litter volume of material. Section *B.1.6 Vegetation Removal and Management* of the DPEMP suggests that logs may be kept on site for re-use in rehabilitation but other material will be removed. As is the right of the operator, vegetative material can be removed from the quarry area and used elsewhere. There is no need to store it on the site, especially if its removal is necessary to operate the site in an efficient manner; consequently, we have not shown, nor do we need to show, stockpiles of vegetation/mulched organic material on the mine plan in Figure B-1 of the DPEMP.

It is perplexing that the EPA has requested, presumably at the request of MRT, the following – ‘It must be demonstrated that uncontrolled emission of materials from the proposed footprint or expansion of the footprint beyond the proposed area will not occur.’

The risk of uncontrolled emission of materials has nothing to do with the size of the footprint. There cannot be 100% certainty for any quarry/mine that uncontrolled emissions will not occur – this is a nonsensical request. How can this be demonstrated?

Of note is the EPA’s insertion of the following condition –

‘Dust emissions from The Land must be controlled to the extent necessary to prevent environmental nuisance beyond the boundary of The Land.’

into many project conditions it has recently (all in 2016-2017) assessed and approved – for example, the below listed projects which have documentation readily available on the EPA webpage for public consumption –

- Bryden Elliot Building and Excavations Pty Ltd, Mt Calder Quarry, 4 and 188 Montgomery's Rd, Runnymede 7190 (Glamorgan Spring Bay Council DA 2016/121);
- Cleveland Pastoral Estates Ouse (Central Highlands Council DA 2016/61);
- Dromedary Quarry (Brighton Council DA2016/00156);
- Hazell Bros Group Pty Ltd, Long Hill Quarry, Dan Rd, Elizabeth Town (Meander Valley Council, PA\16\0133);
- Kassem Holdings Pty Ltd, Saltwood Road Sand Recovery, Saltwood Road, Bridport (Dorset Council DA 2016/70);

- Shane Groves, Quarry Expansion, Oonah Road, Highclere (Burnie Council DA 2016/051); and
- Sunnyside Pastoral Pty Ltd, Westwood Quarry Upgrade, 2355 Bridgenorth Road, Westwood (Meander Valley Council PA 16/0174).

The condition does not prohibit the emission of dust from The Land, rather it simply must be ‘...controlled to the extent necessary to prevent environmental nuisance beyond the boundary of The Land’.

For some approvals (eg Hazell Bros Group Pty Ltd, Long Hill Quarry, Dan Rd, Elizabeth Town), the following condition has been used by the EPA to specifically address crusher-generated dust emissions –

A3 Control of dust emissions from plant

1 Dust produced by the operation of all crushing and screening plant must be controlled by the use of one or more of the following methods to the extent necessary to prevent environmental nuisance:

- 1.1 the installation of fixed water sprays at all fixed crushers and at all points where crushed material changes direction due to belt transfer;
- 1.2 the installation of dust extraction equipment at all fixed crushers and at all points where crushed material changes direction due to belt transfer, and the incorporation of such equipment with all vibrating screens;
- 1.3 the enclosure of the crushing and screening plant and the treatment of atmospheric emissions by dust extraction equipment; and
- 1.4 any other method that has been approved in writing by the Director.

For some activities (eg Kassem Holdings Pty Ltd, Saltwood Road Sand Recovery, Saltwood Road, Bridport, **and** Hazell Bros Group Pty Ltd, Long Hill Quarry, Dan Rd, Elizabeth Town, **and** Shane Groves, Quarry Expansion, Oonah Road, Highclere) specific traffic area dust generation risks are conditioned –

‘Dust emissions from traffic areas

Dust emissions from areas of The Land used by vehicles must be limited or controlled by dampening or by other effective measures.’

Based on recent approvals and conditions used by the EPA, we see no reason to demonstrate with 100% certainty that there will be no emission of materials from the quarry activity – other quarry operators have not had to, nor should they. Instead, we contend that the risk of emitting materials (eg dust) can be mitigated to practicable and reasonable levels where the risk of causing an environmental nuisance is reduced to an unlikely level.

The quarry layout has been designed by a suitably qualified engineer whom has many decades of experience with quarry operations on mainland Australia. We have no reason to question his expertise and suggested design. No such expertise exists within MRT, or at the least it has not been demonstrated that such expertise exists within MRT, and we have not been provided with any plausible reasons for the comments made by MRT. It is pure speculation. Consequently, there have been no adjustments or changes to Figure B-1 of the DPEMP for the site layout.

Please note that the use of stockpile locations for Major Projects, as shown in Figure S1a, may satisfy MRT in its assertion that there is not enough room in the quarry pit floor to accommodate the equipment, stockpiles etc as proposed by the Development. The use of the stockpiles as shown in Figure S1a will enable material to be stockpiled and collected by trucks independently of the operations within the quarry.

B.2 TABLE 2 ITEMS**B.2.1 Potential transport routes**

Concerns raised and the EPA information requested –

| | |
|--|--|
| <p>Concerns that traffic along public roads associated with the quarrying operation will create a noise nuisance (or that noise is not discussed) and general loss of amenity for adjacent residences.</p> | <p>It is noted that environmental nuisance directly attributable to traffic movements associated with the proposal can be taken into account by the EPA Board in its determinations.</p> <p>Road condition and use will affect the potential for the proposal to cause environmental nuisance. This is a matter which Council may consider during the planning assessment.</p> <p>Provide a description of potential transport routes along public roads, residential setbacks along these routes and vehicle movements along these routes during peak production compared with during other periods to assist the EPA Board. Such information would be particularly relevant for hours of operation proposed outside of those specified in the Quarry Code of Practice.</p> |
|--|--|

Residential setbacks

Most of the island is zoned rural (see Figure S5) with areas of ‘residential’ and ‘village’ zoning in and around the main population centres (eg Whitemark, Lady Barron, Killiecrankie, Palana and Emita).

The quarry occurs in a Rural zone, not a *residential* one (see Figure C-1 in the DPEMP). Furthermore, the likelihood is that trucks hauling material would be limited to, or substantially limited to, the main roads of the island outside the Village and residential (Low density residential, Rural residential etc) zones. The main roads are largely zoned Rural as shown in Figure S5.

The Scheme notes for the Rural zone under Clause 5.8.4 Development Standards (highlight added for emphasis) –

(c) Buildings shall be setback a minimum distance of 20 metres from all boundaries.

(d) Regardless of the foregoing minimum setbacks, buildings shall be set back not less than a horizontal distance of 100m from high water mark and 40 m from a perennial watercourse.

(e) Council may relax the setback requirement of the above clause pursuant to the provisions of Clause 3.5 of this Scheme and after giving consideration to:

- i. The particular size, shape, contours or slope of the land and the adjoining land;
- ii. The adjoining land and uses and zones
- iii. The position of existing buildings and setbacks in the immediate area;
- iv. Consideration of any representations received as a result of the notification under Section 57 of the Act.

(f) ...

(g) A house on any lot which contains only class 4, 5, 6 or 7 land is discretionary and may only be approved if any existing or potential development and use of agricultural land in the vicinity is likely to receive no impact, or only minor impact from the establishment of the residence taking into account:

- (a) The topography of the land;
- (b) The location of water catchments;
- (c) The location of neighbouring agricultural pursuits;

(d) Buffers created by natural features;

(e) Resource sustainability given the objective of the State Protection of Agricultural Land Policy.’

The effect of the Clause is that the frontage setback (ie the frontage is measured from the road access) must be 20 m from the roadway unless Council exercises discretion under Clause 8.3.4 (e). If we hypothetically consider lots in the Rural zone near public roads to potentially contain a residence (as can occur if Council approves one subject to the Scheme) they would be at least 20 m from the frontage with the road, unless Council exercised discretion to reduce this distance. Given the large size of most land titles in the Rural zone it is likely that the 20m frontage setback would be applied in nearly all cases.

The EPA notes on its webpage (<http://epa.tas.gov.au/epa/noise/residential-noise-and-hours-of-use>) the below in relation to noise in *residential areas* –

‘Residential Noise and Hours of Use

Residential Noise

Noise pollution is sound at a level that is annoying, distracting or physically harmful. This can mean different things to different people.

In residential areas, an acceptable level of noise for one person may be unacceptable to another. A person’s reaction to noise may also depend on the time of the day and the nature of the noise.

Typical problems include the use of noisy items such as power tools, gardening equipment, poorly located air conditioners, music system subwoofers, or people talking loudly outdoors at a late-night party.

The general approach to residential noise management in Tasmania is that a person’s use of noise-making equipment, as well as their recreational activities, must not unreasonably interfere with their neighbour’s wellbeing. This includes the neighbour’s ability to use both indoor and outdoor spaces on their property.

To assist in protecting the community from unwanted noise, ‘Permissible Hours of Use’ have been established for machinery commonly used in garden and home maintenance, building and recreational activities.

Permissible Hours of Use

The [Noise Regulations](#) include the following Permissible Hours of Use* for various types of machinery used on residential premises, including residential construction sites.

Machinery cannot be used outside the Permissible Hours of Use if it can be heard, or is likely to be heard, within a habitable room in another home (e.g. in a living room or a bedroom).

| Machinery/Equipment | Permissible Hours of Use |
|--|---|
| Lawnmowers and other power garden maintenance equipment | Monday to Friday: 7am to 8pm Saturday: 9am to 8pm Sunday and Public Holidays: 10am to 8pm |
| Chainsaws (Note: May be used for domestic garden maintenance on only one day in any 7 consecutive days) | Monday to Friday: 7am to 6pm Saturday: 9am to 6pm Sunday and Public Holidays: 10am to 6pm |

| | |
|---|---|
| Musical instruments and sound amplifying equipment | Monday to Thursday: 7am to 10pm Friday: 7am to midnight Saturday: 9am to midnight Sunday and Public Holidays: 10am to 10pm |
| Motor vehicles, motor vessels & outboard motors (unless moving in and out of premises) | Monday to Friday: 7am to 6pm Saturday: 9am to 6pm Sunday and Public Holidays: 10am to 6pm |
| Portable apparatus (e.g. power and percussion tools, compressors, pumps, generators and cement mixers) | Monday to Friday: 7am to 6pm Saturday: 9am to 6pm Sunday and Public Holidays: 10am to 6pm |
| Mobile machinery, forklift trucks and industrial motor vehicles (e.g. tractors, graders, rollers & cranes) | Monday to Friday: 7am to 6pm Saturday: 8am to 6pm Sunday and Public Holidays: 10am to 6pm |

* refer to regulation 14 for conditions applying to use of machinery outside these hours'

The operating hours stipulated for the Development in the DPEMP (pg 21) are provided in Table S3 (an exact copy of Table 2 from the DPEMP). Of note is the general correlation between the operating hours of the quarry and the Noise Regulation permissible times for the operation of 'mobile machinery, forklift trucks and industrial motor vehicles' – they are the same except for additional hours for haulage between 6 and 7 am and 6 and 7 pm Monday to Friday, and haulage on Saturday with extended hours.

Livestock trucks, freight trucks and other trucks on the island have no prohibition on them for the use of roads near houses either in or outside of *residential areas*. Roads are to facilitate the transport of goods, services and people – that is their sole function.

Table S3. Operating hours and times for blasting and crushing within the quarry

| Operational Activity | Operating Hours | Blasting | Crushing | Haulage |
|----------------------|--|---|---|---|
| Normal Production | 0700 to 1900 hrs Monday to Friday; 0800 to 1600 hrs on Saturday; and closed on Sunday and public holidays (those gazetted Statewide). | 1000 and 1600 hrs Monday to Friday but closed on Sunday and public holidays (those gazetted Statewide). | 0800 to 1700 hrs Monday to Friday but closed on Sunday and public holidays (those gazetted Statewide). | 0700 to 1900 hrs Monday to Friday; 0800 to 1600 hrs on Saturday; and closed on Sunday and public holidays (those gazetted Statewide). |
| Major projects | 0700 to 1900 hrs Monday to Friday; 0800 to 1600 hrs on Saturday; and closed on Sunday and public holidays (those gazetted Statewide). | 1000 and 1600 hrs Monday to Friday but closed on Sunday and public holidays (those gazetted Statewide). | 0800 to 1700 hrs Monday to Friday; and 0800 to 1600 hrs on Saturday but closed on Sunday and public holidays (those gazetted Statewide). | 0600 to 1900 hrs Monday to Friday; 0700 to 1900 hrs on Saturday; and closed on Sunday and public holidays (those gazetted Statewide). |

Like any quarry, it is impossible to predict future sales in the absence of a long-term contract for regular supplies. The market (demand) dictates sales volumes, location of supply and the terms/conditions upon which the supply is needed.

The **Traffic Impact Assessment** in Attachment S2 provides expert opinion and evidence on the impact (eg road pavement impacts, safety considerations) of traffic generated by the activity.

B.2.2 Economic matters

Concerns raised and the EPA information requested –

| | |
|---|---|
| <p>Either dispute or consider there is insufficient evidence provided to support assumptions that the rock from the quarry can be used for Flinders Island Airport runways and Council and State Government roads.</p> <p>One representor was concerned regarding the lack of detail of all potential projects for the gravel resource believing it makes it difficult to determine if the DPEMP is sufficient.</p> | <p>The economic aspects of the proposal have not been described in any detail in the DPEMP, nor weighed up against potential environmental impacts. Such information would provide useful context for the EPA Board as well as representors.</p> |
| <p>Belief that the proposal will benefit one individual for little benefit to the community as a whole, in particular potential damage to roads, increased traffic and noise are noted against some short-term work as a benefit.</p> | <p>The economic uses of quarried material and benefits of the proposal have not been described in any detail in the DPEMP, nor weighed up against potential environmental impacts. Such information would provide useful context for the EPA Board as well as representors.</p> |
| <p>Considers restriction should be placed on the potential for quarried materials to be exported.</p> | <p>The economic uses of quarried material and benefits of the proposal have not been described in any detail in the DPEMP, nor weighed up against potential environmental impacts. Such information would provide useful context for the EPA Board as well as representors.</p> |

The DPEMP contained information about the resource, its uses and rationale for the Development.

To avoid any uncertainty, ambiguity or confusion it is provided below (Figures refer to those in the DPEMP and are not provided here) –

'A.5 Rationale and Alternatives

A.5.1 The Resource

The geology of the quarry is a deeply folded Siluro-Devonian Turbiditic mudstone (Mathinna series – Figure E-1A) with a thin clay-loam soil. The material is a coarse fractured rock/gravel derived from in situ weathering of the bedrock. This geological unit is quite uncommon on Flinders Island (see Figure E-1B). Indeed, this is the only current Mining Lease that has access to this geological formation on the island. The rock when crushed is highly suitable for use in pavement surfaces for roads (see Attachment 2) when crushed to a suitable size.

The products from the quarry can supply a major component of, if not all, of the island's needs for non-granite and sand based construction works including, but not limited to, road base for private property road works, driveway gravel, fill for concrete slab construction and public road works.

A.5.2 Extraction Options

Given the strategic location of the quarry and its unique product that it generates, the development includes two modes of operation –

1. *Normal Production* – normal (extraction volume limited on a per annum basis) extraction associated with minor works including those conducted by the proponent and for sale to customers.
2. *Major Projects* – those projects which require a large volume of material over a short to medium term (weeks or several months) which have social and economic benefits to the island economy and infrastructure.

The ability to extract material each year, and the flexibility to provide material in larger volumes to major projects when the needs arises, enables a *local* product to be readily available for *local* projects. In the past, material has often been brought onto the island from mainland Tasmania at considerable cost to the public. A local source should provide a financial incentive to implementing local works on the island as well as providing an opportunity to conduct additional works using those funds that would otherwise be spent on transport if the same material was sourced off-island.

Ordinarily, a permit for a quarry will nominate a maximum volume which can be extracted per annum. Any increase to this value would require a new application to the planning authority and a new assessment process initiated – this could be a lengthy and costly process which does not necessarily meet the timelines within which the additional material is needed, as is the case in short-notice projects which often require high volumes of material (eg short notice funding made available for road building projects).

If a permit is issued by the planning authority, it will apply to the activity on the Land Title to which the permit was issued and authorise the extraction of up to 120,000 cubic metres per annum. The full volume of material is unlikely to be extracted each and every year, with extracted volumes likely to be in the range of 10,000 to 20,000 per annum - consistent with Normal Production levels. If a permit is issued by the planning authority, subsequent application can be made to the EPA to reduce annual production levels per annum.'

To further reiterate the uniqueness of the quarry product on the island Figure S4 shows all Mining Leases registered on the island. All but the Mining Lease on The Gums produce a granite or sand based product.

It is of interest that a representor notes (paraphrased by the EPA Assessment Officer) –

'States proponent does not provide data to support assertion that the transport of quarry material to the island by barge is more expensive. Therefore it cannot be assessed whether the proposal is more favourable [economically] that the existing situation.'

Irrespective of the economic benefit of The Gums activity to the operator and/or island generally, the environmental matters associated with the activity are either negligible or can be readily managed. A triple-bottom-line assessment is therefore not warranted nor justified given the lack of substantial environmental impacts that need to be weighed against economic or social benefits. Despite this, we have provided a clear example of the potential economic effect of an on-island hard-rock quarry below for the EPA Board to contemplate in its deliberations of the application.

Quarried material imported to Flinders Island – Flinders Council airport repairs

The economic benefit to the island having its own non-granite quarry where the material is of suitable quality for various uses are clear when we consider an example of the freight costs for imported [from mainland Tasmania] material.

The Flinders Council, who owns and operates the Flinders Island Airport, received Commonwealth funds (approx. \$786,000) to contribute to the repair of some section of the runway. The need for further repairs are described in the Flinders Island Airport Master Plan 2012 (Attachment S7).

Emails in Attachment S4 indicates that for a supply of approximately 1,200 tonnes for this purpose there was a freight charge of approximately \$80,000 (ex GST). This equates to about \$66.67 (ex GST) per tonne of material – this excludes the actual cost of the product itself, it is just the freight component.

If a comparable freight charge was to be applied to import 100,000 cubic metres of material (about 160,000 tonnes) onto the island the freight fee would be \$10,667,200 (\$10.67 million). Whilst this is an example, and there may be savings made due to the size of the shipment, it provides a sound guide to the quantum of funding needed by the Flinders municipal ratepayers and/or cost to tax payers. This is without the cost of the product itself and of the remainder of the project.

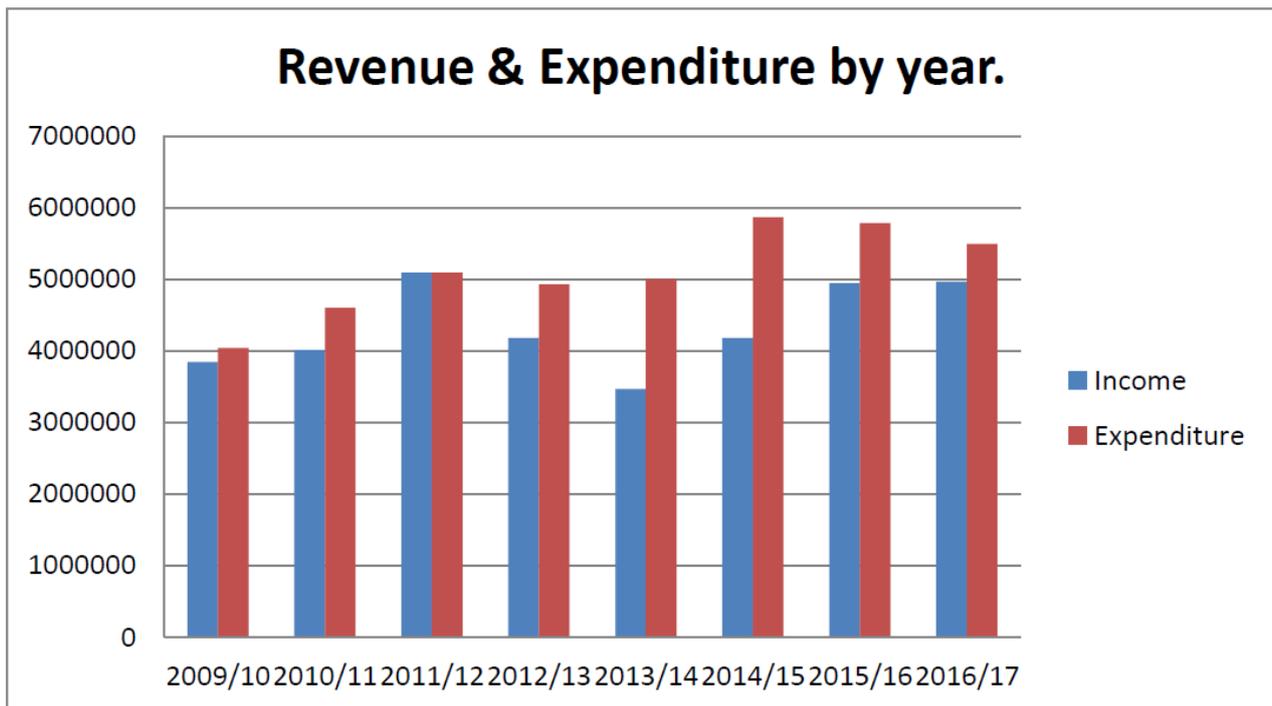
The Annual Budget for the Flinders Council is available on the Flinders Council webpage - <https://www.flinders.tas.gov.au/client-assets/images/Learn/downloads/Council%20Reports/adopted%20201617%20Budget%20V6.pdf>

The Executive Summary states -

‘The 2016-2017 Budget Estimates forecast an operating deficit of \$325,467 after generating rate and charges revenue of \$1,654,648 and Operating Grants contributions of \$2,026,703.

Council's financial position continues to be challenged by a static rate base that constraints the ability to generate own source revenue and low interest rate returns. The ongoing growth in the regulatory compliance costs will have further negative impacts on the financial sustainability of Council in the year ahead.’

The Annual Budget 2016-17 provides the following summary of revenue and expenditure for the previous 8 years –



With ongoing budget deficits and the comments in the Executive Summary of the Council's own Annual Report, it is reasonable to suggest that Council would not have the independent financial capacity to fund the freight fee of imported grave/rock materials for a Major Project-scale development let alone the remainder of a project. Subsidisation of freight costs to import material would be excessive and arguably unjustifiably high to the tax payer.

The cost of relocating a blast crew, machinery and other associated staff/equipment to the quarry for a Major Project would be a fraction of the freight charge for importing materials to the island.

In addition to the above there is also the likely benefit of reduced freight/product cost to would-be developers of projects requiring moderate to large volumes of gravel and/or rock. There is no way to measure the effect that an on-island gravel resource would have to attracting developments on the island. Equally there is no way of telling how many projects (and their economic benefits) may have been lost due to excessive freight costs for raw construction materials.

B.2.3 Access road

Concerns raised and the EPA information requested –

| | |
|---|--|
| <p>As the access road (in part) is located on an adjoining property considers an agreement with the adjoining landowner should be in place.</p> | <p>Details of discussion with the adjacent landowner regarding access to the proposal site should be provided. Without an agreement, although access may be legal, it is more likely that environmental nuisance complaints will be made and require resolution.</p> |
|---|--|

Right of Way (ROW)

The legal use of a ROW is not an environmental matter.

The use of the ROW forms part of the development application albeit modified from the original development application as a direct response to the representations received by the planning authority.

The alteration is not a fundamental change to the activity, rather it is reflective of the applicant's willingness to respond positively to the representations received during the advertising process. The representation phase is a statutory process to facilitate public participation in the planning process, an objective of the Resource Management and Planning System.

There has been no discussion with the neighbour about the ROW. The use of the ROW is not conditional on further approval by the neighbour.

The quarry operator has conducted assessments within the ambit of s74 of the *Environmental Management and Pollution Control Act 1994* and the applicable standards of the Scheme.

The environmental effects/impacts caused using the ROW may be within the jurisdiction of the EPA to assess. However, any assessment by the EPA should be limited to environmental matters; in this case, the evidence compiled by the applicant demonstrates that the environmental effects of the use of the ROW, which is to be self-limited to Major projects, are reasonable and manageable. These potential impacts include those of dust, noise etc.

Complaints

If a neighbour or other person(s) chooses to make a complaint then that complaint would presumably be treated within the principles of procedural fairness (ie natural justice).

The assessment of an application is to be conducted on its environmental impact/mitigation merits, not the likelihood of future complaints that may or may not need resolution. Given the environmental impacts of the entire activity are negligible or manageable there should be no merit-based complaints.

Notwithstanding this, to enable the public to express any concerns they may have about the operation

of the quarry, a Complaints Register will be prepared and maintained for the activity. All complaints of relevance to the management of the quarry operation will be recorded in the Complaints Register. Details of investigation and actions undertaken in relation to each complaint will also be recorded in the register.

The new Commitment is below -

| Number | Commitment | Timeframe |
|--------|---|-----------------------------------|
| 28 | To enable the public to raise any concerns they may have about the operation of the quarry, the existing Complaints Register will be maintained for the activity. | Ongoing from project commencement |

Complaints may be received by the quarry operator or by Council and/or the EPA. The quarry operator has no control over whom a person or persons choose to make their complaints to about an activity. The important matter is the timely resolution of any complaints received which have merit.

If a complaint is found to have merit it would be addressed by the quarry operator within a reasonable period in consultation with the complainant and/or the EPA. The Council has no regulatory role in environmental management matters if the quarry was to be granted a planning permit (either by Council acting as the planning authority or as an outcome of an appeal before the Resource Management and Planning Appeals Tribunal).

Vexatious complaints would be dismissed – they would still be recorded within the Complaints Register.

B.2.4 Visibility

Concerns raised –

| |
|--|
| The visual impact of the existing quarry is noted eg as a “scar on the landscape”. |
| Concerns raised that the proposal will increase the extent of the visual impact. One representor considers Visual impact should be assessed from the perspective of aircraft arriving and departing. |
| “The current site can be seen as a scar on the land. Further extension of the existing site may mean a large visual scar on the hillside.” |

Visual aesthetics are subjective.

Theoretically, the existing quarry can persist until its resource is exhausted as it is approved to do so. Therefore, whether this application is approved or not the quarry will continue to exist in its current or an expanded state.

The quarry has been in existence for over 30 years. Images in Attachment 2 of the DPEMP (provided here as Attachment S8 of the Supplement) show that the near full extent of the Mining Lease was stripped of its vegetation and operated as a large quarry for several years. Its existence has been long-term, and would pre-date the current ownership of some of the lands from which it can be seen.

As the quarry is expanding into high wall material there is comparatively little geographic extent (horizontal distance) to be opened in the foreseeable future beyond what is already disturbed.

Extractive industry, such as this quarry, is only permitted in the Rural zone of the Scheme and limited geographically to the geological formations that drive their establishment and ongoing use. This is the case for The Gums quarry, as noted by the lack of any other Mining Leases on the island that quarry the material present (see Figure S4).

A visual assessment from an airplane is both unrealistic and unjustified. Many quarries and other landscape disturbances on the island can be seen from an airplane.

B.2.5 Threatened species - correction

Lasiopetalum discolor (coastal velvet bush) was incorrectly reported in the Mining Lease, the species is indeed the unlisted *Lasiopetalum macrophyllum* (shrubby velvet bush).

A replacement map is provided in Figure F-3 of the threatened flora recorded within the Mining Lease.

B.2.6 Corrections

Concerns raised –

| | |
|---|--|
| <p>The following errors are identified in the DPEMP:</p> <ul style="list-style-type: none"> • Extraction to start July/August 2016. • Boyer Rd does not exist on Flinders Island. • This quarry is not a coal mine. • Repairs will be floated to the Lilydale Workshop. • Material for the Markarna Park runway seems to apply to Sunbury and the rock mentioned is quartz. • There is no Gundagi Rd on Flinders Island. <p>One representor believes the report to be a cut and paste of a report for a coal mine in Bangor and therefore infers it is not valid documentation.</p> | <p>Although these errors are not considered to affect the assessment made of the environmental aspects of the operation, it is considered that correction would remove any inferred ambiguity.</p> |
|---|--|

Extraction should start in August 2017.

The quarry is a hard-rock quarry, not a coal mine, nor is Lilydale on Flinders Island – it was referred to as such in error. The correct statement in the DPEMP should have been the below -

'G.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 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 have the ability to carry large clods of dirt and mud in which seed propagules can be lodged. Heavy machinery is rarely brought to the site as the machinery to operate the quarry is retained at the quarry. Machinery is floated to the workshop at Markarna Park for regular servicing and major repairs however when it is returned to the quarry it is cleaned to remove dirt and vegetative matter. 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.'

Whether the material is or is not to be used on the Markarna Park for runway maintenance is of no relevance to the application – the material could theoretically be used anywhere on the island.

There was an incorrect reference to Gundagi Road in the Blast Management Plan – this has been corrected in the revised *Blast Management Plan* (Attachment S5).

B.2.7 Fire risk

Concerns raised –

| | |
|---|--|
| <p>“A recent farm fire highlighted the need for Bushfire Protection, to the Community, from high risk activities.” Council also states that “environmental impacts may also arise from a site fire due to the nature of materials (fuel etc) used on site.”</p> | <p>The nature of the activity proposed on the land is described however no comment is made regarding the relative sensitivity of the activity to bushfire and potential associated emissions, or the potential for generation of escaped fire, compared to other activities consistent with the land zoning.</p> |
|---|--|

A recent farm fire has nothing to do with this quarry, whether it is expanded or otherwise. Poor farm practices are of no relevance to an extractive industry.

A recent completed assessment by the EPA (DA2016/00156 – Brighton Council) indicated that for the fire risk issue associated with an extractive industry the below was stated in Table 2 of that assessment (emphasis added) –

| Representati on No./ Agency | Comments and issues | Further Info requested [yes/no] | EPA Comments |
|-----------------------------------|---|---------------------------------------|---|
| Rep 3 | <i>Proposal increases the bush fire risk.</i> | No | <i>Matter outside the Board's responsibilities for assessment of the application.</i> |

We agree with the EPA that this matter outside the Board’s responsibilities for assessment of the application.

Fire risk is also outside the matters which the Council acting as the planning authority can contemplate when determining the application.

Of note is the existence of a **Community Bushfire Protection Plan** (Whitemark area including Blue Rocks and Long Point) prepared by the Tasmanian Fire Service in consultation with Flinders Council. The plan is in Attachment S9. Council would be aware of this plan.

583500

584000

Annexure 2 - A1 - October 2017

● *Parietaria debilis* (r/-)

SURVEY
AREA

0 125 250 500 METERS

THE GUMS QUARRY - WHITEMARK DP&EMP

FIGURE F-3: OBSERVED THREATENED FLORA IN AND AROUND
THE GUMS QUARRY SURVEY AREA



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BASE IMAGE © 2016 GOOGLE EARTH



DATUM: GDA94
GRID: MGA ZONE 55

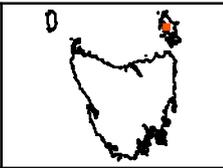
TASMAR: LEVENTHORPE

CLIENT: 44 ADAMS GROUP

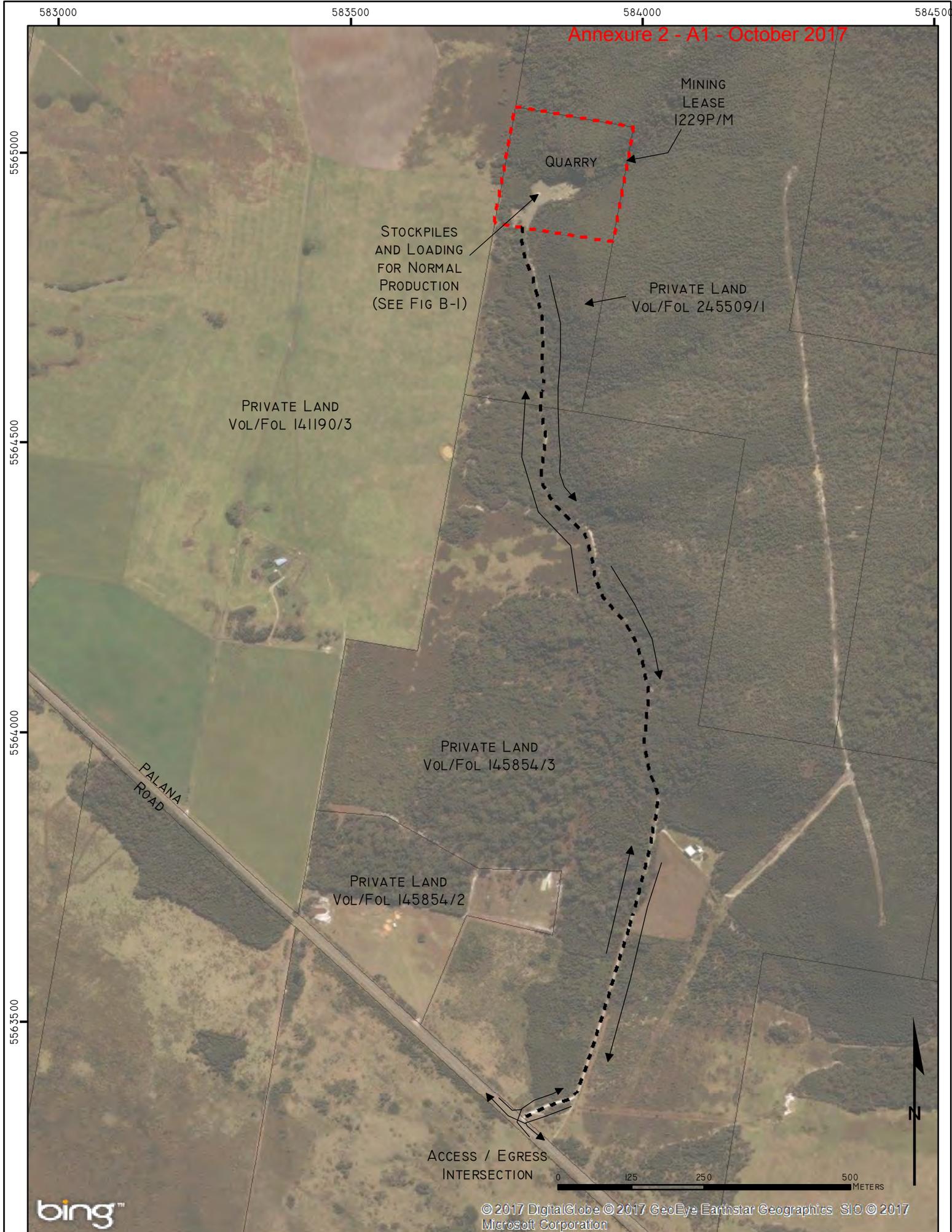
DATE: 22ND JULY 2016



**THE GUMS QUARRY - WHITEMARK
 DP&EMP SUPPLEMENT
 FIGURE S-1A: PROPOSED ACCESS ROUTE AND STOCKPILES
 FOR MAJOR PROJECTS AT THE GUMS QUARRY**



| |
|-----------------------------------|
| DATUM: GDA94 GRID: MGA ZONE 55 |
| TASMGP: LEVENTHORPE |
| CLIENT: 45 DAMS GROUP |
| DATE: 12TH JUNE 2017 |



THE GUMS QUARRY - WHITEMARK
 DP&EMP SUPPLEMENT
 FIGURE S-1b: PROPOSED ACCESS ROUTE AND STOCKPILES
 FOR NORMAL PRODUCTION AT THE GUMS QUARRY



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DATUM: GDA94
 GRID: MGA ZONE 55

TASMAR: LEVENTHORPE

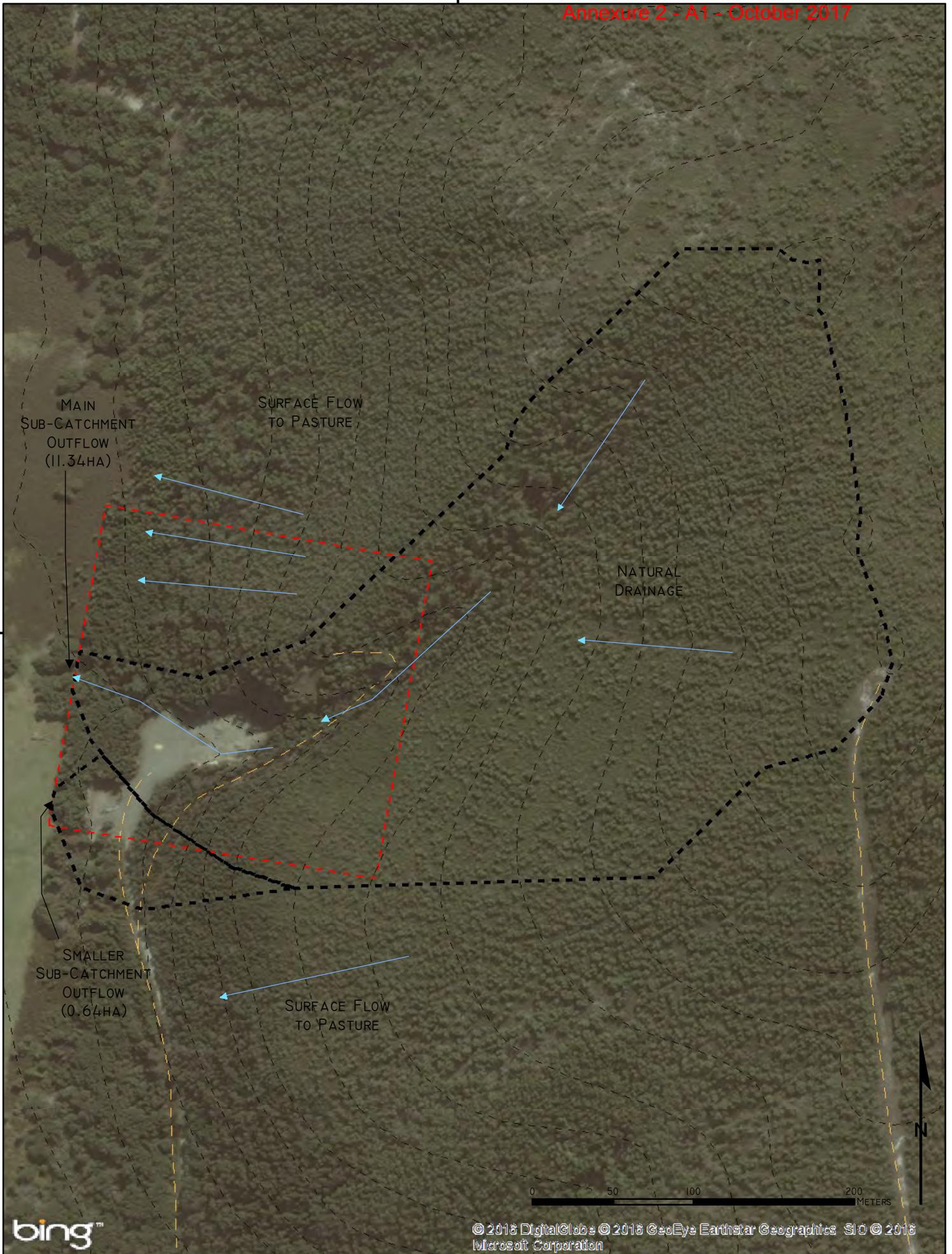
CLIENT: 46 DAMS GROUP

DATE: 1ST FEBRUARY 2017

584000

Annexure 2 - A1 - October 2017

5565000



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THE GUMS QUARRY - WHITEMARK DP&EMP

FIGURE S-2A: ASSUMED CATCHMENTS PRIOR TO QUARRY
DEVELOPMENT (APPROX 30 YEARS AGO)



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DATUM: GDA94
GRID: MGA ZONE 55

TASMAR: LEVENTHORPE

CLIENT: ADAMS GROUP

DATE: 11TH DECEMBER 2016



EX-MAIN
SUB-CATCHMENT
OUTFLOW
(Now 0.12HA)

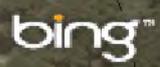
SURFACE FLOW
TO PASTURE

NATURAL
DRAINAGE

QUARRY DAM
OUTFLOW
(APPROX 1.25HA)

NEW MAIN
SUB-CATCHMENT
OUTFLOW
(Now 10.57HA)

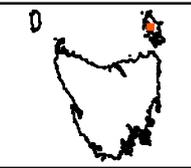
SURFACE FLOW
TO PASTURE



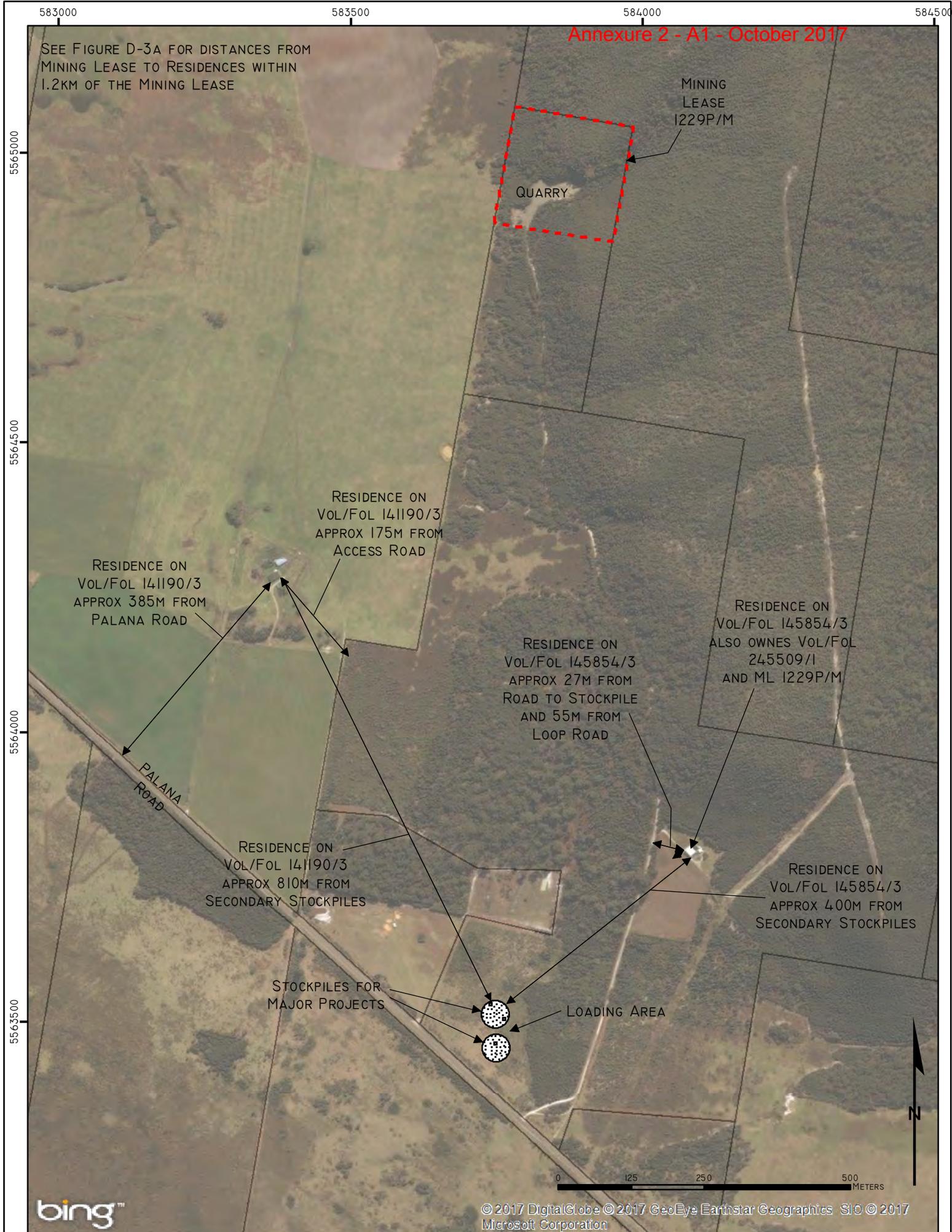
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THE GUMS QUARRY - WHITEMARK
DP&EMP
FIGURE S-2B: APPROXIMATE CATCHMENTS OF THE ACTIVE QUARRY
(IN PLACE NOW AND TO BE MAINTAINED)

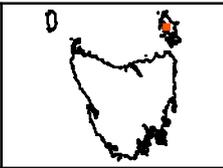
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DATUM: GDA94
GRID: MGA ZONE 55
TASMAR: LEVENTHORPE
CLIENT: **48** DAMS GROUP
DATE: 11TH DECEMBER 2016



THE GUMS QUARRY - WHITEMARK
 DP&EMP SUPPLEMENT
 FIGURE S-3: ADDITIONAL DISTANCES FROM NEARBY
 RESIDENCES TO ROADS AND STOCKPILES



| |
|-----------------------------------|
| DATUM: GDA94 GRID: MGA ZONE 55 |
| TASMAR: LEVENTHORPE |
| CLIENT: 49 ADAMS GROUP |
| DATE: 11TH DECEMBER 2016 |

565000 570000 575000 580000 585000 590000 595000 600000 605000 610000 615000 620000

Annexure 2 - A1 - October 2017

FLINDERS ISLAND MINING LEASES

ML 1859P/M
GRAVEL
QPL
UNDIFFERENTIATED
CENOZOIC
SEQUENCES

ML 1990P/M
LISTED AS STONE AND CLAY
ACTUALLY GRANITIC GRAVEL
DGAA
DEVONIAN - CARBONIFEROUS
GRANITOIDS AND RELATED ROCKS

ML 3M/2013
GRAVEL AND CLAY
DGAFS
DEVONIAN - CARBONIFEROUS
GRANITOIDS AND RELATED ROCKS

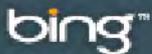
LOCATION OF THE GUMS QUARRY
MINING LEASE - I229P/M
STONE QUARRY
SDPM

MATHINNA SUPERGROUP
PANAMA GROUP
SILURO-DEVONIAN
TURBIDITIC MUDSTONE

ML 2032P/M AND I379P/M
GRAVEL
DGAAS
DEVONIAN - CARBONIFEROUS
GRANITOIDS AND RELATED ROCKS

ML 4M/1989 AND I9M/1980
SAND AND GRAVEL
DGAS
DEVONIAN - CARBONIFEROUS
GRANITOIDS AND RELATED ROCKS

0 2.5 5 10
KILOMETERS



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THE GUMS QUARRY - WHITEMARK
DP&EMP SUPPLEMENT
FIGURE S-4: FLINDERS ISLAND MINING LEASES



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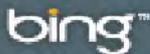
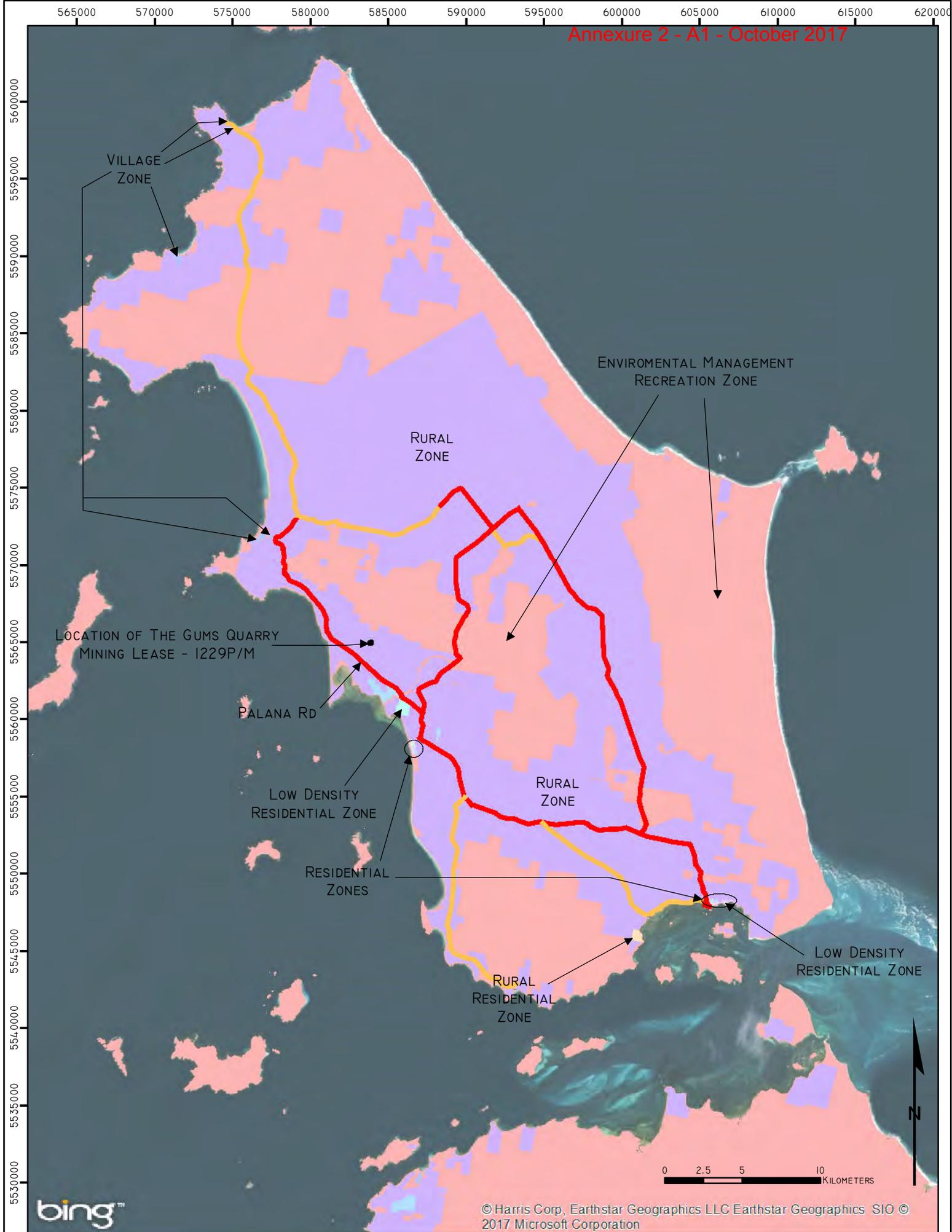


DATUM: GDA94
GRID: MGA ZONE 55

TASMGP: LEVENTHORPE

CLIENT: **50** ADAMS GROUP

DATE: 15TH APRIL 2017



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THE GUMS QUARRY - WHITEMARK
 DP&EMP SUPPLEMENT
 FIGURE S-5: FLINDERS ISLAND RESIDENTIAL PLANNING ZONES

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| |
|-------------------------------|
| DATUM: GDA94 |
| GRID: MGA ZONE 55 |
| TASMARP: LEVENTHORPE |
| CLIENT: 51 ADAMS GROUP |
| DATE: 15TH APRIL 2017 |

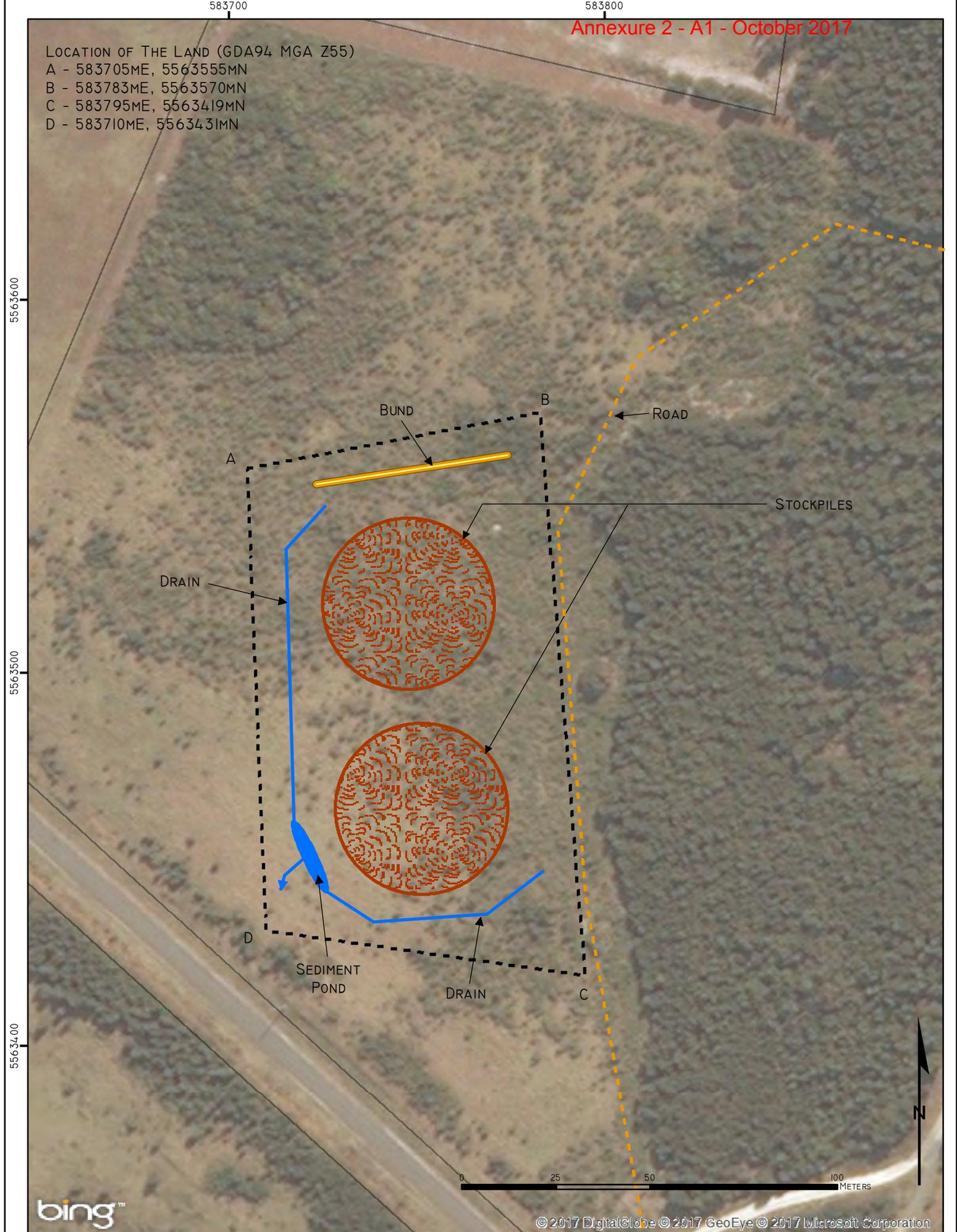
LOCATION OF THE LAND (GDA94 MGA Z55)

A - 583705ME, 5563555MN

B - 583783ME, 5563570MN

C - 583795ME, 5563419MN

D - 583710ME, 5563431MN



bing™

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THE GUMS QUARRY - WHITEMARK
 DP&EMP SUPPLEMENT
 FIGURE S-6: LAYOUT OF STOCKPILE STORAGE AREA
 FOR MAJOR PROJECTS AT THE GUMS QUARRY



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DATUM: GDA94
GRID: MGA ZONE 55

TASMARP: LEVENTHORPE

CLIENT: ADAMS GROUP

DATE: 16TH MAY 2017

PART C – ATTACHMENTS

- Attachment S1 Noise Modelling – stockpiling and alternate access loop for Major Projects
- Attachment S2 Traffic Impact Assessment (Midson Traffic)
- Attachment S3 Dust Management Plan
- Attachment S4 Council costs for importing gravel – airport runway repair project
- Attachment S5 Blast Management Plan (Revised)
- Attachment S6 Current MRT approved Mine Plan for ML 1229 P/M
- Attachment S7 Flinders Island Airport Master Plan 2012
- Attachment S8 Images of the quarry when opened in 1986
- Attachment S9 Community Bushfire Protection Plan – Whitemark including Blue Rocks and Long Point

Attachment S1 Noise Modelling – stockpiling and alternate access loop for Major Projects



Technical Memo

19 June 2017

Van Diemen Consulting Pty Ltd
PO Box 1
New Town, TAS 7008

5033_AC_R
AJM

Attn: Dr Richard Barnes

Dear Sir,

RE: The Gums quarry environmental noise from changed major project hauling route.

Please find below our report on potential environmental noise emissions from alternative hauling route proposed for major projects operations at The Gums quarry.

1. INTRODUCTION

Tarkarri Engineering was commissioned by Van Diemen Consulting on behalf of Markarna Grazing Company Pty Ltd to consider an alternative hauling practice during major projects to that originally proposed in a Development Proposal and Environmental Management Plan (DPEMP) for The Gums quarry (see Vipac report 421460-01) and the one assessed in Tarkarri Engineering technical memo report 5016_AC_R.

The purpose of this changed hauling activity during major projects is to reduce the potential noise impact on environmental noise receiver 3 (see receiver 3 in Vipac report 421460-01) when considered against the results from Tarkarri Engineering technical memo report 5016_AC_R. It is proposed that truck movements would be conducted as follows:-

Road transport trucks would utilise a loop entering the quarry via the proposed new road and departing via the existing road. In addition to a looped entry and exit a stockpile area near would be established on the western side of the new road close to the exit onto Palana Rd. Trucks would be used to move stockpiled material from the quarry pit area to the stockpiles allowing loading of road transport trucks at proximity to Palana Rd. This would also allow for crushing and carting to the stockpiles prior to the material being required at the site of major projects. Under this hauling scenario a front end loader (FEL) and dozer would operate at the stockpile.

NB: The only change from major hauling activity considered in Tarkarri Engineering technical memo report 5016_AC_R is the movement of the stockpile area from near receiver 3 to the western side of the new haul road close to the exit onto Palana Rd.

To assess this alternative hauling strategy Tarkarri Engineering has modelled potential noise emissions using SoundPLAN environmental noise software. Model input and set up details are the same as presented in Vipac report 421460-01.

Figure 1 shows an aerial view of the quarry with the proposed haulage route and stockpile area marked.



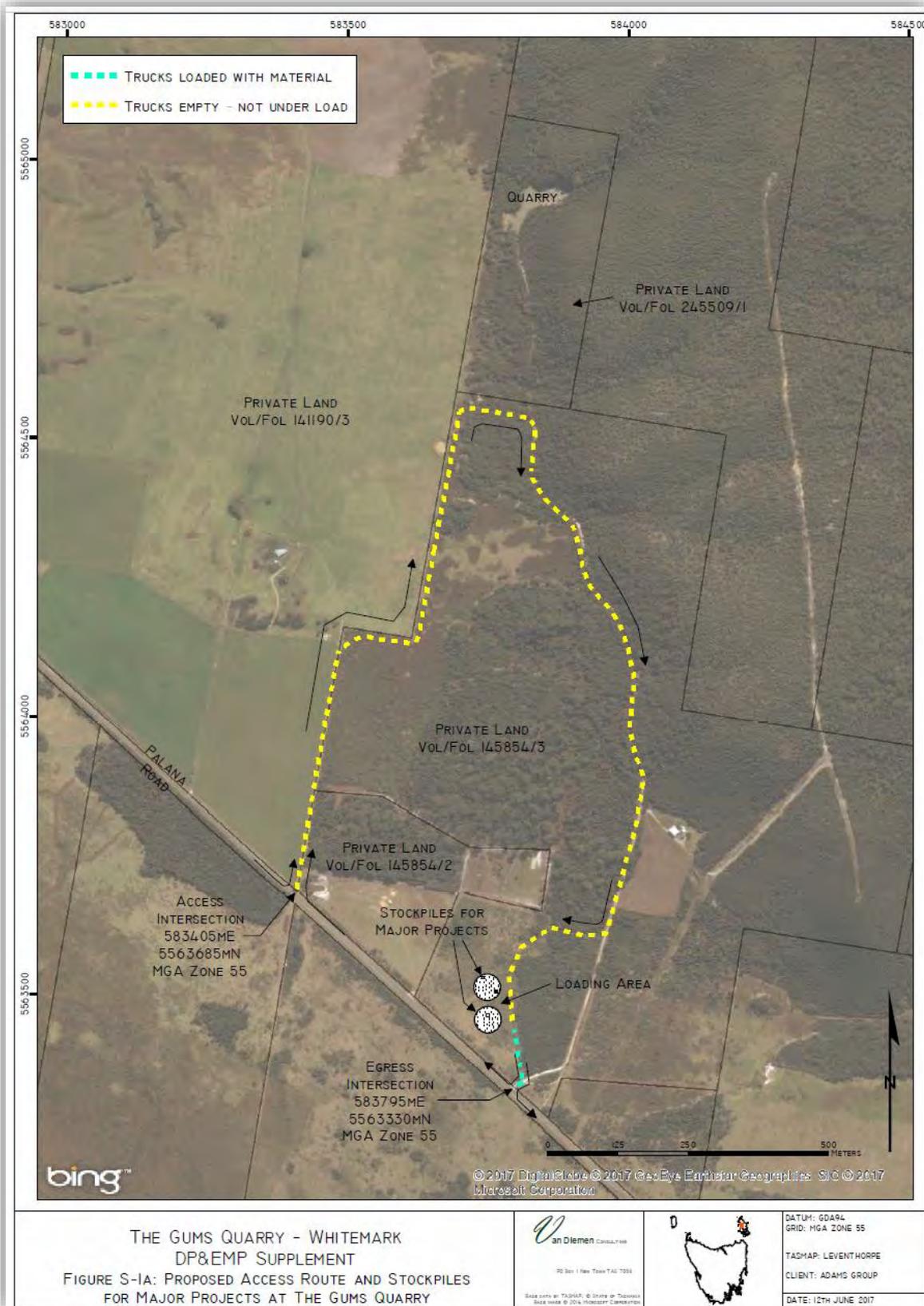


Figure 1 – Proposed major projects hauling route and stockpile area (provided by Van Diemen Consulting).



2. NOISE ASSESSMENT CRITERIA

Noise emission criteria for the project as provided in Vipac report 421460-01 are as follows:-

- $L_{Aeq,10min}$ **50 dBA**: Crushing and haulage activity (**0700 to 1700 hrs**).
- $L_{Aeq,10min}$ **40 dBA**: Haulage outside of crushing times (**1700 to 1900 hrs**).

3. ENVIRONMENTAL NOISE MODELLING

3.1. Model scenarios

Two model scenarios were considered as follows:-

- **Crushing and Hauling**: All quarry pit sources operating, with the exception of the drill rig. 6 trucks operating on the haul loop road and 2 trucks shuttling materials continuously from the pit to the stockpile area in a 10-minute period. An FEL and dozer operating at the stockpile area near Palana Rd.
- **Hauling only**: 6 trucks operating on the haul loop road and 2 trucks shuttling materials continuously from the pit to the stockpile area in a 10-minute period. An FEL and dozer operating at the stockpile area Palana Rd.

NB: A grader has not been modelled here.

Figure 2 presents a model plan view with the location of noise sources marked.

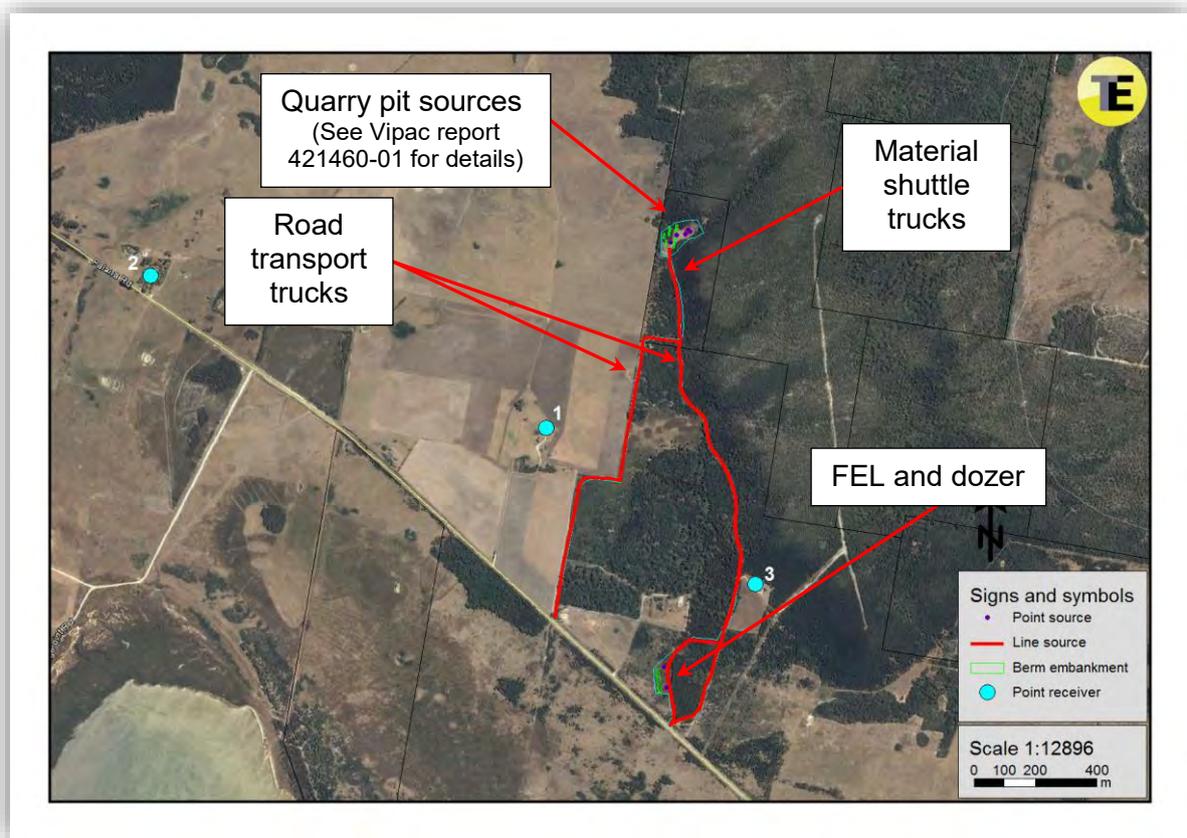


Figure 2 – Noise source locations, major projects.



3.2. Modelling results and discussion

3.2.1. Predicted sound pressure level contours

To assist with the visualisation of predicted noise propagation from the alternative hauling strategy noise emission contours are provided for the four model scenarios as follows:-

- Major projects, Crushing and Hauling.
- Major projects, Hauling only.

NB: Predicted L_{Aeq} level contours only are presented.



Van Diemen Consulting – The Gums quarry environmental noise from changed major projects hauling route.

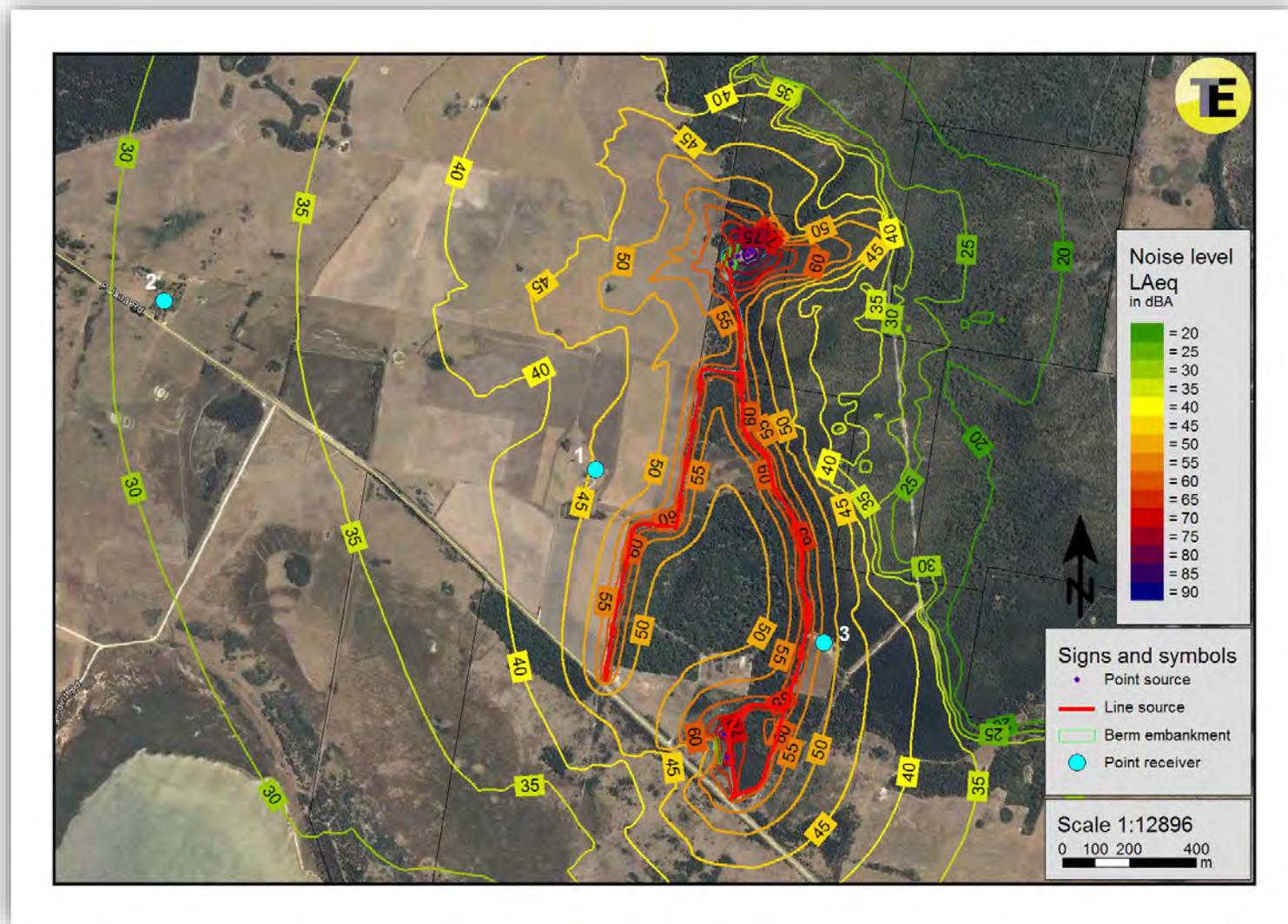


Figure 3 – Predicted noise emission contours, major projects, **Crushing and Hauling**.

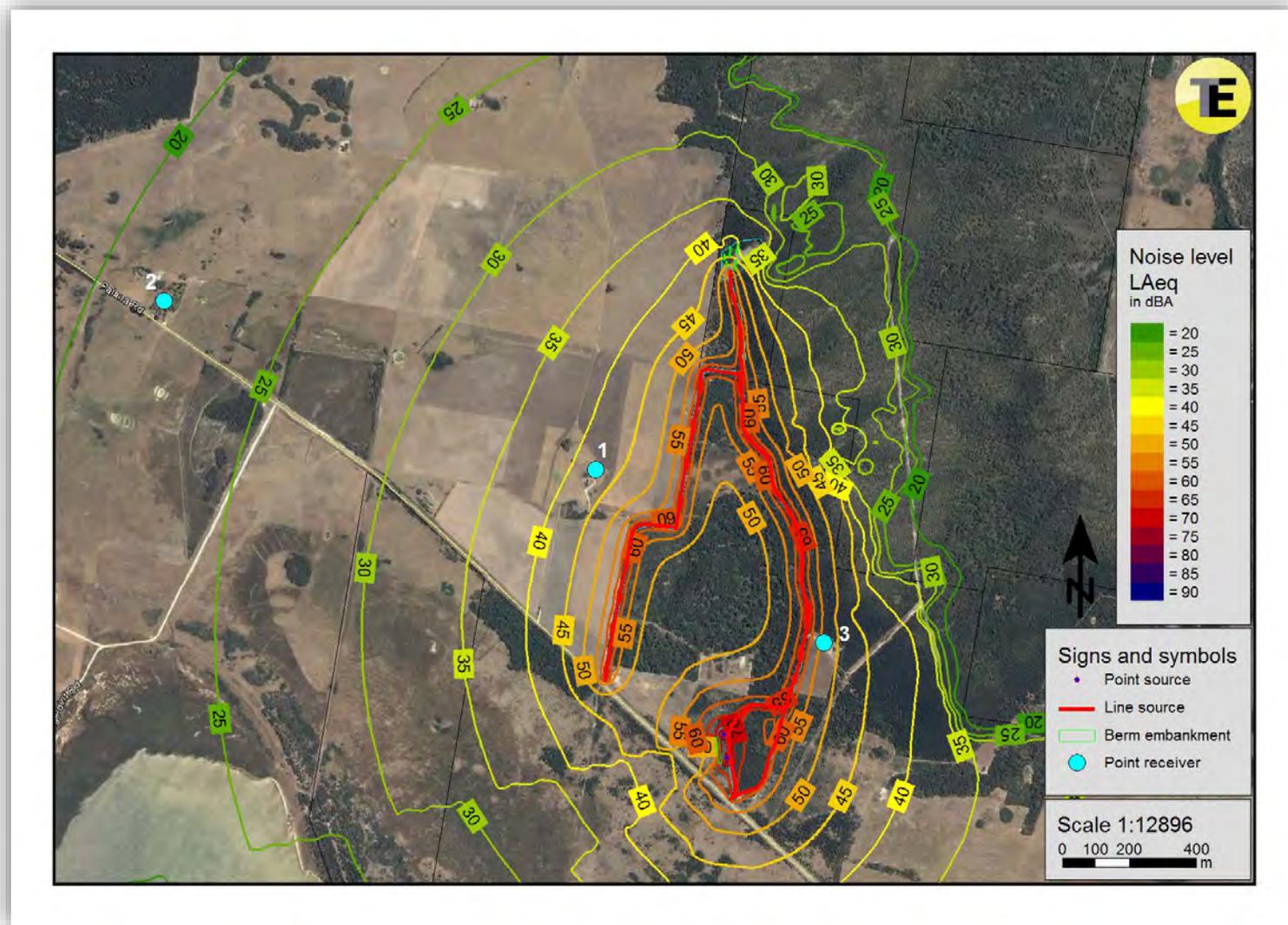


Figure 4 – Predicted noise emission contours, major projects, **Hauling only**.



3.2.2. Predicted sound pressure levels

Tables 1 and 2 present the predicted L_{Aeq} and L_{Amax} noise levels respectively at the three sensitive locations under the two modelling scenarios.

| Predicted sound pressure levels (dBA) L_{Aeq} | | |
|---|----------------------|--------------|
| Locations | Major projects | |
| | Crushing and Hauling | Hauling only |
| 1 | 45 | 42 |
| 2 | 31 | 22 |
| 3 | 53 | 53 |

Table 1 – Predicted received sound pressure levels, L_{Aeq} .

| Predicted sound pressure levels (dBA) L_{Amax} | | |
|--|----------------------|--------------|
| Locations | Major projects | |
| | Crushing and Hauling | Hauling only |
| 1 | 48 | 48 |
| 2 | 31 | 22 |
| 3 | 63 | 63 |

Table 2 – Predicted received sound pressure levels, L_{Amax} .

From the above:-

- All predicted noise levels are below the assessment criteria for the project at positions 1 and 2 and exceed at position 3.
- Maximum noise levels are generated by the following sources under each scenario:-
 - Crushing and Hauling: Positions 1 and 3, transport truck.
Position 2, rockbreaker.
 - Hauling only: transport truck at all three positions.
- Maximum noise levels are at or below 48 dBA at positions 1 and 2 and are unlikely to cause significant annoyance at this level. At position 3 the level is 63 dBA and at this level there is some potential that serious annoyance could occur, particularly in outdoor living areas, if sustained for long periods.

NB: Tarkarri Engineering has previously been informed that the residence at receiver 3 is in the ownership of the landowner who holds the mining lease and with whom The Gums quarry proponent has a contract to utilise the land on which the quarry is located.

4. CONCLUSIONS

Predicted noise emission results for major projects hauling practice assessed here show no change at receivers 1 and 2 from results presented in Tarkarri Engineering technical memo report 5016_AC_R. At receiver 3 a significant decrease in noise immission levels are predicted as a result of the new stockpile area location, in particular the relocation of the dozer and front end loader that would operate near the stockpiles (9 dB reduction in L_{Aeq} level and 6 dB reduction in L_{Amax} level). However, L_{Aeq} levels remain above the criteria established for the project and maximum noise levels still have the potential to cause serious annoyance at the receiver 3 location.



I hope this information meets your immediate requirements.

Please contact me directly if you have any questions concerning this work.

Yours faithfully,
Tarkarri Engineering Pty Ltd

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