

Attachment S2 Traffic Impact Assessment (Midson Traffic)



Markana Grazing Company Pty Ltd
The Gums Quarry, Flinders Island
Traffic Impact Assessment

December 2016



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1. Introduction

1.1 Background

Midson Traffic were engaged by Markana Grazing Company to prepare a traffic impact assessment for the expansion of the Gums Quarry in Whitemark, Flinders Island.

1.2 Traffic Impact Assessment (TIA)

A traffic impact assessment (TIA) is a process of compiling and analysing information on the impacts that a specific development proposal is likely to have on the operation of roads and transport networks. A TIA should not only include general impacts relating to traffic management, but should also consider specific impacts on all road users, including on-road public transport, pedestrians, cyclists and heavy vehicles.

This TIA has been prepared in accordance with the Department of State Growth (DSG) publication, *A Framework for Undertaking Traffic Impact Assessments*, September 2007. This TIA has also been prepared with reference to the Austroads publication, *Guide to Traffic Management, Part 12: Traffic Impacts of Developments*, 2009.

Land use developments generate traffic movements as people move to, from and within a development. Without a clear understanding of the type of traffic movements (including cars, pedestrians, trucks, etc), the scale of their movements, timing, duration and location, there is a risk that this traffic movement may contribute to safety issues, unforeseen congestion or other problems where the development connects to the road system or elsewhere on the road network. A TIA attempts to forecast these movements and their impact on the surrounding transport network.

A TIA is not a promotional exercise undertaken on behalf of a developer; a TIA must provide an impartial and objective description of the impacts and traffic effects of a proposed development. A full and detailed assessment of how vehicle and person movements to and from a development site might affect existing road and pedestrian networks is required. An objective consideration of the traffic impact of a proposal is vital to enable planning decisions to be based upon the principles of sustainable development.

This TIA also addresses the relevant clauses of the Flinders Island Planning Scheme 2000.

1.3 Statement of Qualification and Experience

This TIA has been prepared by an experienced and qualified traffic engineer in accordance with the requirements of Council's Planning Scheme and The Department of State Growth's, *A Framework for Undertaking Traffic Impact Assessments*, September 2007, as well as Council's requirements.

The TIA was prepared by Keith Midson. Keith's experience and qualifications are briefly outlined as follows:

- 20 years professional experience in traffic engineering and transport planning.



- Master of Transport, Monash University, 2006
- Master of Traffic, Monash University, 2004
- Bachelor of Civil Engineering, University of Tasmania, 1995
- Engineers Australia: Fellow (FIEAust); Chartered Professional Engineer (CPEng); Engineering Executive (EngExec); National Engineers Register (NER)

Keith is a Director of the traffic engineering, transport planning and road safety company, Midson Traffic Pty Ltd. He is also a Teaching Fellow at Monash University, where he teaches and coordinates the **subject 'Road Safety Engineering' as part of Monash's postgraduate program in traffic and transport.** Keith is also an Honorary Research Associate with the University of Tasmania, where he lectures the **subject 'Transportation Engineering' in the undergraduate civil engineering program as well as** supervising several honours projects each year.

1.4 Project Scope

The project scope of this TIA is outlined as follows:

- Review of the existing road environment in the vicinity of the site and the traffic conditions on the road network.
- Provision of information on the proposed development with regards to traffic movements and activity.
- Identification of the traffic generation potential of the proposal with respect to the surrounding road network in terms of road network capacity.
- Traffic implications of the proposal with respect to the external road network in terms of traffic efficiency and road safety.

1.5 Subject Site

The subject site is located at 634 Palana Road, Whitemark, Flinders Island. The subject site and surrounding road network is shown in Figure 1.

Figure 1 Subject Site & Surrounding Road Network



Source: LIST Map, DPIPW

1.6 Reference Resources

The following references were used in the preparation of this TIA:

- Flinders Planning Scheme, 2000 (Planning Scheme)
- Austroads, *Guide to Traffic Management*, Part 12: *Traffic Impacts of Developments*, 2009
- Austroads, *Guide to Road Design*, Part 4A: Unsignalised and Signalised Intersections, 2009
- DSG, *A Framework for Undertaking Traffic Impact Assessments*, 2007
- Roads and Maritime Services NSW, *Guide to Traffic Generating Developments*, 2002 (RMS Guide)
- Roads and Maritime Services NSW, *Updated Traffic Surveys*, 2013 (Updated RMS Guide)
- Australian Standards, AS2890.1, *Off-Street Parking*, 2004 (AS2890.1:2004)

2. Existing Conditions

2.1 Transport Network

For the purpose of this report, the transport network consists predominantly of Palana Road, and the quarry access road. The impact on other roads in Flinders Island would depend on the destination of quarry material at a campaign level.

Palana Road is a major arterial road owned and maintained by Council. It connects between Palana and Whitemark and services the western region of Flinders Island. Based on available State Growth traffic data, Palana Road is estimated to carry in the order of 500 vehicles per day near the subject site.

Palana Road at the access road junction to the Quarry is shown in Figure 2.

Figure 2 Palana Road



The access road to the quarry is currently unconstructed and is located on private lane as a right-of-way access. The access road will have an unsealed surface with a width of 6 metres. It will be constructed to the IPWEA unsealed road standard.

2.2 Road Safety Performance

Crash data can provide valuable information on the road safety performance of a road network. Existing road safety deficiencies can be highlighted through the examination of crash data, which can assist in determining whether traffic generation from the proposed development may exacerbate any identified issues.

Crash data was obtained from the Department of State Growth for a 5+ year period between 1st January 2011 and 30 October 2016 for all roads on Flinders Island.

The findings of the crash data is summarised as follows:

- A total of 34 crashes were reported during this time. The spatial locations of these crashes are shown in Figure 3.



- Of these crashes, 2 involved serious injury, 11 involved minor injury and 21 involved property damage only.
- 8 crashes were reported in the full length of Palana Road. None of these crashes involved heavy vehicles.
- 9 crashes were reported in Whitemark. Of these crashes, 1 occurred in Palana Road, 1 in Lagoon Road, 3 in Patrick Street, 1 in Lady Barron Road, and 3 in non-defined roads.
- **The most frequent crash type was 'other-manoeuving' (10 crashes), followed by 'other curve' (3 crashes), 'off carriageway left bend' (3 crashes), 'other straight' (3 crashes), 'animal not ridden' (3 crashes).** The crash type frequencies for Flinders Island are shown in Figure 4.

The crash data does not indicate that there are any existing road safety issues on Flinders Island that might be exacerbated by the proposed quarry expansion. The relatively low traffic volumes on Flinders Island result in a low crash exposure risk overall. The locations of relatively crash rates generally correspond to higher traffic volume locations.

Figure 3 Flinders Island Vehicle Crashes

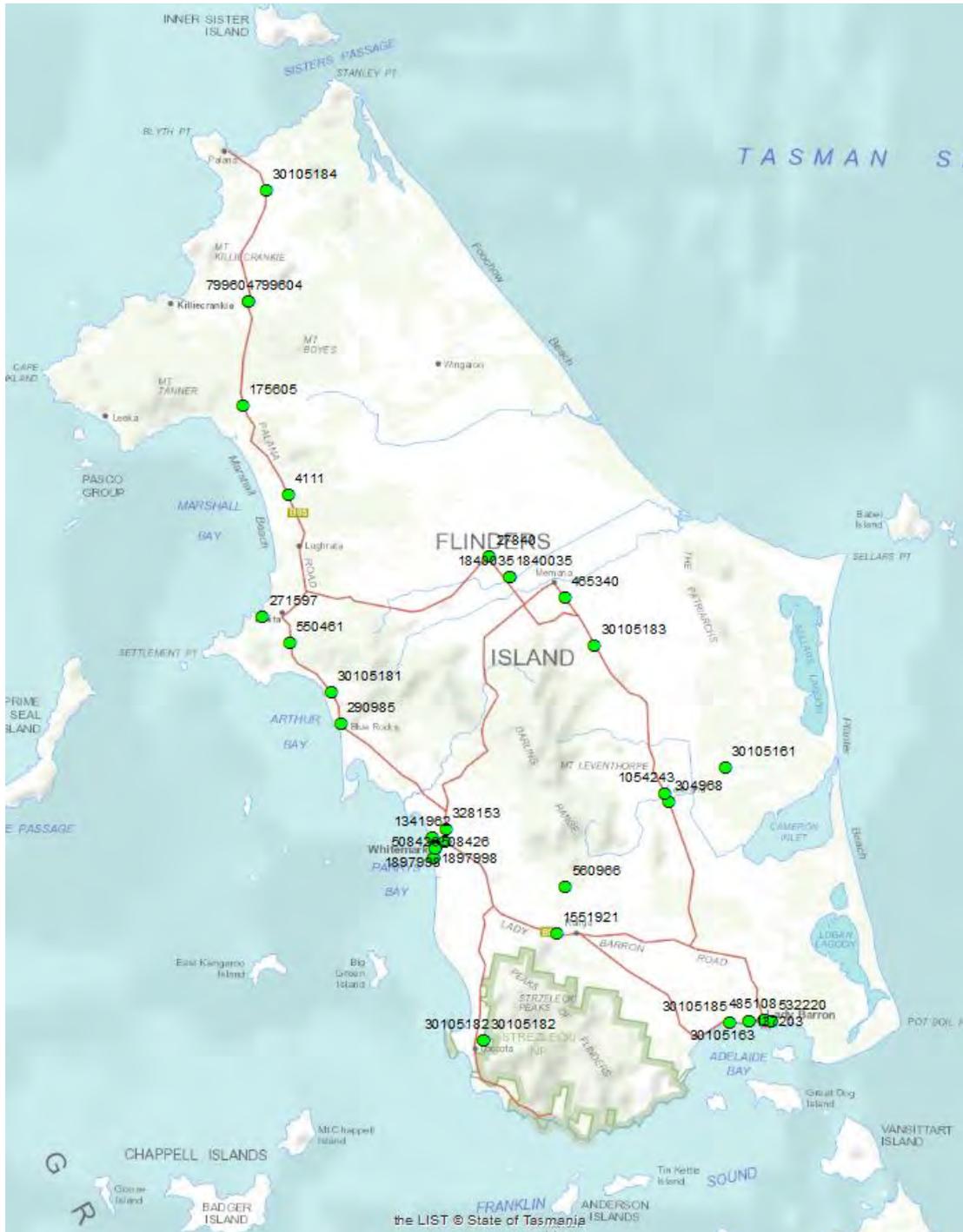




Figure 4 Flinders Island Crash Type Frequencies

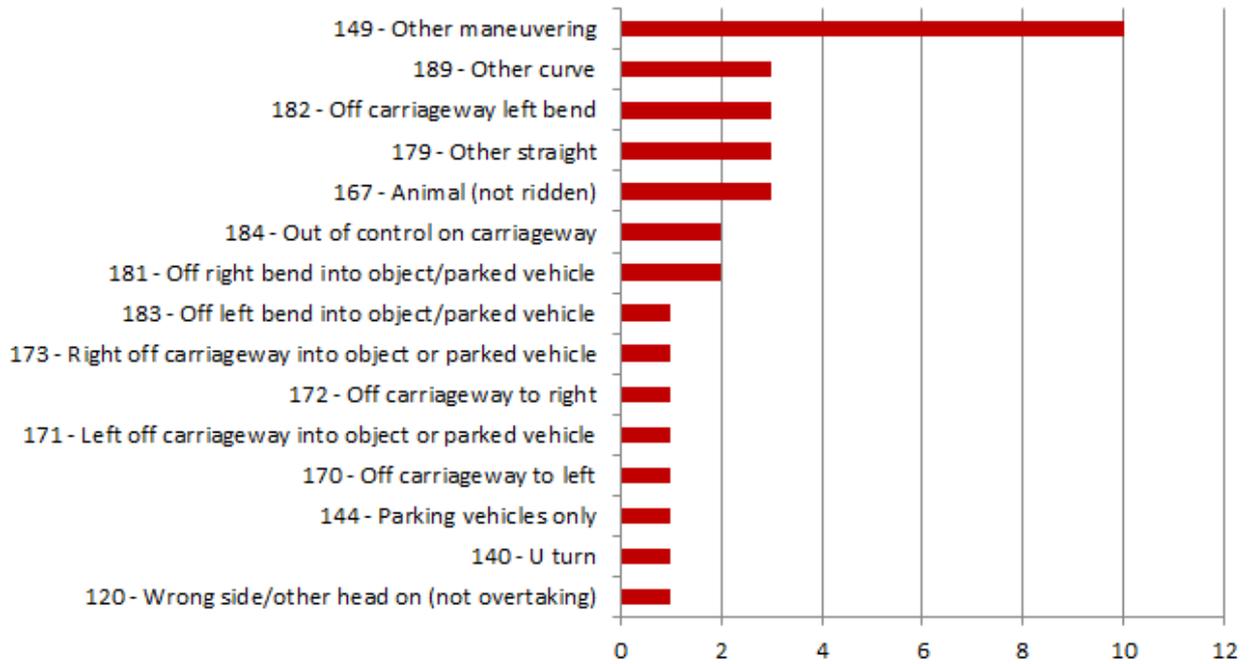


Figure 5 Proposed Development

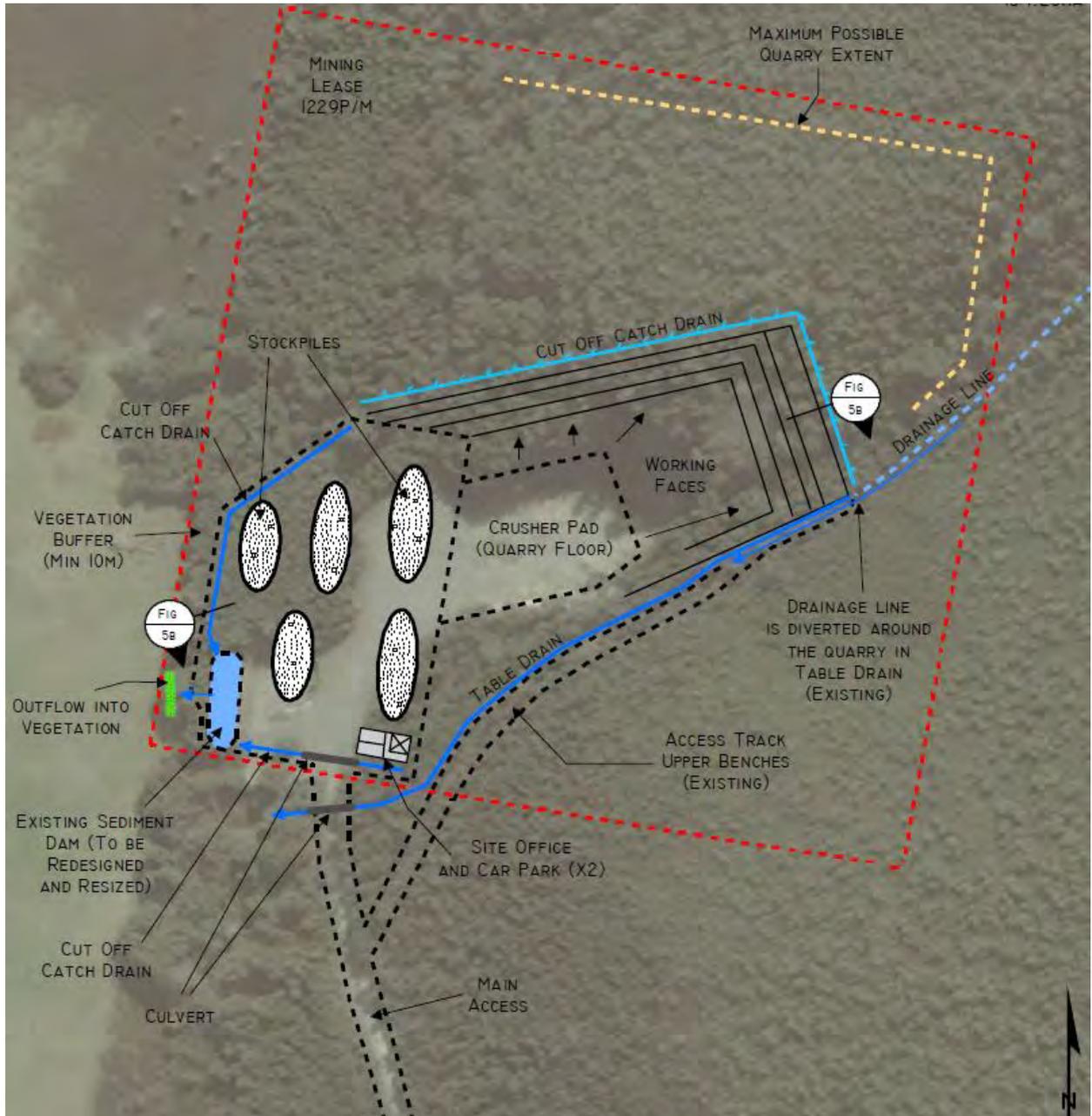


Figure 6 Site Access



4. Traffic Impacts

4.1 Traffic Generation

Daily traffic generation associated with the quarry will vary depending on the demands at any point in time. During normal quarry production activities, gravel trucks will be up to 30 tonnes capacity. For smaller projects (such as road maintenance activities), trucks of 12 tonnes may be utilised.

Examples of typical traffic generation rates associated with the proposed production rates are provided in Table 1 and Table 2 for normal production and major projects respectively.

Table 1 Truck Generation Rates – Normal Production

Type of Supply	Size of Supply	Period of supply and Truck Movements
Campaign	2,000 tonnes using 30t trucks (67 trucks loads)	5 days = 14 laden trucks per day = 28 truck movements per day
Campaign	2,000 tonnes using 20t trucks (100 truck loads)	6 days = 17 laden trucks per day = 34 trucks per day
Low volume	200 tonnes using 12t trucks (17 trucks loads)	2 days = 9 laden trucks per day = 18 trucks per day

Reproduced from DA Supporting Information, Van Diemen Consulting

Table 2 Truck Generation Rates – Major Projects

Type of Supply	Size of Supply	Period of supply and Truck Movements
Campaign	100,000 tonnes using 30t trucks (3,333 truck loads)	60 days = 56 laden trucks per day = 112 trucks per day
Campaign	60,000 tonnes using 30t trucks (2,000 trucks loads)	60 days = 34 laden trucks per day = 68 trucks per day
Campaign	40,000 tonnes using 30t trucks (1,334 truck loads)	45 days = 30 laden trucks per day = 60 trucks per day

Reproduced from DA Supporting Information, Van Diemen Consulting

Staff traffic generation would consist of up to 6 car movements per day (2 staff with average of three movements per day per staff car).

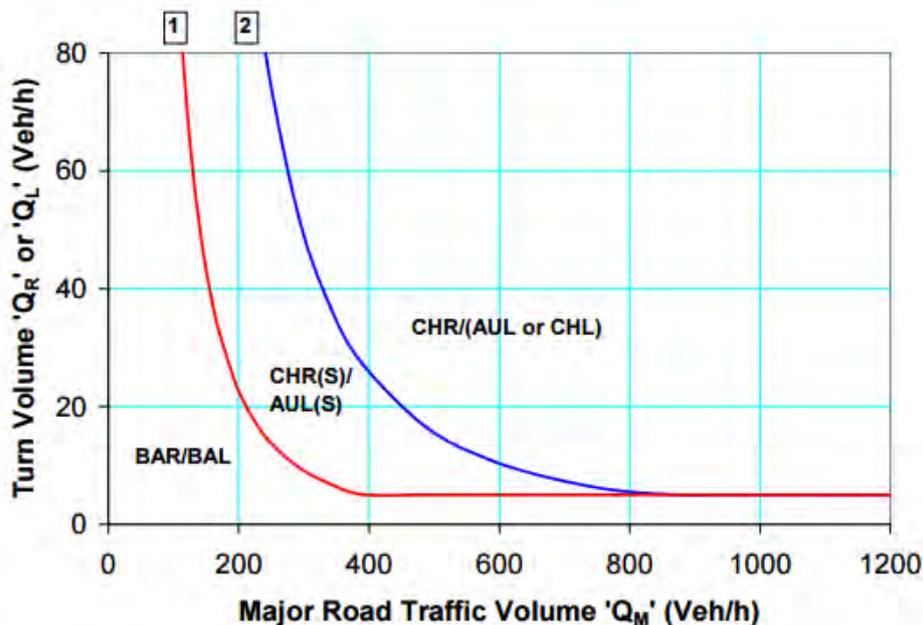
Based on the traffic generation tables above, the peak hour generation of the quarry would vary up to a maximum of 20 vehicle movements per hour (equating to an average of 1 vehicle every 3 minutes, two way traffic flow). Note that during normal quarry activities, peak trip generation would be low, in order of 5 to 10 vehicles per hour.

4.2 Access Impacts

Austrroads Part 4A, provides the guiding technical requirements for junction treatments. In an rural context (speed limit 100-km/h), the requirements for junction treatments are reproduced in Figure 7.

Assuming the peak flow of Palana Road is 15% of AADT, then the major road volume in Figure 7 (Q_M) would be 75 vehicles per hour. The turning volume for any movement (particularly right turn entry manoeuvres) would peak at 12 vehicles per hour (major project truck generation). On this basis, the access falls well short of requiring a dedicated right turn facility in accordance with Austrroads requirements.

Figure 7 Austrroads Turn Lane Warrants



Design speed \geq 100-km/h

4.3 Sight Distance Assessment

Austrroads Part 4A defines Safe Intersection Sight Distance as follows:

"SISD is the minimum standard which should be provided on the major road at any intersection.

SISD:

- *provides sufficient distance for a driver of a vehicle on the major road to observe a vehicle on the minor road approach moving into a collision situation (eg. In the worst case, stalling across the traffic lanes), and to decelerate to a stop before reaching the collision point.*
- *is viewed between two points to provide inter-visibility between drivers and vehicles on the major road and minor road approaches. It is measured from a driver eye height of 1.1 m above the road to points 1.25 m above the road which represents drivers seeing the upper part of the cars.*
- *assumes that the driver on the minor road is situated at a distance of 5.0 m (minimum of 3.0 m) from the lip of the channel or edge line projection of the major road. SISD allows for a 3 second observation time for a driver on the priority legs of the intersection to detect the problem ahead (e.g. car from minor road stalling through lane) plus SSD.*
- *provides sufficient distance for a vehicle to cross the non-terminating movement on two-lane two-way roads, or undertake two-stage crossings of dual carriageways, including those with design speeds of 80 km/h or more.*
- *should also be provided for drivers of vehicles stored in the centre of the road when undertaking a crossing or right-turn movement.*
- *Is measured along the carriageway from the approaching vehicle to the conflict point, the line of sight having to be clear to a point 5.0 m (3.0 m minimum) back from the holding line or stop line on the side road."*

The sight distance of both quarry junctions with the Palana Road junction were assessed against the requirements of the Austrroads Part 4A. For a design speed of 100-km/h, Austrroads requires a minimum SISD of 262 metres in a rural environment (with a driver reaction time of 2.5 seconds).

Available sight distance exceeds 265 metres in both directions along the Palana Road from the access. Therefore **the Austrroads SISD requirements are met at the site's access junction.** The available sight distance from this location is shown in Figure 8.

Figure 8 Sight Distance at Access



4.4 Road Safety Impacts

No significant detrimental road safety impacts are foreseen for the proposed development based on the following:

- There is sufficient capacity in the surrounding network to safely absorb the annual increase in heavy vehicle traffic in the surrounding road network. The maximum daily truck generation of the quarry will be 118 trucks per day (56 inward truck movements, 56 outward truck movements and 6 staff movements per day). The peak hour generation of the quarry will be in the order of 20 vehicles per hour. During normal operations, the traffic generation will be much lower than this volume, therefore the peak hourly capacity of any of the junctions in the surrounding network will not be impacted.
- There is sufficient sight distance available at the Palana Road intersection for the prevailing vehicle speeds in accordance with the Planning Scheme and Austroads requirements.
- There is no crash history to suggest that there are any existing road safety deficiencies in the vicinity of the subject site.
- The proposed development is not a new development but an expansion of existing long-term activity and as such, heavy vehicle movements into and out of the site will not be seen as an unusual event by other motorists.

4.5 Pavement Impacts

The proposed increase in quarry production will generate an increased amount of truck activity on the surrounding road network when the quarry is operating at its capacity. Generally, the effect of light vehicles on road pavement is negligible and pavement fatigue results from heavy vehicle traffic.



The general method for determining the impact of heavy vehicles on road pavements is by using the Equivalent Standard Axle (ESA) to standardise truck loads. The majority of traffic generated by the quarry is Austroads Class 4, Three Axle Truck, with or without attached trailer.

According to the Austroads Vehicle Classification System (2004), Class 4 vehicles have 3 axles in 2 axle groups, resulting in the following axle configurations:

- Class 4 vehicle
 - 1x SADT 0.6 ESA
 - 1x TADT 1.0 ESA
- Class 4 vehicle with trailer
 - 1x SADT 0.6 ESA
 - 2x TADT 2.0 ESA

Assuming that approximately one quarter of the trucks have trailers attached, the additional average pavement load due to the proposed increase in operations is 1.0 ESA per vehicle. This results in a total pavement loading of approximately 6,400 ESA per year (based on the maximum yearly production of 120,000 cubic metres).

Assuming the traffic distribution provided in Section 4.1 applies on an annual basis, then the greatest increase in ESA loading on a single road in the surrounding road network is on Palana Road. The increased ESA loading on Palana Road would be in the order of 6,400 ESA per year. This increase is relatively minor in terms of the design life of the road overall (which would be expected to be in the order of millions or tens of millions ESA total), which already carries a moderate proportion of heavy vehicle traffic being a major arterial road along the western side of Flinders Island.

The impact on other roads on Flinders Island would be relatively insignificant based on short duration trips on an infrequent basis over the course of a typical design life of the roads in the Flinders Island network.

Normal quarry operations are likely to accelerate pavement damage near the two access locations over time. This is due to the turning, acceleration and deceleration of trucks at the access locations. Periodic maintenance of the road pavement at the two access locations will be required throughout **the quarry's** lifespan.

4.6 Planning Scheme Requirements

Schedule 6.6 of the Planning Scheme outlines the traffic and parking requirements associated with new development. The requirements are reproduced as follows:

- (a) All new lots must be provided with satisfactory pedestrian and vehicular access to a public street.*
- (b) All Use or Development shall provide satisfactory pedestrian and vehicular access which is suited to the volume and needs of future users.*
- (c) Buildings and spaces intended for public access shall provide for satisfactory use and access by the disabled; the requirements of the Building Regulations in relation to AS1428.1-1988 shall be met.*
- (d) Road widths shall be appropriate to the road function, expected traffic type and volume, and future subdivision potential of the subject and surrounding land.*
- (e) Footpaths shall normally be required in areas of new subdivision except where low vehicle traffic volumes are anticipated, in which case a footpath one side only or no footpath may be appropriate.*
- (f) Road intersections shall be kept to a minimum with the use of existing roads, service roads and/or shared driveways being encouraged where appropriate.*
- (g) Intersections of roads, footpaths and foot crossings and driveways shall provide adequate safety for all users and shall satisfy the relevant requirements of Schedule 4.*
- (h) New Use or Development shall provide a suitably constructed driveway of a width to provide for the safe ingress and egress of the anticipated volume of traffic associated with the Use or Development*
- (i) New Use or Development shall provide adequate car parking to provide for the demand it generates and shall be capable of being safely accessed.*
- (j) On site turning shall be provided for development involving significant traffic volumes, heavy vehicle types and/or on roads which carry significant amounts of traffic.*
- (k) New Use or Development in Bushfire Prone Areas will require access that complies with the provisions of Schedule 7, Development in Bushfire Prone Areas*

In this case, the development is not a new lot or new development, but an expansion of an existing activity for the site. The site has an existing access that will require upgrading to cater for the increased traffic generation.

The following points are relevant:

- b. The junction of the site access has sufficient sight distance in accordance with Planning Scheme and Austroads requirements (Section 4.3). The junction does not require any turning lane facility in accordance with Austroads requirements (Section 4.2).



-
- d. The access road will be widened in accordance with IPWEA municipal standards.
 - g. The junction of the site access has sufficient sight distance in accordance with Planning Scheme and Austroads requirements (Section 4.3).
 - h. The junction shall be constructed to IPWEA municipal standards design for a rural access. The junction does not require any turning lane facility in accordance with Austroads requirements (Section 4.2).
 - i. There is sufficient available land to store all vehicles associated with quarry activities on site.
 - j. All vehicles will be able to enter and leave the site in a forwards motion.

The proposed quarry expansion therefore complies with the relevant requirements of the Planning Scheme.

5. Conclusions

This traffic impact assessment (TIA) investigated the traffic and parking impacts of a proposed **expansion of 'The Gums' quarry** at 634 Palana Road, Whitemark, Flinders Island.

The key findings of the TIA are summarised as follows:

- The quarry will generate up to 118 truck movements per day during supply for a major project. During normal operations, the quarry will generate up to 34 trucks per day.
- The maximum peak trip generation of the quarry is likely to be up to 20 vehicles per hour. During normal operations, the peak trip generation will be lower than this volume.
- The junction of the site access has sufficient sight distance in accordance with Planning Scheme and Austroads requirements.
- The junction does not require any turning lane facility in accordance with Austroads requirements.
- The pavement impacts associated with the quarry operations are likely to be relatively insignificant. Normal operations are likely to accelerate pavement damage near the two access locations over time.
- The two junctions connecting to Palana Road shall be constructed to IPWEA municipal standards design for a rural access.

Based on the findings of this report and subject to the recommendations above, the proposed development is supported on traffic grounds.



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Document Status

Revision	Author	Review	Date
0	Keith Midson	Zara Kacic-Midson	6 December 2016

Attachment S3 Dust Management Plan

DUST MANAGEMENT PLAN

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



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1. INTRODUCTION

1.1 OPERATION DESCRIPTION AND BACKGROUND

The Gums Quarry is located on private freehold land at 634 Palana Road Whitemark in the Flinders Island Municipality.

The two operational modes for the activity 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.

1.1.1 OPERATOR

The operator, Markarna Grazing Company Pty Ltd, owns and operates a large pastoral enterprise in the northern section of Flinders island – Markarna Park.

The contact details for the company are –

Markarna Grazing Company Pty Ltd

ABN - 11 082 820 760

Address: 100 Section Road, Greenvale Victoria 3059 Australia

Phone: +61 3 9333 2400

Fax: +61 3 9 333 1258

The details for the contact person are –

Mr George Adams

Address: 100 Section Road, Greenvale Victoria 3059 Australia

Phone: +61 3 9333 2400

Fax: +61 3 9 333 1258

1.1.2 QUARRY DETAILS

Physical address – 634 Palana Road Whitemark TAS 7255

PID - 2829461

Land Titles – 245509/1, 154854/3

Mining Lease Number – 1229P/M

1.2 PURPOSE AND SCOPE

The Dust Management Plan has been prepared to identify, assess and manage dust-relevant impacts associated with the activity. The plan applies during the construction, operation and shut down phases of the quarry. The plan will be subject to ongoing review and change to ensure that it remains relevant and effective.

Dust for the purposes of this plan is –

‘...any particle suspended within the atmosphere. Particles can range in size from as small as a few nanometres to 100 microns (μm) and can become airborne through the action of wind turbulence,

by mechanical disturbance of fine materials or through the release of particulate rich gaseous emissions.’

2. ENVIRONMENTAL OBJECTIVES

The primary objective of this Dust Management Plan is to comply with the dust-relevant conditions of the permits associated with the activity.

This objective will be achieved through establishing:

- Relevant dust control management actions and responsibilities; and
- A monitoring system that can report performance.

Environmental objectives and performance indicators are described in Table 1.

3. MANAGEMENT ACTIONS

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

Potential sources of dust within the quarry operation are from:

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

3.1.1 Crusher Use and Dust Suppression

The QCP suggests that –

‘Fixed plant and other working areas should be located on the premises with due regard to dust and noise emissions which may affect neighbours outside the premise's boundary. Plant location should also take into account the visibility of the plant.’

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

3.1.2 General Dust Suppression

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

- Watering of internal roads as required during dry and windy conditions;
- Retention of vegetation along the access road corridor where possible;
- Retention of native vegetation around the quarry working area to reduce the likelihood of strong winds liberating fine particles into the air;
- All site traffic is required to adhere to the site speed limit to minimise dust generated

by vehicle movement; and

- Minimising the geographic extent of areas of exposed soil.

These following specific management actions are some options available to limit or avoid dust emissions from the activity –

1. Watering internal roads and dust generating areas with dust suppressant additive as required.
2. Dust suppressant applied to stockpiles with dye to form an erosion resistant crust.
3. Using sprinkler/fogging systems around high activity infrastructure areas, especially the crusher unit.
4. Establish shade-cloth barrier fencing in an operational condition surrounding the dust prone areas of the quarry floor/stockpiles.

The deployment of these additional measures would only be contemplated if dust could not be managed with the general measures described above. For example, the use of a suppressant (chemical, usually a polymer compound) may be required when and if water becomes limiting at the site to be able to dampen roads.

Key management actions and responses that have been identified to assist in achieving the dust management objectives are detailed in Table 1.

All actions undertaken for mitigation of dust during dusty conditions will be recorded by the site supervisor. This information will be used to determine compliance when auditing and reporting.

Table 1. Management Actions for the Control and Mitigation of Dust emissions

Parameter	Action	Responsibility
Induction	<ul style="list-style-type: none"> Induction for all employees will include information on: <ul style="list-style-type: none"> Potential sources of dust Dust Management Plan and permit conditions Speed limits onsite and staying on designated roads Who to report dust issues too 	Quarry Manager
Windy conditions	<ul style="list-style-type: none"> Monitor wind and weather forecasts (Bureau of Meteorology) and cease section (or all) of the operation where dust cannot be controlled to reasonable levels where it will not cause environmental harm. Do not assume wind direction according to the weather station as large structures will affect wind direction (eddies). Check all boundaries when monitoring dust conditions. 	Quarry Manager (Site supervisor in lieu)
Traffic	<ul style="list-style-type: none"> Adhere to site speed limits and designated roads Tarping or dampening of loads exiting site 	Drivers
Open Areas	<ul style="list-style-type: none"> Minimise open areas exposed to wind erosion as much as practical by completing an annual assessment of areas suitable for stabilisation, and carry out stabilisation works. 	Quarry Manager (Site supervisor in lieu)
Dust suppression	<ul style="list-style-type: none"> Operate water carts during dry, windy conditions and during the summer months All unsealed roads being used for heavy vehicle traffic within the quarry area will be treated with dust suppressant additives where necessary. Apply suppressant and dyes to all non-active stockpiles prone to wind erosion when necessary. Add dust suppressant additives to sprays on crushing plants when necessary. 	Quarry Manager and Site supervisor
Clearing	<ul style="list-style-type: none"> Conduct topsoil stripping only during suitable wind and weather conditions to minimise the generation of dust. 	Production Manager

Crushing & screening including mobile crushers	<ul style="list-style-type: none"> • Daily inspections of sprinklers and dust suppressant systems to ensure operational, clean as required. • Monitor dust suppressant systems during crushing & screening operations of the plant when they are being used, top-up as required. • On days where dust cannot be adequately controlled shut down operations until dust can be satisfactorily managed. 	Plant Operator
Load & haul	<ul style="list-style-type: none"> • Loader operators to monitor loading conditions and call on water truck to dampen areas in dusty conditions • Haul truck operators to monitor road conditions and call on water trucks to dampen roads when dust starts to come off roads • Haul truck operators to reduce speed on days to minimise dust • On days where dust cannot be adequately controlled shut down operations until dust can be satisfactorily managed. 	Machine operators
Drill & Blast	<ul style="list-style-type: none"> • Maintain dust encapsulation systems on drill rigs • Monitor wind and weather forecasts (Bureau of Meteorology) to determine days when blasting cannot occur due to adverse weather conditions. 	Blast Coordinator

4. MONITORING

Monitoring is required to enable an assessment of the effectiveness of the dust management controls and improvements to be made where required.

A complaints register will be maintained as part of the overall activity. Complaints received will be investigated, and the dust suppression methods reviewed. Suitable remedial actions will be undertaken as necessary and practicable.

5. PERFORMANCE INDICATORS

The effectiveness of the Dust Management Program will be reviewed against the following indicators:

- Compliance with licence criteria and guideline values for ambient air quality.
- The level of substantiated complaints received and registered.
- The level of complaints satisfaction achieved.
- The absence of fugitive dust originating from cleared areas, product stockpiles and sources of mining activities

Using these performance indicators Penrice will undergo continuous review of its dust management procedures and will adjust target levels as improved resources, capabilities or technical understanding is achieved.

6. REVIEW AND REVISION

This management plan will be reviewed and revised –

- If there are major changes to its operations;
- In response to issues raised by the EPA;
- In response to issues raised through community feedback; and
- In response to any incident which results in a failure to meet any of the commitments of this plan.

Revised plans will be provided to the EPA for approval prior to implementation.

7. COMPLAINT HANDLING

All complaints received will be handled per the below listed complaint procedure. The complainant shall supply substantiated evidence that the dust has left the boundary of the site before investigative actions are taken towards the complaint.

- All complaints received have recorded time, location and concern with as much detail as possible
- Confirm acceptable follow up time/day with complainant
- Complete incident report form

The complainant will be contacted and an investigation of the complaint initiated within 24 hours of the receipt of the complaint. If requested the findings of the investigation will be explained and discussed with the complainant.

Van Diemen Consulting Pty Ltd

PO Box 1

New Town, Tasmania

T: 0438 588 695 E: rwbarnes73@gmail.com

This document has been prepared in accordance with the scope of services agreed upon between Van Diemen Consulting (VDC) and the Client.

To the best of VDC's knowledge, the report presented herein represents the Client's intentions at the time of completing the document. However, the passage of time, manifestation of latent conditions or impacts of future events may result in changes to matters that are otherwise described in this document. In preparing this document VDC has relied upon data, surveys, analysis, designs, plans and other information provided by the client, and other individuals and organisations referenced herein. Except as otherwise stated in this document, VDC has not verified the accuracy or completeness of such data, surveys, analysis, designs, plans and other information.

No responsibility is accepted for use of any part of this document in any other context or for any other purpose by third parties.

This document does not purport to provide legal advice. Readers should engage professional legal advisers for this purpose.

Document Status

Revision	Author	Reviewer and Organisation	Date
1	R Barnes C McCoull	RW Barnes, VDC Pty Ltd	01-02-2017
1	R Barnes C McCoull	G Adams, Adams Group	01-02-2017

Attachment S4 Council costs for importing gravel – airport runway repair project



Richard Barnes <rwbarnes73@gmail.com>

Cost of gravel/rock freight for Flinders Island runway repairs 2015/16

Richard Barnes <rwbarnes73@gmail.com>
To: ea@flinders.tas.gov.au
Cc: sophie.pitchford@flinders.tas.gov.au

Thu, Dec 8, 2016 at 7:58 AM

Dear General Manager

I write to request information about the cost of freight paid by Council for the delivery of gravel and rock product to the island for the airport runway repairs conducted in 2015-16.

I note the project received Commonwealth funding (http://minister.infrastructure.gov.au/wt/releases/2015/December/wt421_2015.aspx).

The reason for the request, which may otherwise seem a bit unusual, is outlined below.

As you may be aware, a development application for the intensification of use for an existing quarry known as The Gums Quarry, north of Whitemark was advertised and has now closed for public comment. Several comments were made during the representation phase of the application. Some were made in relation to the economic benefit of having a gravel resource available on island as opposed to gravel needing to be imported onto the island from elsewhere - there seem to be mixed views on this matter.

The EPA have requested a Supplement based on the representations received and the agency comments. In providing details to the EPA for the supplement process, and to also respond to comments made during the statutory consultation phase, we want to be as open and comprehensive in providing information as possible.

In order to provide evidence and information in relation to the matters raised about the economic benefits of an island resource, I request of Council information (receipts, invoices etc) about the cost it paid for the freight of gravel/rock used for the airport runway repairs.

My preference is to ask for the information first rather than lodge a Right to Information request, which takes time and costs funds for both the applicant and respondent.

I suspect that the information I have requested would qualify for active disclosure by Council, the funds were from the public and the project itself is for the public benefit. Alternatively, Council may deem it to need assessment (assessed disclosure) prior to being released, which would require the lodging of a RTI request.

I look forward to your reply.

regards
Richard

—
Dr Richard Barnes BSc(Hons) PhD GDURP MPIA MESA
Principal Environmental, Regional and Urban Planner
Environmental Specialist and Ecologist

Director, Van Diemen Consulting Pty Ltd,
Mobile: 0438 588 695



Richard Barnes <rwbarnes73@gmail.com>

Cost of gravel/rock freight for Flinders Island runway repairs 2015/16

Sophie Pitchford <Sophie.Pitchford@flinders.tas.gov.au>
To: Richard Barnes <rwbarnes73@gmail.com>
Cc: Executive Assistant <executive.assistant@flinders.tas.gov.au>

Fri, Dec 9, 2016 at 9:53 AM

Morning Richard

The freight component for the runway priority repairs program which was partly funded by Commonwealth funding was approximately \$80k.

If you would like copies of invoices, you will need to lodge a Right to Information request.

Kind Regards

Sophie Pitchford BBus CPA

Acting General Manager

M. 0411 103 975

E. sophie.pitchford@flinders.tas.gov.au

Website. flinders.tas.gov.au

Facebook. [facebook.com/flinderscouncil](https://www.facebook.com/flinderscouncil)

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From: Richard Barnes [mailto:rwbarnes73@gmail.com]
Sent: Thursday, 8 December 2016 7:59 AM
To: Executive Assistant
Cc: Sophie Pitchford
Subject: Cost of gravel/rock freight for Flinders Island runway repairs 2015/16

[Quoted text hidden]



Richard Barnes <rwbarnes73@gmail.com>

Cost of gravel/rock freight for Flinders Island runway repairs 2015/16

Sophie Pitchford <Sophie.Pitchford@flinders.tas.gov.au>
To: Richard Barnes <rwbarnes73@gmail.com>
Cc: Executive Assistant <executive.assistant@flinders.tas.gov.au>

Mon, Dec 12, 2016 at 9:35 AM

Morning Richard

The freight component in my previous email was GST Exc.

The amount of aggregate that we shipped in was about 1200 tonne.

Cheers.

Sophie Pitchford BBus CPA

Acting General Manager

M. 0411 103 975

E. sophie.pitchford@flinders.tas.gov.au

Website. flinders.tas.gov.au

Facebook. [facebook.com/flinderscouncil](https://www.facebook.com/flinderscouncil)

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From: Richard Barnes [mailto:rwbarnes73@gmail.com]

Sent: Friday, 9 December 2016 10:19 AM

To: Sophie Pitchford

Cc: Executive Assistant

Subject: Re: Cost of gravel/rock freight for Flinders Island runway repairs 2015/16

[Quoted text hidden]



Richard Barnes <rwbarnes73@gmail.com>

Cost of gravel/rock freight for Flinders Island runway repairs 2015/16

Richard Barnes <rwbarnes73@gmail.com>

Fri, Dec 9, 2016 at 10:18 AM

To: Sophie Pitchford <Sophie.Pitchford@flinders.tas.gov.au>

Cc: Executive Assistant <executive.assistant@flinders.tas.gov.au>

Dear Ms Pitchford

Thank you for your email and information contained therein.

To clarify, is the amount nominated inclusive of GST? Also, what is the volume of gravel/rock covered by the fee paid by Council?

The provision of this information by Council should avoid a RTI.

regards

Richard Barnes

[Quoted text hidden]

Attachment S5 Blast Management Plan (Revised)

THE GUMS QUARRY, FLINDERS ISLAND

BLAST MANAGEMENT PLAN – REVISED APRIL 2017



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FIGURES

Figure 1 – Location of The Gums Quarry

Figure 2 – Residences within 1 km of the Mining Lease

Figure 3 – Airport land and Flight Paths (approximate)

ABBREVIATIONS / GLOSSARY

DPIPWE	Department of Primary Industries, Parks, Water and Environment
EMPCA	<i>Environmental Management and Pollution Control Act 1994 (Tas)</i>
EPA	Environment Protection Authority
ML	Mining Lease
MRT	Mineral Resources Tasmania
QCP	<i>Tasmanian Quarry Code of Practice 1999</i>
(the) Plan	Blast Management Plan

OBJECTIVES OF PLAN

The objectives of this Blast Management Plan (the Plan) are to:

- Achieve best practice management for blasts conducted at The Gums Quarry;
- Notify neighbours and the Flinders Airport operator of impending blasts
- Establish measures to minimise conflict between adjoining and nearby land uses;
- Establish safe systems of work with explosives and blast preparation/implementation;
- Identify emergency procedures for the clean-up of ‘fly rock’ that may affect other land users; and
- Monitor and record each blast for environmental attributes for compliance requirements.

BACKGROUND INFORMATION

QUARRY OPERATOR

The proponent, Markarna Grazing Company Pty Ltd, owns and operates a large pastoral enterprise in the northern section of Flinders island – Markarna Park.

The contact details for the company are –

Markarna Grazing Company Pty Ltd

ABN - 11 082 820 760

Address: 100 Section Road, Greenvale Victoria 3059 Australia

Phone: +61 3 9333 2400

Fax: +61 3 9 333 1258

QUARRY DETAILS

Physical address – 634 Palana Road Whitemark TAS 7255

PID - 2829461

Land Titles – 245509/1, 154854/3

Planning Zones (*Flinders Planning Scheme 2000*) – Rural

Planning Overlays (*Flinders Planning Scheme 2000*) – Buffer Attenuation Area

Mining Lease Number – 1229P/M

584000

586000

588000

5564000

5562000

5560000

5558000

LOCATION OF THE GUMS QUARRY MINING LEASE - 1229P/M

FLINDERS ISLAND AIRPORT

Boyes Road

Bluff Road

Hines Road

Blundstones Road

Memana Road

Harleys Road

Cemetery Road

Virieux Road

Palana Road

Thule Road

Lagoon Road

Esplanade

Paulich Street

WHITEMARK

Baileys Lane

Butter Factory Road

Lady Barron Road

Parrys Bay

0 0.5 1 2 KILOMETERS



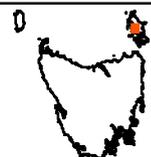
THE GUMS QUARRY - WHITEMARK BLAST MANAGEMENT PLAN

FIGURE I: LOCATION OF THE GUMS QUARRY



PO Box 1 New Town TAS 7008

BASE DATA BY TASMAR © STATE OF TASMANIA
BASE IMAGE BY TASMAR © STATE OF TASMANIA



DATUM: GDA94
GRID: MGA ZONE 55

TASMAR: LEVENTHORPE

CLIFF GADAMS GROUP

DATE: 27TH APRIL 2016

ROLES AND RESPONSIBILITIES

For the plan to be successfully and accurately implemented there needs to be clearly defined roles and responsibilities for each and every blast that occurs at the quarry. These roles and responsibilities will apply across various contractors, staff and the owner to ensure that each blast is well planned, managed and executed such that the blasts are safe, effective and within best practice limits.

The Quarry Operator is to ensure that:

- the Blast Contractor (BC) is briefed on the requirements of the Plan and its importance to the worker/landowner safety and production success of the blast; and
- this Plan is complied with through assessments of the quarry and liaison with the BC;
- monitor operational performance of the BC to ensure compliance with license conditions;
- implement and update the Blast Management Plan as required;
- variations to this Plan are developed and provided to the Environment Protection Authority for approval;
- ensure that all notifications are made as required under this Plan;
- ensure all notifications are given in the event of a misfire or incident that would cause the Plan to be enacted for its emergency procedures or notifications to the EPA Director and/or neighbours and the Flinders Island Airport operator
- respond in a timely manner to any complaints received from the blasting activities at the quarry; and
- that noise/vibration test results are collected by the Contractor and securely held for 5 years from the date of the blast.

The Blast Contractor (BC) is to ensure:

- this Plan is complied with and appropriately implemented;
- coordination of the work of staff and contractors, including site inductions of sub-contractors and others required to implement the blast;
- advise the Quarry Operator or their delegated representative of any misfires or incidents that would cause the Plan to be enacted for its emergency procedures or notifications to the EPA Director and/or neighbours and the Flinders Island Airport operator;
- conducting appropriate risk assessments for the blast and mitigating those risks, and the safe and lawful handling and storage of dangerous goods;
- establishment of appropriate noise/vibration monitoring sites to collect data consistent with the requirements of the EPA for blast monitoring;
- conducting noise measurements for each blast consistent with this Plan; and
- timely and effective delivery of noise/vibration test results to the Quarry Operator.

Quarry Operator staff are to ensure that they:

- apply safety measures consistent with this Plan; and
- take reasonable direction from the Blast Contractor during site preparation works for the blast and immediately during and after the blast.

OPERATIONAL PROCEDURES**LOCATION AND BLAST SCHEDULING**

Blasts will occur on a needs basis. A schedule will be drafted for each calendar year and provided to the EPA Director such that he/she is aware of the number of scheduled blasts and their timing for that year.

Given the nature of this quarry and its ability to exceed its base annual extraction level of 20,000 cubic metres for major projects (ie up to 100,000 cubic metres per annum for major projects), a blast schedule will be given to the EPA Director for each major project that is planned for the quarry. The schedule will be provided to the EPA Director at least 30 days prior to the blasting of rock for a major project.

BLAST CONTRACTOR

Only Blast Contractors with a valid Category 2 shot-firing permit (surface shot-firing - above-ground quarrying, road construction and open cut mining) issued under the *Explosives Regulations 2012* will be used.

BLASTING TIMES

Blasting will only take place between the hours of 1000 hours and 1600 hours Monday to Friday.

Blasting will not take place on Saturdays, Sundays or public holidays unless prior written approval of the EPA Director has been obtained.

BLASTING PROCEDURE, TYPES OF EXPLOSIVES, INITIATION SYSTEMS

The explosives to be used are likely to be ANFO (dry) and Rioflex 80-20 wet emulsion.

ANFO (or AN/FO, for ammonium nitrate/fuel oil) is a widely used bulk industrial explosive mixture. It consists of 94 percent porous prilled ammonium nitrate (NH_4NO_3), (AN) that acts as the oxidizing agent and absorbent for the fuel – six percent number 2 fuel oil (FO). ANFO has found wide use in coal mining, quarrying, metal mining, and civil construction in undemanding applications where the advantages of ANFO's low cost and ease of use matter more than the benefits offered by conventional industrial explosives, such as water resistance, oxygen balance, high detonation velocity, and performance in small diameters.

Detonation is likely to be by a Nonel system -

- trunkline delays at surface 17 ms, 25 ms, 32 ms and 65 ms; and
- trunkline delays down hole of 450 and 500 ms.

Hole depth is likely to be 6-15 m of holes, with an average depth of 10 m.

Explosives will be loaded into the drilled hole with stemming to nominally 2.5 depth with 20 mm clean crushed rock. The depth of stemming is dependent on rock type, 80-120% of burden subject to rock type. A typical blast pattern for hard-rock is 2.2 m burden and 2.7m spacing.

STORAGE AND HANDLING OF EXPLOSIVES

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

BLASTING - NOISE AND VIBRATION LIMITS

Blasting will be carried out in accordance with blasting best practice environmental management (BPEM) principles, and must be carried out such that, when measured at the curtilage of any residence (or other noise sensitive premises) in other occupation or ownership, air blast and ground vibration comply with the following:

- for 95% of blasts, air blast over pressure must not exceed 115dB (Lin Peak);
- air blast over pressure must not exceed 120dB (Lin Peak);
- for 95% of blasts ground vibration must not exceed 5mm/sec peak particle velocity; and
- ground vibration must not exceed 10mm/sec peak particle velocity.

All measurements of air blast overpressure and peak particle velocity must be carried out in accordance with the methods set down in *Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration*, Australian and New Zealand Environment Council, September 1990.

NOTIFICATION OF BLASTING AND FLY-ROCK MANAGEMENT

A video/camera system will be used to record each blast with it focused specifically on the creation or otherwise of fly-rock into the adjoining land or other land (eg the Flinders Island Airport). This is a means to capture real-time footage of the blast to determine if fly-rock has been created and to which direction it may have been directed.

Residential neighbours

All residents within a 1 km radius of a blast must be **notified in writing** prior to that blast. This notification must be given at least 48 hours before such blasting is due to occur.

In the event that the blast(s) cannot take place at the time specified, or as a result of blasting misfires, Markarna Grazing Company Pty Ltd or their delegated agent will advise all those residents within 1 km of the Quarry of the revised time at which blasting will take place.

In the event of a major failure of the blast that leads to fly-rock towards the neighbour to the west of the quarry, the Markarna Grazing Company Pty Ltd or their delegated agent will immediately advise the neighbour of the event.

Markarna Grazing Company Pty Ltd will fund the inspection of the paddocks and will remove the fly-rock at its cost and repair any damage caused by the fly-rock. The identification of fly-rock will be by a suitably qualified person with expertise in the shape, form and other characteristics of fly-rock to ensure that this is identified from the rocks that were already present in the agricultural fields.

Flinders island Airport operator

The Flinders Island Airport is to the south of the quarry, but **is outside the potential distance that may be affected by fly-rock** if the blast has significant failures (Figure 3).

There is the potential for fly-rock to affect planes as they approach and depart the airport as the flight path is near the quarry (Figure 3).

The Flinders Island Airport must be **notified in writing** prior to that blast. This notification must be given at least 48 hours before such blasting is due to occur.

In the event that the blast(s) cannot take place at the time specified, or as a result of blasting misfires, Markarna Grazing Company Pty Ltd or their delegated agent will advise Flinders Island Airport of the revised time at which blasting will take place. The timing may need to be negotiated with the operator of the Flinders Island Airport as planes may be approaching or departing at the time nominated for the blast.

The Quarry Operator respects the use of the Flinders Island Airport and the airspace the planes use. Accordingly, the Quarry Operator will give priority to the use of the airport and planes.

Environment Protection Authority

The Director will be notified on each occasion prior to blasting at the Quarry. Notification will be given as early as possible, but at least 24 hours before blasting is due to occur.

In the event that the blasting noise limits and vibration specified above are exceeded, the EPA Director must be notified by Markarna Grazing Company Pty Ltd within 48 hours of the blasting event.

POTENTIAL BLAST IMPACTS

There are several potential impacts from blasting, all of which have been mitigated through on-ground planning and careful use of explosives:

Noise and Vibration

- Drill rig noise – limited in operation to a few days prior to each blast.
- Blast noise – the blast noise is expected to be less than the permitted threshold, notification process in place to advise residents of impending blasts, monitoring stations will be used for each blast to record information for future improvements in blast management when required.
- Blast vibration – minimised by the use of appropriate explosives, expected to be within permit threshold, monitoring stations will be used for each blast to record information for future improvements in blast management when required.

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.

583000

583500

584000

584500

585000

Annexure 2 - A1 - October 2017

5566500

5566000

5565500

5565000

5564500

5564000

5563500

1KM BUFFER OF MINING LEASE

MINING LEASE

RESIDENCE ON
VOL/FOL 141190/3
APPROX 700M FROM
MINING LEASE

0 125 250 500 METERS

THE GUMS QUARRY - WHITEMARK BLAST MANAGEMENT PLAN

FIGURE 2: RESIDENCES WITHIN 1KM OF THE MINING LEASE



PO Box 1 New Town TAS 7008

BASE DATA BY TASMAR. © STATE OF TASMANIA
BASE IMAGE © 2016 GOOGLE EARTH

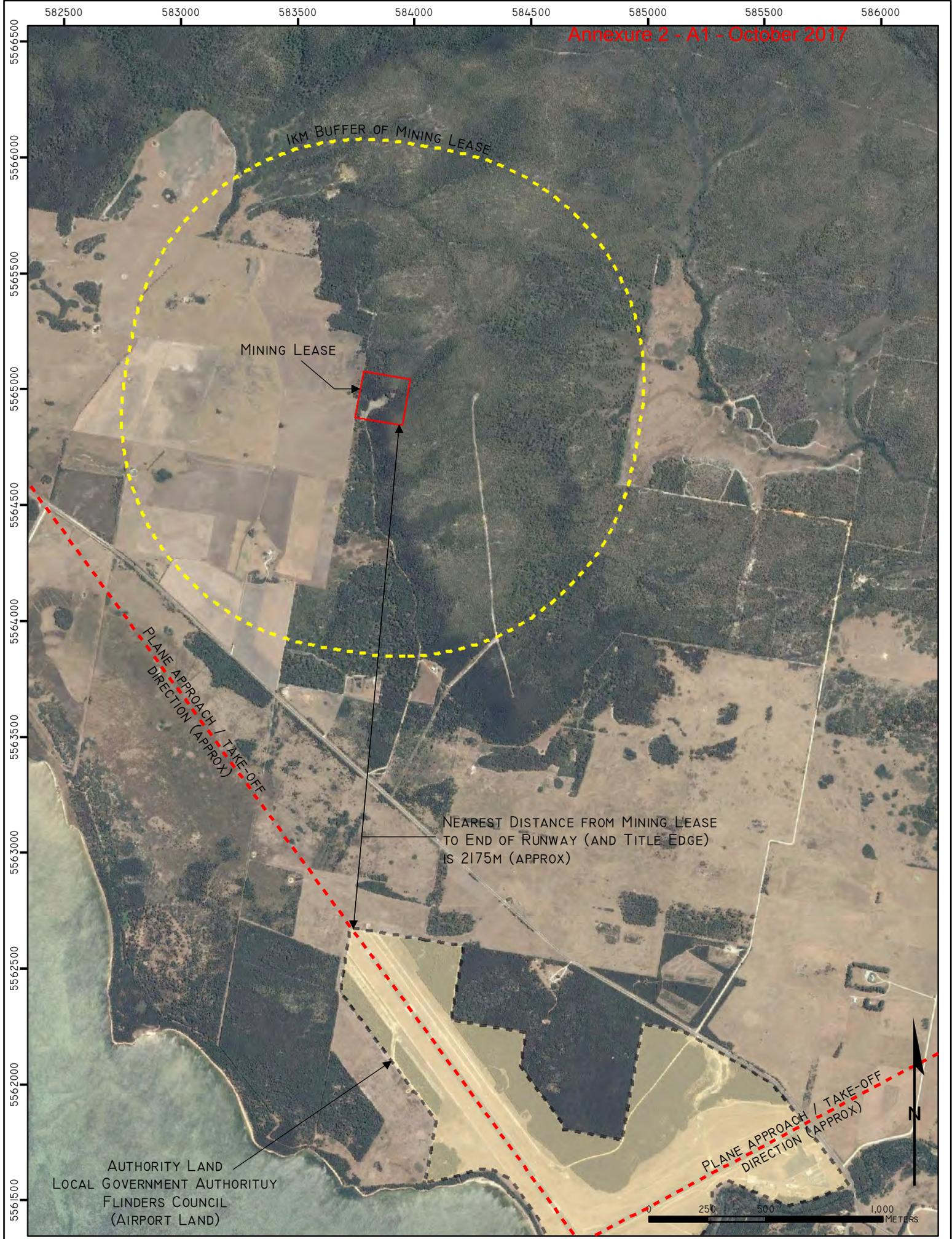


DATUM: GDA94
GRID: MGA ZONE 55

TASMAR: LEVENTHORPE

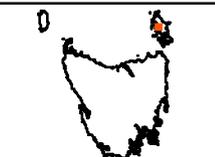
CLIENT: **111** ADAMS GROUP

DATE: 27TH APRIL 2016



THE GUMS QUARRY - WHITEMARK
 BLAST MANAGEMENT PLAN
 FIGURE 3: AIRPORT LAND AND FLIGHT PATHS (APPROX)

an Diemen CONSULTING
 PO Box 1 New Town TAS 7008
BASE DATA BY TASMAR. © STATE OF TASMANIA
 BASE IMAGE © 2016 GOOGLE EARTH



DATUM: GDA94
GRID: MGA ZONE 55
TASMAR: LEVENTHORPE
CLIENT: 112 ADAMS GROUP
DATE: 27TH APRIL 2016

MONITORING AND REVIEW

RISK ASSESSMENT AND AUDITING

The Blast Contractor is responsible for conducting a risk assessment and safety audit of the Quarry as part of the blast activity. This includes the drilling of the holes for explosives, handling explosives, operation of detonation devices and the safe detonation of the charges.

The following safety precautions will be applied -

- Ensure all persons have exited the quarry prior to any blast being conducted with the exception of blast contractor personnel involved in the detonation of charges.
- Ensure all roads surrounding the quarry are free of vehicles and persons.
- Wherever possible avoid blasting when an atmospheric temperature inversion is present and when the prevailing wind direction is from the west.

Markarna Grazing Company Pty Ltd receives a copy of the risk assessment and associated documentation that supports the placement of drill holes, levels of explosives used and the detonation devices.

NOISE/VIBRATION MONITORING PROGRAM

All measurements of air blast overpressure and peak particle velocity must be carried out in accordance with the methods set down in *Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration*, Australian and New Zealand Environment Council, September 1990.

The noise/vibration test results collected by the Blast Contractor will be securely held by Markarna Grazing Company Pty Ltd for 5 years from the date of the blast.

In the event that the blasting noise limits and/or vibrations as specified in the permit are exceeded, the Director will be notified within 48 hours of the blasting event.

INCIDENT REPORTING

The Blast Contractor is responsible for reporting to Police/Fire any incidents that require their involvement and/or attendance to the Quarry.

Markarna Grazing Company Pty Ltd is responsible for reporting any misfires or delayed firings to the EPA Director and surrounding relevant landowners and the Flinders Island Airport operator: in the event that the blast(s) cannot take place at the time specified, or as a result of blasting misfires, the Markarna Grazing Company Pty Ltd or their delegated agent will advise all those residents within 1 km of the activities on the land of the revised time at which blasting will take place.

REVIEW OF PLAN

This Plan will be reviewed in the event of an incident, change to the timing/location of the blast within the Quarry or other significant event.

Any variations to this Plan will be made available to the Director EPA for approval before the alteration is made to the Plan. In the event that the Director, by notice in writing to Markarna Grazing Company Pty Ltd, either approves a minor variation to the approved plan or approves a new plan in substitution for the plan originally approved, Markarna Grazing Company Pty Ltd and its agents will implement and act in accordance with the varied plan or the new plan, as the case may be.

Van Diemen Consulting Pty Ltd

PO Box 1
New Town, Tasmania

T: 0438 588 695 E: rwbarnes73@gmail.com

This document has been prepared in accordance with the scope of services agreed upon between Van Diemen Consulting (VDC) and the Client.

To the best of VDC's knowledge, the report presented herein represents the Client's intentions at the time of completing the document. However, the passage of time, manifestation of latent conditions or impacts of future events may result in changes to matters that are otherwise described in this document. In preparing this document VDC has relied upon data, surveys, analysis, designs, plans and other information provided by the client, and other individuals and organisations referenced herein. Except as otherwise stated in this document, VDC has not verified the accuracy or completeness of such data, surveys, analysis, designs, plans and other information.

No responsibility is accepted for use of any part of this document in any other context or for any other purpose by third parties.

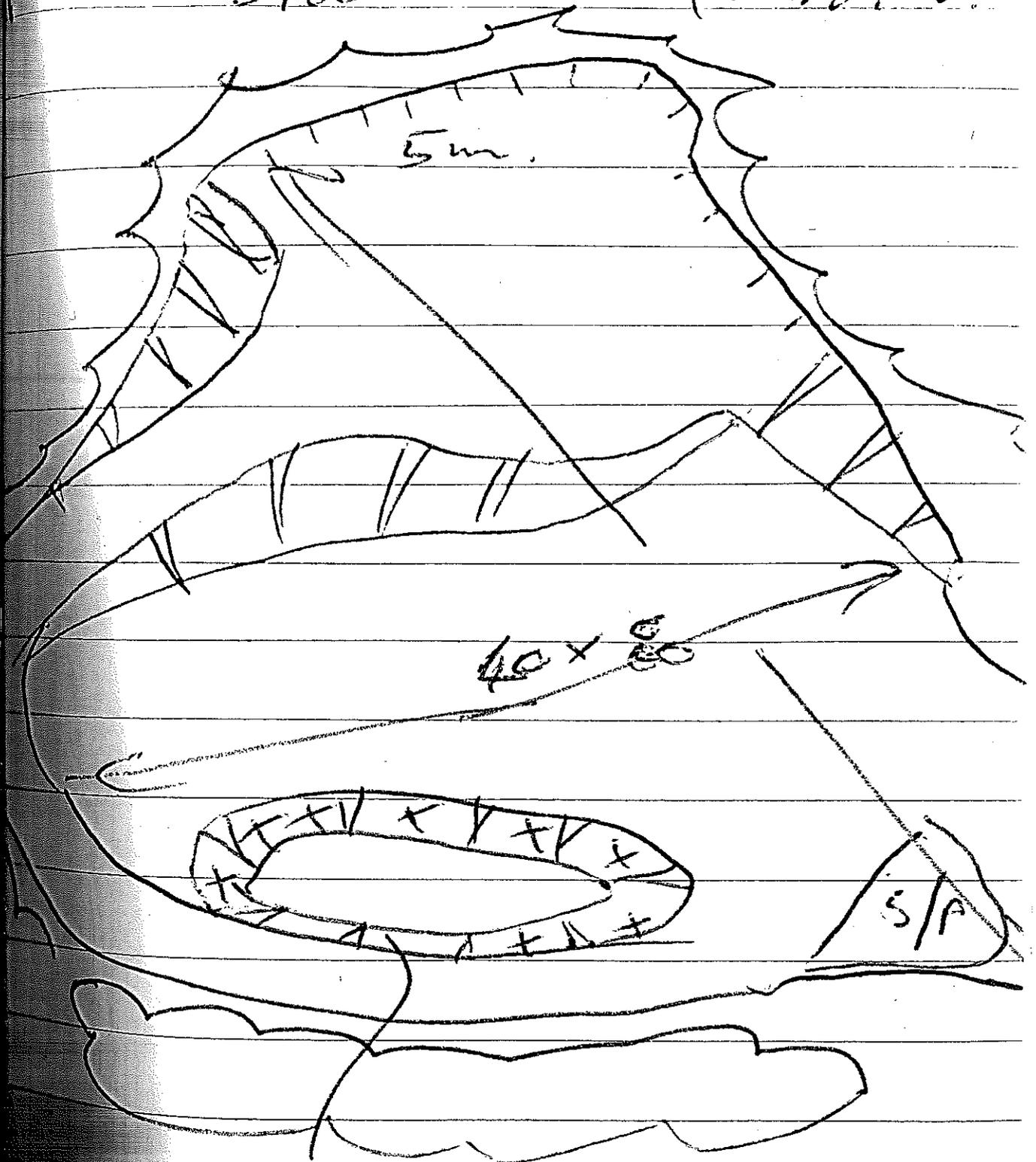
This document does not purport to provide legal advice. Readers should engage professional legal advisers for this purpose.

Document Status

Revision	Author	Review	Date
1	R Barnes, C McCoull	R Barnes, VDC Pty Ltd	01-05-16
1	R Barnes, C McCoull	Markarna Grazing Company Pty Ltd	02-05-16
1	R Barnes, C McCoull	R Barnes, VDC Pty Ltd	10-04-17
1	R Barnes, C McCoull	Markarna Grazing Company Pty Ltd	14-05-17

Attachment S6 Current MRT approved Mine Plan for ML 1229 P/M

26/5 1229 P/M
Blue Rock Quarries.



Jim.