



6 July 2021

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Attn: Ms. Lauren Evans
Team Leader
Resource Assessments

Via the Planning Portal

Dear Lauren,

SSD7009: Marulan South Limestone Continued Operations Project

Reference is made to the abovementioned Development Application (DA) currently under assessment by the Department of Planning, Industry and Environment (DPIE) and your correspondence of 21 June 2021 seeking the following additional information:

- Information regarding management of potential flyrock associated with site blasting activities;
- Clarification of development within the road sales stockpiling area; and
- Project figures provided in high resolution JPG format.

The above requests are addressed below.

Item 1: Blasting

DPIE has requested that Boral provide an assessment of potential flyrock impacts associated with blasting. Specifically, the following further detail has been requested:

- An overview of the risk of flyrock impacts are currently managed, and would continue to be managed over the life of the Project;
- The minimum setback distance between blasting activities and the nearest privately-owned receivers (C3 and R9); and
- The location(s) at which blast impacts on commercial receivers were modelled.

Each of the matters raised are addressed below.

1.1 Receiver and monitoring locations

Table 1 below contains a summary of the identified receivers and their distance from the existing operation and are plotted on the figure provided at **Attachment 1**. This figure also identifies the approximate location of blast monitoring at receiver location "B5" (refer to section 19.3.5, p. 363 Element Environment; 2018).



The receiver location B5, is significantly closer to the mine than the closest residential or commercial receiver and has not recorded any historical breaches of compliance with the blasting criteria. Moreover, no blast complaints have been received by the mine.

Distances have been measured from current area of operations from where blasting activities are undertaken. It is noted that all receivers are located outside the 800 metre blast exclusion zone and at a relative ground level far below that of the receivers themselves.

Table 1: Distance between blasting and receivers

Receiver	Direction	Distance (metres)
Commercial Receiver – C3	North-west	1,880
Residential Receiver - R9		2,190

1.2 Blast Management Plan: Flyrock avoidance

The potential for flyrock is currently managed by a Blast Management Plan (BMP) developed based on a project specific blasting risk assessment. Both documents are periodically reviewed by the Resources Regulator.

A detailed blast design and management process aims to ensure avoidance of the generation of any flyrock. The key measures and actions to avoid and, if necessary, manage flyrock include the following blast planning and preparation measures:

- Identification of blast area by production team as part of a weekly mining planning meeting;
- Inspection of the identified blast area by Orica (the site appointed blast and shot fire experts);
- Shot designed by blast experts (Orica) includes fly rock avoidance measures such as hole spacing, distance and explosive density requirements;
- Once blast holes have been drilled in accordance with the blast design, holes are surveyed and bore tracked to ensure compliance with design;
- Once bore holes have been loaded with explosives in accordance with the design quantity, they are stemmed to a minimum height of 25 x the hole diameter. Stemming, which involves the filling of holes with 10 – 20mm stone material over the top of the in-hole explosive materials, serves to contain the blast within the hole. This not only maximises the efficiency of the explosive but actively prevents “blowouts” (a form of flyrock); and
- In combination with the physical measures adopted to prevent flyrock generation, the detonation design uses a timing sequence across the blast holes (i.e. not all blast holes detonate simultaneously). This ensures that the shot/detonation achieves maximum efficiency with minimum impact (i.e. the avoidance of flyrock generation).

At present, as blasting occurs below the existing ground level of the surrounding land. For safety, there is a minimum exclusion zone 800 metres in front of and 400 metres to the sides of the face being blasted. This exclusion zone is wholly within the boundaries of Boral’s landholdings and requires that all personnel and equipment are cleared prior to firing.

In the unlikely event that any flyrock is generated, the potential for such flyrock to exceed the blast exclusion zone is considered highly unlikely as blasting currently occurs 120 metres below the existing level of adjacent land.

1.3 Assessment of potential impacts

A description of the existing blast methods is set out in section 3.1.4 of the exhibited Environmental Impact Statement (EIS), section 3.1.17 also considers the potential impact of blasting activities on the general public. Section 19 of the EIS addresses noise and blasting however, Boral acknowledges that this section does not directly address potential flyrock impacts.

As set out above, Marulan South Limestone has an adopted BMP based on a detailed risk assessment completed in accordance with the relevant Australian Standard. In the last 14 years, the mine has not recorded a single flyrock incident. This positive record of operations is due to a number of factors:

- The implementation of the BMP and risk assessment framework. Combined with its ongoing review and improvement; and
- The distance both vertically and horizontally from the adjacent receivers. Blasting occurs 120m below the level of the adjacent land and a minimum of 1.49 km from the nearest receiver.

As part of the proposed development, the mine operation area will expand in a westward and northern direction. These works are predominantly facilitative and limited to access roads and overburden emplacement. The faces, to be blasted (as part of the continued operations) will be contained within current extraction footprint and will allow for continued mined at depth.

The continued mine operation, including blasting, will continue to be guided by the established BMP, revised to take into account and avoid any new or additional risks associated with the modified mining footprint. Moreover, it is noted that the overburden emplacement areas will be established around the western perimeter of the expanded operations area serving to provide an additional buffer between the mine and adjacent receivers.

Item 2: Shared stockpile sales area – extent of development

DPIE has sought clarification on whether noise bunds will be constructed within the area of the Roads Sales Stockpiling Area.

Boral acknowledges that the two supporting assessments, the Economic Assessment and Greenhouse Gas Assessment, contain references to bunds that have subsequently been removed from the proposed project scope.

In this regard, Boral confirms that the project scope and description does not include these works.

Items 3: Amended figures

Copies of the requested figures have been provided submitted electronically under separate cover.

Conclusion

We trust that the above information addresses the matters raised.

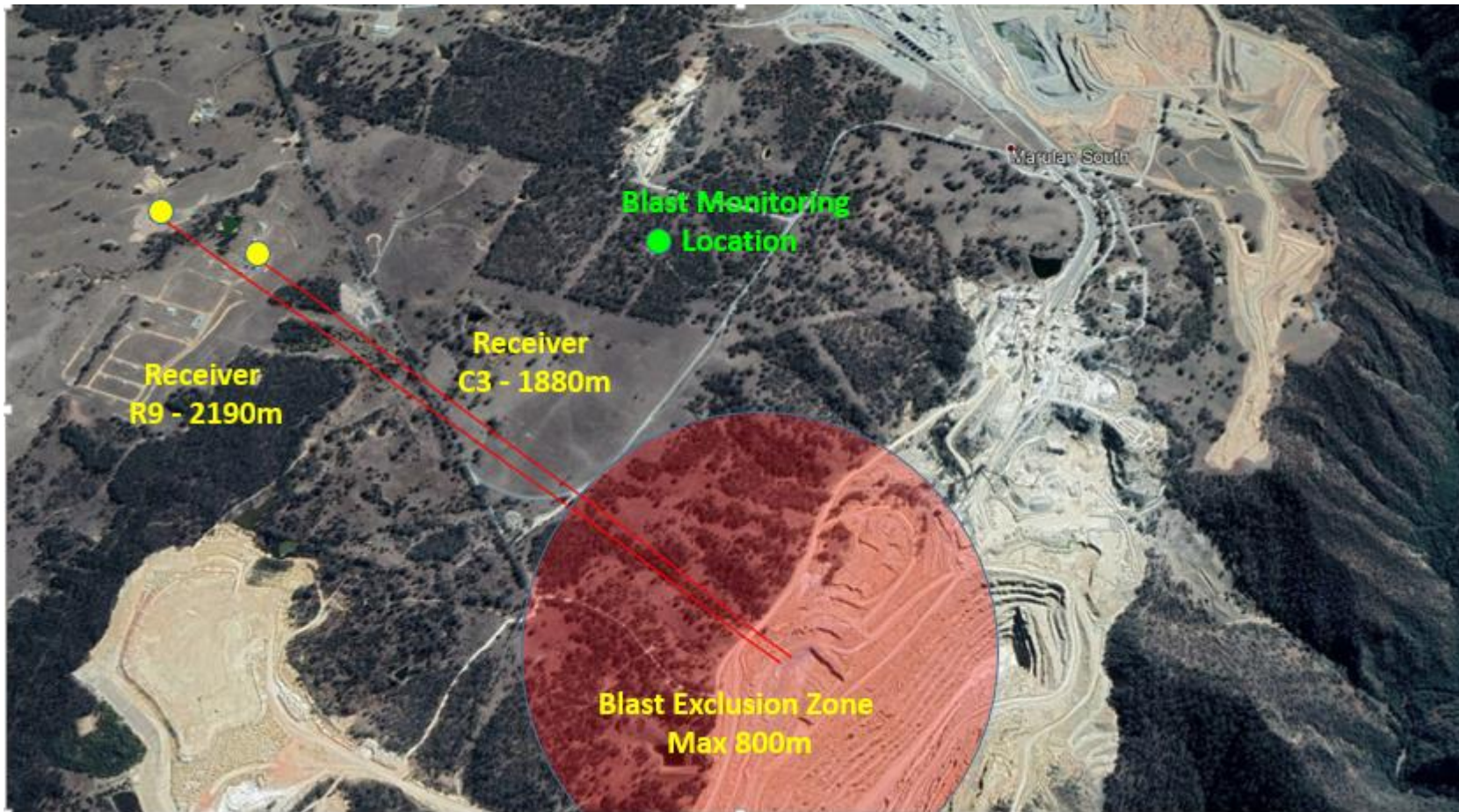
If you have any questions, or would like to discuss this matter in more detail, please contact me on mobile phone **0401 894 110** or email at **rachael.snape@boral.com.au**

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Rachael Snape', with a stylized, cursive script.

Rachael Snape
Planning & Development Manager (NSW & ACT)
Boral Land & Property Group

ATTACHMENT 1: DISTANCE FROM BLAST FACE TO RECEIVERS



Marulan South Limestone Mine – Nominated Receiver (C3 ,R9) distance to nearest blasting activity and Blast Monitoring Location