

Our Ref: 215412Letter03.1.docx

30 August 2017

EPA Victoria 200 Victoria Street Carlton VIC 3053

Attention: Development Assessments Unit

Dear Sirs,

Cardno Victoria Pty Ltd ABN 47 106 610 913

Level 4 501 Swanston Street Melbourne VIC 3000 Australia

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Works Approval Application - Notice to Supply Further Information 37-65 Walchs Road, North Shore, Geelong VIC

Cardno has been engaged by Boral Cement Pty Ltd (Boral) to prepare a Works Approvals Application for a proposed Scheduled Activity (clinker grinding) to occur at 37-65 Walchs Road, North Shore, Geelong.

We are writing in response to the EPA Notice issued on 24 August 2017 under s22(1) of the Environment Protection Act 1970 to supply further information in regard to Works Approval application reference 1002751.

The Notice requires clarification of a number of matters relating to the areas of traffic and noise. A copy of the Notice is included as **Appendix A**.

Responses in regard to traffic (Notice requirement 1 – first bullet point) are provided as **Appendix B** and **Appendix C**. Traffic information has been provided within the works approval application for information only as it is understood that City of Greater Geelong (COGG) would assess any traffic management matters. It is therefore considered that the following clarifications to EPA under the Notice are also provided for information only.

Responses in regard to noise (Notice requirement 1 – second, third and fourth bullet point) are provided as **Appendix C**.

We trust the attached information satisfies your queries.

Yours faithfully

Cardno

Approved:

Colin Stapleton

Associate - Environmental Consultant

Leigh McDonald

Principal

Cc: Boral Cement Limited



Appendices

Appendix AEPA Notice to Supply Further Information (24 August 2017)	2 Pages
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Response to Notice to Supply Further Information (Cardno Traffic Letter dated August 2017)	
Appendix CAddendum to Acoustic Report to Address EPA RFI (Marshall Day Letter dated (August 2017)	_



Appendix A 2 Pages

EPA Notice to Supply Further Information (24 August 2017)



ENVIRONMENT PROTECTION ACT 1970

SECTION 22(1)

NOTICE TO SUPPLY FURTHER INFORMATION

TO:	BORAL	CEMENT	LIMITED
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OF: LEVEL 3, 40 MOUNT STREET, NORTH SYDNEY NSW 2060

WHEREAS an application by you for a works approval number 1002751 in respect of premises situated at 37-65 WALCHS ROAD, NORTH SHORE, VIC 3214 was received by the Environment Protection Authority ("the Authority") on the 20th June 2017.

AND WHEREAS the Authority considers the information specified herein is necessary and relevant to the consideration of the application

NOW TAKE NOTICE that pursuant to section 22(1)(a) of the Environment Protection Act ("the Act") you are **HEREBY REQUIRED** to supply to the Authority by 4.00pm on the 30 August 2017 the information specified on the reverse side of this Notice.





- 1. Provide a report that assesses the following:
 - Clarification of the proposed changes in truck movements and any potential impacts on the operation of the surrounding road network;
 - The impacts on noise levels reported in the Environmental Noise Assessment (Marshall Day, July 2017) from inclusion of the new port conveyor;
 - The impacts on noise levels at sensitive receptors, including an assessment and supporting information (including modelling if appropriate) of the proposed clinker grinding facility, having regard to the cumulative impact from other industrial sites; and.
 - Demonstration of compliance with the State environment protection policy (Noise from Industry, Commerce and Trade) No. N1 and EPA publication 1411 Noise from Industry in Regional Victoria.

DATED: 24 August 2017

QUENTIN COOKE DELEGATE OF THE

ENVIRONMENT PROTECTION AUTHORITY





Appendix B 5 Pages

Response to Notice to Supply Further Information (Cardno Traffic Letter dated 30 August 2017)



Our Ref: CG150989:MB Contact: Matthew Ballard

30 August 2017

Boral Cement Limited 251 Salmon Street PORT MELBOURNE VIC 3207

Attention: Sally Harle

Dear Sally,

BORAL CEMENT CLINKER GRINDING FACILITY, LASCELLES WHARF GEELONG RESPONSE TO NOTICE TO SUPPLY FURTHER INFORMATION

In response to the Notice to Supply Further Information, pursuant to section 22(1)(a) of the Environment Protection Act 1970, for works approval number 1002751 (premises situated at 37-65 Walchs Road, North Shore VIC 3214), Cardno provides the following report to address the following:

- 1. Provide a report that assesses the following:
 - Clarification of the proposed changes in truck movements and any potential impacts on the operation of the surrounding road network;

Cardno's previous Traffic and Transport Assessment report (CG150989REP001F02) provided information on the levels of traffic expected to be generated by the proposed development, in terms of heavy vehicle and passenger vehicle traffic. Further information, specifically related to heavy vehicle traffic volumes and their potential impact on the operating conditions on the surrounding road network, is set out in the following sections.

Definitions of the terminology used within this response can be found below.

During Clinker Delivery Period: The period of time between clinker deliveries, when ships carrying clinker are not berthed at Port of Geelong.

Prior to Clinker Arrival Period: The period of time during which ships carrying clinker are berthed at Port of Geelong and unloading of transport of clinker is undertaken as a non-stop continual exercise until the ship is unloaded.

Cement Truck: Rigid truck up to 9.5 metres in length used to transport cement to and from the dispatch facility.

Limestone Truck: Articulated truck with trailer measuring up to 25 metres in length, used to transport limestone to the dispatch facility.

Existing Operations and Truck Movements

Currently clinker is imported through Lascelles Wharf at the Port of Geelong and transported 30 kilometres to the existing Boral cement plant at Waurn Ponds. Materials arriving at the port need to be transported immediately from the ship to the cement plant, due to a lack of temporary holding yard or storage facility close to the berth.

This is a significant logistics exercise and requires extensive pre-planning for clinker transport to occur 24 hours per day during the transfer period. As a result of this, heavy vehicle traffic volumes in the surrounding streets often experience a large spike when a

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ship is berthed, which may continue for three or more days after delivery and will coincide with peak hour traffic periods on the surrounding road network.

To quantify these truck volume spikes, traffic volume counts were undertaken by Nationwide Traffic Surveys on behalf of Cardno between Friday 4th December 2015 and Wednesday 16th December 2015 at the following locations:

- > Madden Avenue, just east of Seabeach Parade; and
- > Walchs Road, just east of Seabeach Parade.

The survey times were specifically chosen to coincide with the arrival of a ship carrying clinker for Boral on the 10th December 2015, and then transported by road to Boral's Waurn Ponds facility. These locations were selected as they are along the clinker truck routes and the roads that will be used by the proposed development.

A comparison of the survey results prior to the ship's arrival and during clinker unloading is summarised in Table 1-1.

Table 1-1 Recorded Average Two-Way Daily Traffic Volumes

Location	Prior to Cli (5 th Dec to	nker Arrival During Clinker Unloading 9th Dec) (10th Dec to 15th Dec)		Difference		
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Madden Avenue	130	97	222	185	+92	+88
Walchs Road	157	34	553	491	+396	+457
Total					+488	+545

The survey results indicate that there was an increase in heavy traffic volumes along the key clinker transfer route following the arrival of the ship on 10^{th} December 2015. It is further noted that during clinker transport, the AM peak was identified to be approximately 6:00-8:00am, which coincides with the surrounding road network AM peak hour, while the PM peak was identified to be approximately 2:00pm -4:00pm. Additional details of the survey results can be found in the Traffic and Transport Assessment report.

Future Operations and Truck Movements

Based on the plans prepared by Boral, it is proposed to redevelop the subject site for the purposes of a Clinker Grinding Facility with a site area of approximately 60,000 square metres. The development will include a conveyor system for the transfer of material from berthed ships and across The Esplanade to on-site stockpile areas.

The conveyor and storage systems at the plant will remove the need for high activity transfer of materials by truck from Geelong Port and Waurn Ponds when ships arrive at Lascelles Wharf. As such, significant improvements in logistical planning will be observed, and spikes in truck volumes associated with the unloading of product from Geelong Port will be removed.

Cardno has been advised of the following with regards to the facility's proposed operation, specifically regarding heavy vehicle activities:

- > Cement dispatch from the facility will occur 24 hours per day, 365 days per year;
- > 90% of cement dispatch will occur from Monday to Friday, of which 80% will occur between 5:00am and 8:00pm (remaining 10% will occur outside these times);
- > 10% of cement dispatch will occur between Saturday and Sunday;
- > Limestone deliveries will take place over 12 hours per day from Monday to Friday only; and
- > The largest vehicles accessing the site will be 40-tonne B-double trucks.

The following assumptions have been made with regards to the traffic generation and distribution at the site, which have been based on information provided by Boral:

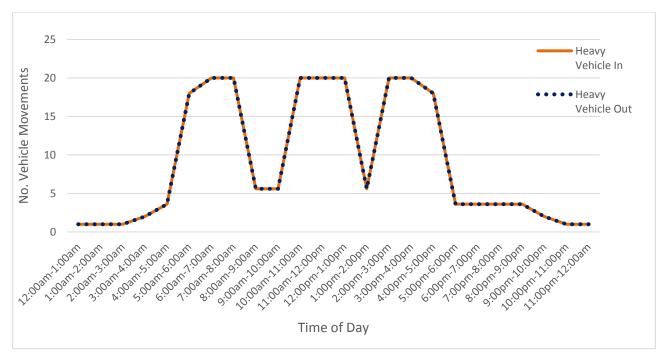
> A peak cement collection truck flow of 18 trucks per hour is anticipated to occur during three peak periods of three hours each, being 5:00am – 8:00am, 10:00am – 1:00pm and 2:00pm to 5:00pm. This represents 80% of total cement collections;



- > The remaining 20% of cement collections are distributed from:
 - 4:00am 5:00am and 5:00pm 8:00pm at an average flow of 3.6 trucks per hour;
 - 3:00am 4:00am and 9:00pm 10:00pm at a flow of two trucks per hour; and
 - 10:00pm to 3:00am at a flow of one truck per hour.
- > Limestone deliveries are anticipated to occur at a flow of 2 trucks per hour from 6:00am 4:00pm; and
- > All truck movements are assumed to be distributed evenly between Walchs Road and Madden Avenue.

Under these assumptions, profiles of a typical weekday showing heavy vehicle movements to/from the site have been prepared and shown in Figure 1-2.

Figure 1-2 Proposed Weekday Traffic Generation Movements



The profile above indicates that three key periods of heavy vehicle activity will be observed, comprising approximately 40 heavy vehicle movements per hour for three hours each, before heavy vehicle activity reduces after 6:00pm. This level of traffic equates to approximately one truck movement every one to two minutes, and represents the highest volumes that the new facility will generate at any given time.

A summary of the anticipated weekday daily and peak hour traffic movements is provided in Table 1-2 and Table 1-3, whilst the proposed distribution of daily traffic movements is shown in Figure 1-3. Additional details of traffic generation and distribution can be found in the Traffic and Transport Assessment report.

Table 1-2 Anticipated Typical Daily Traffic Movements – Summary

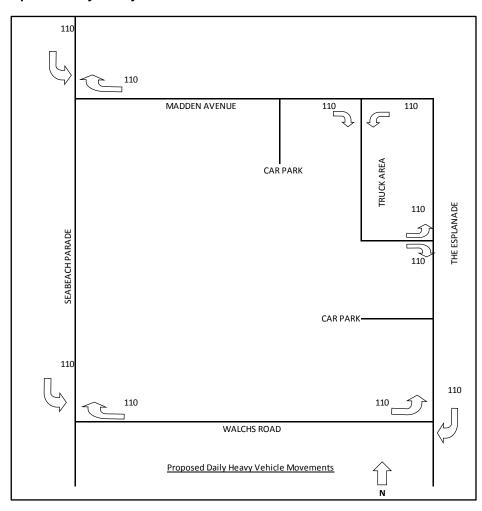
Product/Service	Type of Vehicle	No. Inbound Movements per Day	No. Outbound Movements per Day	No. Total Movements per Day
Cement	Single Bulk Tank Truck	200	200	400
Limestone	imestone Truck & Dog Closed Tipper Trailer		20	40
Total Heavy Vehic	440			

Table 1-3 Anticipated Typical Peak Hour Traffic Movements – Summary

Vehicle	AM Peak (7:00am-8:00am)		PM Peak (4:00			
	In	Out	Total	In	Out	Total
Heavy Vehicles	20	20	40	18	18	36



Figure 1-3 Proposed Daily Heavy Vehicle Traffic Distribution



Changes in Truck Movements & Potential Road Network Impacts

The existing heavy vehicle traffic volumes on the surrounding road network were compared with the proposed heavy vehicles operations to determine the expected truck activity changes, as outlined in Table 1-4. As previously mentioned, the heavy vehicle traffic volumes prior to clinker arrival are considered to represent the base case volumes (i.e. it is assumed that no heavy vehicle activity occurs at the site during this period).

Table 1-4 Comparison of Daily Traffic Volumes (Prior to Clinker Delivery vs. Proposed Conditions)

Location	Existing Operations F	Proposed Operations		Difference		
	Weekday	Weekend	Weekday	Weekend*	Weekday	Weekend
Madden Avenue	130	97	350	119	+220	+22
Walchs Road	157	34	377	56	+220	+22
Total					+440	+44

^{*}The proposed weekend volumes represent approx. 10% of the proposed weekday volumes as per information provided by Boral.

Table 1-5 Comparison of Daily Traffic Volumes (After Clinker Delivery vs. Proposed Conditions)

Location	Existing Operations Prior to Clinker Arrival		Proposed Operations		Difference	
	Weekday	Weekend	Weekday	Weekend*	Weekday	Weekend
Madden Avenue	222	185	350	119	+128	-66
Walchs Road	553	491	377	56	-176	-435
Total					-48	-501

^{*}The proposed weekend volumes represent approx. 10% of the proposed weekday volumes as per information provided by Boral.

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As shown in Table 1-4, the proposed weekday heavy vehicle traffic volumes are predicted to increase over existing operations prior to clinker delivery by 440 vehicles per weekday and 44 vehicles per weekend day. Assuming that 10% of traffic occurs during each period, this level of traffic corresponds to an average increase of less than one heavy vehicle per minute across the weekday peak, and less than one every 15 minutes across a given weekend peak, and will not impact on the operation of the surrounding road network on a daily basis.

As shown in Table 1-5, the proposed operating schedule will substantially reduce daily heavy vehicle movements below the levels observed during clinker delivery, by up to 500 vehicles per day on a given weekend day. Whilst weekday heavy vehicle movements along Madden Avenue are proposed to increase by approximately 130 movements per day, heavy vehicle activity along Walchs Road is predicted to reduce substantially by approximately 180 vehicle movements per day, for a net reduction of approximately 50 vehicles per day. This reduction in heavy vehicle volumes is considered an improvement from a traffic engineering perspective over current operating conditions.

It is noted that the weekday truck volumes are expected to occur outside of typical surrounding road network peak times, with most movements occurring before the AM peak and between the AM and PM peaks, and so will have no noticeable impact on the operation of the surrounding road network during these times. This is considered to provide significant improvements in amenity to the surrounding area.

It is again noted that the proposed operating schedule will minimise and distribute previous high-activity volumes across a number of days and hours of the day. Given that the current site generated regular high-activity traffic volumes, the abovementioned traffic generation is considered likely to improve current operating conditions.

Considering the discussion above, the proposed changes to truck volumes accessing the clinker grinding facility are considered appropriate and an improvement on existing operating conditions.

Summary and Conclusions

Based on the foregoing analysis it is concluded that;

- > The overall operation of the Clinker Grinding Facility is expected to be consistent with the operating conditions at other Boral plants;
- > The proposed development is expected to generate in the order of 440 truck movements per weekday above pre-clinker delivery traffic volumes, with 44 movements occurring on weekend days, to be evenly distributed along Walchs Road and Madden Avenue;
- > Compared with clinker delivery traffic volumes under existing operations, the proposed operating conditions will reduce weekday heavy vehicle volumes by 48 vehicles per day and weekend volumes by over 500 vehicles per day;
- > Overall, the heavy vehicle traffic generated by the proposed development is considered to be appropriate, and is considered to improve existing operations, on both weekdays and weekends, and improve the amenity of the surrounding area.

Should you have any queries regarding the above, please contact Cardno's Traffic, Transport and Parking department.

Yours sincerely,

Matthew Ballard

Associate - Traffic, Transport & Parking

Mallard

for Cardno



Appendix C

Addendum to Acoustic Report to Address EPA RFI (Marshall Day Letter dated 30 August 2017)



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30 August 2017

Boral Cement 251 Salmon Street Port Melbourne VIC 3207

Attention: Ms Sally Harle

Dear Sally

ADDENDUM TO ACOUSTIC REPORT TO ADDRESS EPA RFI

This letter provides information as an addendum to the Marshall Day Acoustics (MDA) report Rp 001 R02 2016100ML *Boral Clinker Grinding Plant*, dated 1 July 2017, specifically in response to a Request for Further Information (RFI) submitted by the EPA on 24 August 2017.

The EPA RFI contains requirements as outlined in Table 1, along with MDA's response to each item.

We trust this meets your requirements at this time.

Yours faithfully

MARSHALL DAY ACOUSTICS PTY LTD

Gillian Lee

Senior Consultant





Table 1: EPA Information Requirements and MDA comments

RFI Item

MDA Response

Provide a report that assesses the following:

Clarification of the proposed changes in truck movements and any potential impacts on the operation of the surrounding road network

Truck movements on the proposed Boral site are assessable under NIRV, and have been included in the assessment contained in the MDA report. Truck movements off-site on the surrounding road network are not covered under NIRV. As such, the following information is provided at the EPA's request.

It is understood that the traffic information provided by Cardno is for information purposes only, and that the City of Greater Geelong would assess any traffic management matters.

Cardno has provided clarification of the proposed changes in truck movements and traffic impacts on the operation of the surrounding road network in their letter dated 29 August 2017 (Ref: CG150989:HN).

The letter notes that heavy vehicle movements are currently, and, proposed in future to be confined to Madden Avenue, Walchs Road and Seabeach Parade, which do not directly pass nearby residential dwellings on Sea Breeze Parade.

Currently, Cardno note that Boral truck movements in the area are run as 'campaigns'; periods of intense truck movements during Clinker delivery that occur consistently over a period of several days.

The proposed scheme would involve materials that are unloaded by ship being directly transferred to the subject site via conveyors, eliminating the requirement for the 'campaign' truck pattern that occurs currently. However, it is noted that there would still truck movements to and from the new site.

Cardno have provided a comparison of truck volumes including Boral trucks, for current and proposed conditions. They have examined two key scenarios; Prior to Clinker delivery, and During Clinker Delivery (i.e. when a 'campaign' of intense truck activity would typically occur).

The relevant excerpts from Table 1-4 and 1-5 are provided below.

Table 1-4 Comparison of Daily Traffic Volumes (Prior to Clinker Delivery vs. Proposed Conditions)

Location	Existing Operations Prior to Clinker Arrival		Proposed	Operations	Difference	
	Weekday	Weekend	Weekday	Weekend*	Weekday	Weekend
Madden Avenue	130	97	350	119	+220	+22
Walchs Road	157	34	377	56	+220	+22
Total					+440	+44

^{*}The proposed weekend volumes represent approx. 10% of the proposed weekday volumes as per information provided by Boral.

Table 1-5 Comparison of Daily Traffic Volumes (After Clinker Delivery vs. Proposed Conditions)

Location	Existing Operations Prior to Clinker Arrival		Proposed	Operations	Difference	
	Weekday	Weekend	Weekday	Weekend*	Weekday	Weekend
Madden Avenue	222	185	350	119	+128	-66
Walchs Road	553	491	377	56	-176	-435
Total					-48	-501

^{*}The proposed weekend volumes represent approx. 10% of the proposed weekday volumes as per information provided by Boral.

Generally, Cardno predict an increase in truck traffic during the 'Prior to Clinker delivery' scenario, and a decrease in truck traffic during the 'After Clinker Delivery' scenario.

Broadly, for the 'Prior to Clinker Delivery' scenario, these figures relate to an increase of around 4dB for both roads on weekdays and an increase of 1-2 dB on weekends.

For the 'After Clinker Delivery' scenario, the figures relate to an increase of 2 dB on Madden Avenue on weekdays, and a decrease of 2 dB on weekends. On Walchs Road, weekdays would see a decrease of 2 dB and weekends would see a decrease of 9 dB compared to current operations.



RFI Item

MDA Response

The impacts on noise levels reported in the Environmental Noise Assessment (Marshall Day, July 2017) from inclusion of the new port conveyor It is our understanding that predicted noise levels from the new port conveyor would be the responsibility of the Port of Geelong.

However, our calculations indicate that noise from the new port conveyor would contribute approximately 30 dB $L_{\rm eff}$ at the nearest dwellings to the west, and 35 dB $L_{\rm eff}$ at the nearest dwellings to the south. The calculations assume similar mitigation for items such as conveyor motors and dust collection units as discussed for similar items of plant in the report. The calculations assume that the enclosed conveyors would be able to be designed to achieve a sound power rating of 83dB $L_{\rm w}$ per metre. It is considered that a fully enclosed conveyor would be able to meet this specification, as may semi-enclosed designs.

When considered in cumulation with the predicated noise levels from the Boral site, the overall noise levels remain as reported, i.e. 42 dB $_{\rm Leff}$ at the nearest dwellings to the west, and 43 dB $_{\rm Leff}$ at the nearest dwellings to the south, which achieve the cumulative targets nominated in the report.

It is therefore considered that the inclusion of the new port conveyor would not affect the outcome detailed in the report.

The impacts on noise levels at sensitive receptors, including an assessment and supporting information (including modelling if appropriate) of the proposed clinker grinding facility, having regard to the cumulative impact from other industrial sites

The MDA assessment quantifies noise levels from the proposed Boral site at nearby sensitive receptors, which has been based on noise modelling. Details regarding the inputs and results of the modelling are included in the report.

The MDA assessment recognises that the area in the vicinity of the subject site includes a number of other industry operators. Attended measurements of a number of existing industrial operations in the area have been undertaken and are reported in Table 2 of the MDA report. These noise levels have been used to inform the cumulative impacts study, but do not constitute a detailed quantification of each industrial operator in the area.

In order to accurately quantify noise-generating facilities at surrounding industrial sites, a similarly-detailed assessment of each would need to be undertaken, which is outside the scope of this assessment.

However, in recognition that other industrial sites will also contribute to the noise level at noise-sensitive receptors, MDA has outlined cumulative target noise criteria which are 5 dB below the NIRV Recommended Maximum Noise Levels (derived in accordance with SEPP N-1 methodology). The MDA assessment demonstrates that the cumulative target criteria can be achieved. This approach was accepted by the EPA noise expert Bert Zerbst during a meeting on Monday 28 August 2017.

Demonstration of compliance with the State Environment Protection Policy (Noise from Industry, Commerce and Trade) No. N1 and EPA publication 1411 Noise from Industry in Regional Victoria See notes above.