



Works Approval

Environmental Protection Act 1986, Part V

Works Approval Holder: Boral Resources (WA) Ltd

Works Approval Number: W5833/2015/1

Registered office: Level 3, 40 Mount Street
NORTH SYDNEY NSW 2060

ACN: 008 686 904

Premises address: Boral Quarries – Tabba Tabba
Mining lease M45/23, M45/25, M45/98 and G45/257
Great Northern Highway
PORT HEDLAND WA 6721
As depicted in Schedule 1.

Issue date: Thursday, 30 July 2015

Commencement date: Monday, 3 August 2015

Expiry date: Thursday, 2 August 2018

The following category/s from the *Environmental Protection Regulations 1987* cause this Premises to be a prescribed premises for the purposes of the *Environmental Protection Act 1986*:

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
35	Asphalt manufacturing: premises on which hot or cold mix asphalt is produced using crushed or ground rock aggregates mixed with bituminous or asphaltic materials for use at places or premises other than those premises.	Not applicable	70,000 tonnes per annual period

Conditions

This Works Approval is subject to the conditions set out in the attached pages.

Date signed: 1 September 2016

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Alana Kidd
Manager Licensing – Resource Industries
Officer delegated under section 20
of the *Environmental Protection Act 1986*



Works Approval Conditions

1 General

1.1 Interpretation

1.1.1 In the Works Approval, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 In the Works Approval, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986*;

'annual period' means the inclusive period from 1 July until 30 June in the following year;

'AS 4323.1' means the Australian Standard AS4323.1 *Stationary Source Emissions Method 1: Selection of sampling positions*;

'averaging period' means the time over which a limit or target is measured or a monitoring result is obtained;

'CEMS Code' means the current version of the Continuous Emission Monitoring System (CEMS) Code for Stationary Source Air Emissions, Department of Environment & Conservation, Government of Western Australia;

'Ciber 19P' means the type and make of asphalt manufacturing plant;

'CEO' means Chief Executive Officer of the Department of Environment Regulation;

'CEO' for the purpose of correspondence means:

Chief Executive Officer
Department Administering the Environmental Protection Act 1986
Locked Bag 33
CLOISTERS SQUARE WA 6850
Email: info@der.wa.gov.au

'Commissioning' means the process of operation and testing that verifies the works and all relevant systems, plant, machinery and equipment have been installed and are performing in accordance with the design specification set out in the works approval application;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'PM' means total particulate matter including both solid fragments of material and miniscule droplets of liquid;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Works Approval;

'Schedule 1' means Schedule 1 of this Works Approval unless otherwise stated;

'stack test' means a discrete set of samples taken over a representative period at normal operating conditions;



'USEPA Method 2' means the USEPA Method 2 – Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube);

'USEPA Method 6C' means United States (of America) Environmental Protection Agency Method for Determination of Sulphur Dioxide Emissions from Stationary Sources (Instrumental Analyser Procedure);

'USEPA Method 7E' means United States (of America) Environmental Protection Agency Method for Determination of Nitrogen Oxides Emissions From Stationary Sources (Instrumental analyser Procedure);

'USEPA Method 10' means United States (of America) Environmental Protection Agency Method for Determination of Carbon Monoxide Emissions From Stationary Sources (Instrumental Analyzer Procedure);

'USEPA Method 17' means United States (of America) Environmental Protection Agency Method for Determination of Particulate Matter Emissions from Stationary Sources;

'USEPA Method 18' means United States (of America) Environmental Protection Agency Method for Measurement Of Gaseous Organic Compound Emissions By Gas Chromatography;

'STP dry' means standard temperature and pressure (0°Celsius and 101.325 kilopascals respectively), dry;

'Works Approval' means this Works Approval numbered W5833/2015/1 and issued under the Act; and

'Works Approval Holder' means the person or organisation named as the Works Approval Holder on page 1 of the Works Approval.

1.1.3 Any reference to an Australian or other standard in the Works Approval means the relevant parts of the standard in force from time to time during the term of this Works Approval.

1.1.4 Any reference to a guideline or code of practice in the Works Approval means the current version of the guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guidelines or code of practice made during the term of this Works Approval.

1.2 General conditions

1.2.1 The Works Approval Holder shall construct the works in accordance with the documentation detailed in Table 1.2.1:

Table 1.2.1: Construction Requirements ¹		
Document	Parts	Date of Document
Works Approval Application Form	All	21 April 2015
Tabba Tabba Quarry – Mobile Asphalt Plant, Works Approval Application Supporting Documentation, Boral Resources (WA)	All, including Drawings and Appendices, but excluding Section 2.1 and Figure 2.	March 2015
Email correspondence from Peter Male (Boral Resources (WA) Ltd) to DER titled RE: Works Approval Application – Tabba Tabba Quarry	All, but with exclusion of Attachment "Tabba Figure 2".	16 April 2015 10:05



Note 1: Where the details and commitments of the documents listed in condition 1.2.1 are inconsistent with any other condition of this works approval, the conditions of this works approval shall prevail.

- 1.2.2 The Works Approval Holder shall commission the mobile asphalt plant for a period not exceeding 4 months.

2 Emissions

- 2.1.1 The Works Approval Holder shall ensure that where waste is emitted to air from the emission points in Table 2.1.1 it is done so in accordance with the conditions of this Works Approval.

Table 2.1.1: Emission points to air

Emission point reference	Emission Point	Emission point height (m)	Source, including any abatement
C1	Ciber 19P Asphalt plant Stack	8.0	Drum dryer and pugmill via baghouse

3 Monitoring

- 3.1.1 The Works Approval Holder shall ensure that all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.
- 3.1.2 The Works Approval Holder shall record production or throughput data and any other process parameters relevant to any non-continuous monitoring undertaken.
- 3.1.3 The Works Approval Holder shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Works Approval is calibrated in accordance with the manufacturer's specifications and any relevant Australian standards.
- 3.1.4 The Works Approval Holder shall undertake the monitoring specified in Table 3.1.1 according to the specifications in that table.

Table 3.1.1: Monitoring of point source emissions to air

Emission point reference	Parameter	Units ^{1,3}	Averaging period	Frequency ²	Method
C1	Volumetric flow rate	m ³ /s	n/a	Once during commissioning	USEPA Method 2
	Particulates	mg/m ³ g/s	Stack Test (Minimum 60 minute average)		USEPA Method 5 or USEPA Method 17
	Sulfur dioxide	mg/m ³ g/s	Stack Test (Minimum 30 minute average)		USEPA Method 6C
	Nitrogen oxides	mg/m ³ g/s			USEPA Method 7E
	Carbon monoxide	mg/m ³ g/s			USEPA Method 10
	Total Volatile Organic Compounds	mg/m ³ g/s			USEPA Method 18

Note 1: All units are referenced to STP dry.

Note 2: Monitoring shall be undertaken to reflect normal operating conditions and any limits or conditions on inputs or production.

Note 3: Concentration units for A1 are referenced to 17% O₂.



- 3.1.5 The Works Approval Holder shall ensure that sampling required under Condition 3.1.4 of the Works Approval is undertaken at sampling locations in accordance with the AS 4323.1 or relevant part of the CEMS Code.
- 3.1.6 The Works Approval Holder shall ensure that all non-continuous sampling and analysis undertaken pursuant to Condition 3.1.1 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

4 Information

4.1 Reporting

- 4.1.1 The Works Approval Holder shall submit a compliance document to the CEO, following the construction of the works and prior to commissioning of the same.
- 4.1.2 The compliance document shall:
- (a) certify that the works were constructed in accordance with the conditions of the Works Approval; and
 - (b) be signed by a person authorised to represent the Works Approval Holder and contain the printed name and position of that person within the company.
- 4.1.3 The Works Approval Holder shall submit a commissioning report for the mobile asphalt plant to the CEO within one month prior to the completion of commissioning.
- 4.1.4 The Works Approval Holder shall ensure the commissioning report includes:
- (a) a summary of the monitoring results recorded under Condition 3.1.4;
 - (b) a list of any original monitoring reports submitted to the Works Approval Holder from third parties for the commissioning period;
 - (c) a summary of the environmental performance of the asphalt plant as installed, against the design specification set out in the Works Approval application and the European Asphalt Pavement Association Environmental Guidelines on Best Available Techniques (BAT) for the Production of Asphalt Paving Mixes;
 - (d) a review of performance against the Works Approval conditions; and
 - (e) where they have not been met, measures proposed to meet the design specification and/or Works Approval conditions, together with timescales for implementing the proposed measures.

4.2 Notification

- 4.2.1 The Works Approval Holder shall ensure that the parameters listed in Table 4.2.1 are notified to the CEO and are in accordance with the notification requirements of the table.

Table 4.2.1: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement	Format or form
1.2.4	Commencement of commissioning	7 days prior to start	None specified
	Completion of commissioning	7 days after completion	



Schedule 1: Maps

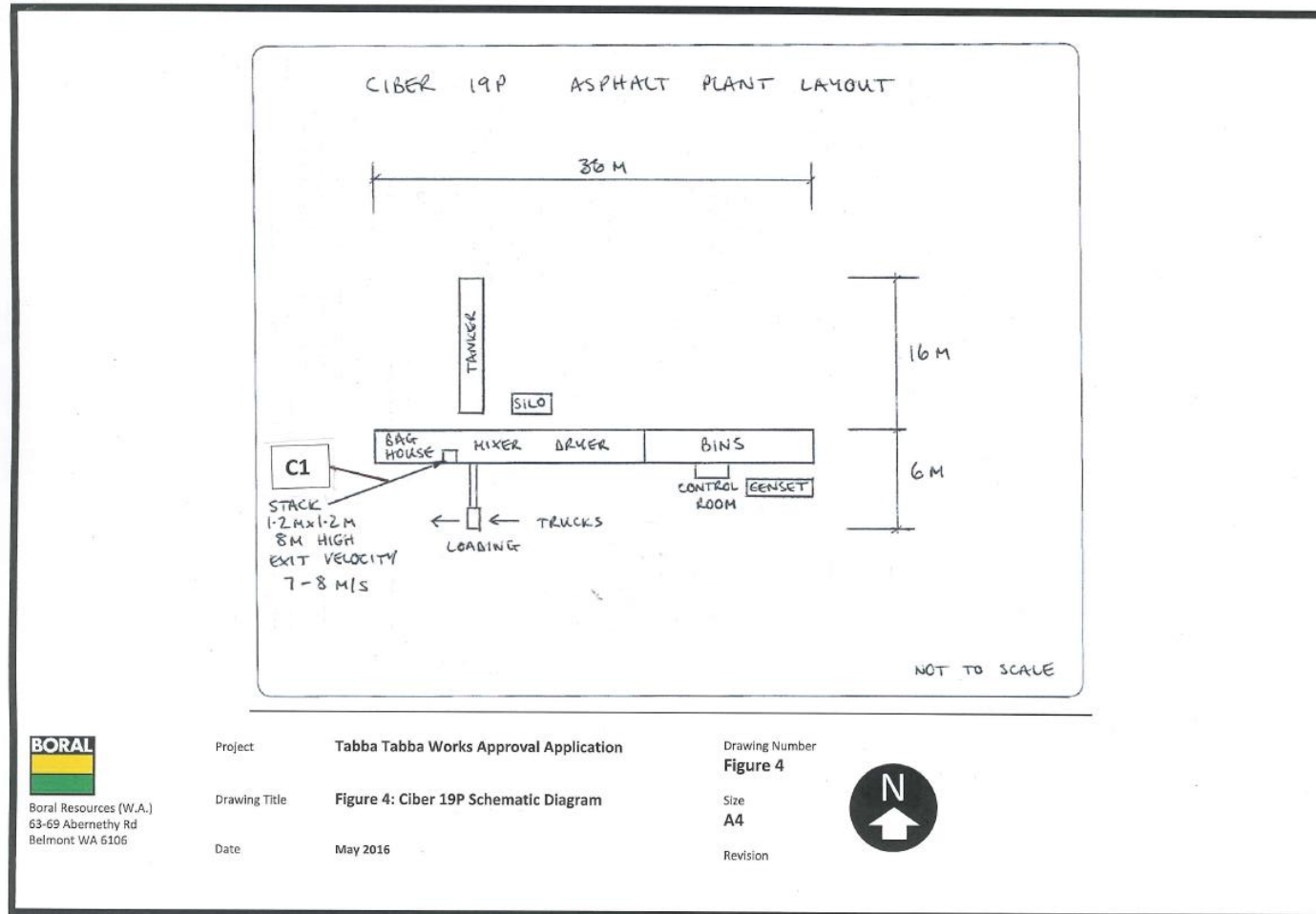
Premises map

The Premises is shown in the map below. The yellow line depicts the Premises boundary.





Diagram of the asphalt plant.





Decision Document

Environmental Protection Act 1986, Part V

Proponent: Boral Resources (WA) Ltd
Works Approval: W5833/2015/1

Registered office: Level 3, 40 Mount Street
NORTH SYDNEY NSW 2060

ACN: 008 686 904

Premises address: Boral Quarries – Tabba Tabba
Mining Leases M45/23, M45/25, M45/98 and G45/257
Great Northern Highway
PORT HEDLAND WA 6721

Issue date: Thursday, 30 July 2015

Commencement date: Monday, 3 August 2015

Expiry date: Thursday, 2 August 2018

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER) has decided to issue a works approval. DER considers that in reaching this decision, it has taken into account all relevant considerations.

Decision Document prepared by: Lindy Twycross
Licensing Officer

Decision Document authorised by: Alana Kidd
Delegated Officer



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1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval <input type="checkbox"/> New Licence <input type="checkbox"/> Licence amendment <input type="checkbox"/> Works Approval amendment <input checked="" type="checkbox"/>	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	35 – Asphalt manufacturing	70,000 tonnes per annual period
Application verified	Date: 22/06/2016	
Application fee paid	Date: NA	
Works Approval has been complied with	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	
Compliance Certificate received	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Commercial-in-confidence claim outcome		
Is the proposal a Major Resource Project?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No:



		EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i>)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is the Premises within an Environmental Protection Policy (EPP) Area Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, include details here, eg Site is subject to SO ₂ requirements of Kwinana EPP.		

3 Executive summary of proposal and assessment

The Boral Quarry - Tabba Tabba is located 50 kilometres (km) east of Port Hedland on the Strelley Pastoral Station. Boral have operated crushing and screening equipment at the premises since issue of Licence L7975/2004/1 on 18 October 2004.

The nearest sensitive land use is the Marta Marta community located 1.6 km to the northwest. The site is located on flat ground and set back 500 metres (m) from the Great Northern Highway.

Drainage lines are 66 m north of the premises, draining away to the north. Tabba Tabba Creek lies approximately 4 km southwest of the site. Tabba Tabba Creek is normally dry and only flows after cyclonic or storm rains. Groundwater has been intersected at a depth of 8 m to 24 m below ground level. No dewatering is required for quarrying operations. Stormwater is captured on site and used for dust suppression.

In April 2015, Boral submitted an application to DER to manufacture asphalt at the premises. Works Approval W5833/2015/1 was issued on 15 July 2015 for construction and installation of a Ciber 19P mobile asphalt plant (the Ciber).

The Ciber has the capacity to produce up to 150 tonnes of asphalt per hour (tph). The plant consists of:

- feed bins;
- drum dryer;
- pugmill;
- baghouse;
- conveyors;
- control room;
- one bitumen tank - 40,000 Litre (L);
- oil heater;
- generator; and
- self bunded diesel tank – 20,000 L.

An application to amend W5833/2015/1 was received on 22 June 2016 to also include provision for installation and operation of a TEREX E100P mobile asphalt plant (the TEREX). The asphalt plants will be moved off and on the premises as required for operational purposes. Only one asphalt plant will operated at any time. Total asphalt production is expected to remain consistent with the original application assessment for 70,000 tonnes asphalt produced per year.



The TEREX has previously been commissioned under W5737/2014/1 at Boral's Mt Regal Quarry premises and does not require re-commissioning prior to operation at the Tabba Tabba Quarry. Therefore, operation of the TEREX plant at the Boral Quarry Tabba Tabba premises was assessed as an amendment to L7975/2004/4 to include category 35: asphalt manufacturing and for movement of the TEREX off and on the site.

The application to amend W5833/2015/1 also included a request to change the location of the asphalt plant. The requirement to locate the asphalt plant in a designated area has been removed, because the location of the asphalt plant does not change the risk of emissions to the closest sensitive land user. No other changes to the Works Approval are required to be made.

Where conditions have been amended, added or removed from the existing Works Approval these are outlined in the Decision Table in Section 4.

Once construction and performance of the Ciber is confirmed by compliance certification and commissioning results, the Ciber will be included in L7975/2004/4.



4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987*, and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
General conditions	W1.2.1 W1.2.2	W1.2.1 has been amended to exclude references to location of the asphalt plant in the application document.	Application supporting documentation
Premises operation	Works approval - N/A Licence conditions.	Works approval conditions remain unchanged. Licence conditions will be amended to include the Ciber plant movement off and on the premises.	Application supporting documentation
Point source emissions to air including monitoring	W2.1.1 W3.1.1 – W3.1.6 No Licence conditions.	Commissioning and Operation The works approval has been amended to remove a designated location of the asphalt plant within the premises boundary. The Map of air emission point has been removed from Schedule 1. DER's assessment and decision making are detailed in Appendix A.	Application supporting documentation
Point source emissions to surface water including monitoring	N/A	No conditions relating to point source emissions to surface water or the monitoring of such emissions are required for the Works Approval or Licence.	Application supporting documentation
Point source emissions to	N/A	No conditions relating to point source emissions to groundwater or the monitoring of such emissions are required for the Works Approval or Licence.	Application supporting



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
groundwater including monitoring			documentation
Emissions to land including monitoring	N/A	No conditions relating to point source emissions to land or the monitoring of such emissions are required for the Works Approval or Licence.	Application supporting documentation
Fugitive emissions	N/A	Commissioning and Operation The closest sensitive land use is the Marta Marta community located 1.6 km to the northwest. The premises is 500 m from the Great Northern Highway. The location of the asphalt plant within the premises boundary does not significantly change the distance to the sensitive land users. The risk of fugitive dust emissions is low. The requirement to locate the asphalt plant in a specific location has been removed. The assessment remains that conditions for fugitive emissions are not required.	Application supporting documentation.
Odour	N/A	Commissioning and Operation The closest sensitive land use is the Marta Marta community located 1.6 km to the northwest. The premises is 500 m from the Great Northern Highway. The location of the asphalt plant within the premises boundary does not significantly change the distance to the sensitive land users, and risk of odour emissions is low. Therefore the requirement to locate the asphalt plant in a specific location has been removed. The assessment remains that odour conditions are not required.	Application supporting documentation.
Noise	N/A	Commissioning and Operation The closest sensitive land use is the Marta Marta community located 1.6 km to the northwest. The premises is 500 m from the Great Northern Highway. The location of the asphalt plant within the premises boundary does not significantly change the distance to the sensitive land users, and risk of noise emissions is low. The requirement to locate the asphalt plant in a specific location has been removed. The assessment remains that noise conditions are not required.	Application supporting documentation.



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Monitoring general	N/A	No conditions relating to general monitoring are required for the Works Approval or Licence.	N/A
Monitoring of inputs and outputs	N/A	No conditions relating to monitoring of input and outputs are required for the Works Approval or Licence.	N/A
Process monitoring	N/A	No conditions relating to process monitoring are required for the Works Approval or Licence.	N/A
Ambient quality monitoring	N/A	No conditions relating to ambient quality monitoring are required for the Works Approval or Licence.	N/A
Meteorological monitoring	N/A	No conditions relating to meteorological monitoring are required for the Works Approval or Licence.	N/A
Improvements	N/A	No improvement conditions are required for the Works Approval or Licence.	N/A
Information	W4.1.1 – W4.1.4 W4.2.1 Licence conditions	Boral is required to submit a commissioning stack test report within one month prior to completion of commissioning. No amendment to the works approval is required.	N/A
Works Approval Duration	N/A	The duration of the works approval is three years and expires on 2 August 2018.	N/A



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
18/08/2016	Proponent sent a copy of draft instrument	21 day comment period waiver form signed - proposed amendment accepted. Applicant provided comments relating to wording of commissioning period.	Noted.



6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High



Appendix A

Point source emissions to air including monitoring

Boral expects the following air emissions to be achievable and within parameters of the *Environmental Guidelines on Best Available Techniques (BAT) for the Production of Asphalt Paving Mixes*, European Asphalt Pavement Association 2007 (the EAPA Guidelines).

Parameter	Expected achievable	EAPA BAT guideline
Particulate matter	50 mg/m ³	10 - 50 mg/m ³
Sulphur dioxide	350 mg/m ³	350 – 500 mg/m ³
Nitrogen oxides	350 mg/m ³	350 – 500 mg/m ³
Carbon Monoxide	1000 mg/m ³	350 – 500 mg/m ³

Emission Description

Emission: Stack emissions to air in the form of particulates, nitrogen oxides, carbon monoxide and sulphur dioxide.

Impact: Particulate emissions can be harmful to human health and the environment. Elevated total suspended particulates (PM) can impact ambient environmental quality resulting in amenity impacts, and can smother vegetation.

Controls: The closest sensitive land use is the Marta Marta community located 1.6 km to the northwest. The premises is 500 m from the Great Northern Highway. The premises is otherwise considered to be in an isolated location. Boral has requested a change to the location of the asphalt plant. However, the location of the asphalt plant within the premises boundary does not significantly change the distance to sensitive receptors. The closest possible separation distance would be approximately 1.5 km.

The primary control for air emissions from the plant is the baghouse, in conjunction with the ability to adjust process temperature and controls. The applicant has not provided specifications for the filter system, though stipulates that particulate emissions of 50mg/Nm³ is achievable with the current system. Boral has committed to a number of air quality management practices to minimise the risk of air emissions including:

- Automated temperature and flow controls for to ensure optimum filtering through the baghouse and optimum process settings;
- Differential pressure gauge to indicate bag rupture or breakage and to trigger shut down and repair or replacement before returning to operation;
- Stack height 8 m above ground level, flow 6-7 m/s;
- Regular inspection and maintenance of pollution control equipment;
- Collection and storage of captured particles, which will either be recycled throughout the process, or disposed of to a Licenced facility; and
- Equipment operated by trained operators only.

Risk Assessment

Consequence: Minor

Likelihood: Unlikely

Risk Rating: Moderate

Regulatory Controls – commissioning

To confirm emissions from the Asphalt Plant correspond to Boral's expectations, the Works Approval Holder will commission the plant for a period not exceeding 4 months. During commissioning, monitoring will be undertaken at the baghouse stack, using methods prescribed by the USA Environmental Protection Agency (USEPA). The results will be compared against the



EAPA Guidelines. Monitoring and recording will be undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

The location of the asphalt plant within the premises boundary does not significantly change the distance to sensitive receptors. Risk of air emissions does not change. The map of the emission point in Schedule 1 has been removed and Boral may locate the asphalt plant where operationally convenient within the premises boundary.

Regulatory Controls – Licence

Total asphalt production on the premises will remain the same. Risk of air emissions from the Ciber is expected to be the same as that for the TEREX. Therefore it is expected that there will be no changes to regulatory controls of air emissions due to operation of the Ciber on the premises. Licence conditions require the baghouse to be operated and regularly inspected and maintained, with filters replaced if frayed, torn or blocked.

Residual Risk

Consequence: Minor

Likelihood: Rare

Risk Rating: Moderate