



Decision Document

Environmental Protection Act 1986, Part V

Proponent: Boral Resources (WA) Ltd

Licence L7975/2004/4

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
PORT HEDLAND WA 6721

Issue date: Thursday, 10 October 2013

Commencement date: Sunday, 20 October 2013

Expiry date: Saturday, 19 October 2024

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER) has decided to issue an amended licence. 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 checked="" type="checkbox"/> Works Approval amendment <input type="checkbox"/>	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	12	1,200,000 tonnes per annual period
	35	70,000 tonnes per annual period
	61A	7,000 tonnes per annual period
Application verified	Date: NA	
Application fee paid	Date: NA	
Works Approval has been complied with	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Compliance Certificate received	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" 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

Boral Contracting Pty Ltd (Boral) is part of Boral Resources (WA) Ltd. The mining lease is 100% owned and registered in the name of Boral Contracting Pty Ltd.

Activities at the site include the quarrying and extraction of hard rock, crushing and screening, and stockpiling of aggregates. The main emissions associated with the quarrying and screening activities are dust and noise.

The premises is 50 kilometres (km) east of Port Hedland on the Strelley Pastoral Station. The site is located on flat ground and set back 500 metres (m) from the Great Northern Highway. The nearest sensitive land use is the Marta Marta community located 1.6 km northwest of the site.

Drainage lines are 66 m north of the site, draining northerly away from the site. 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.

Boral proposes to manufacture asphalt at the premises. Either a Ciber 19P mobile asphalt plant (the Ciber) or a TEREX E 100P mobile asphalt plant (the TEREX) will operate at various times dependant on market demand. The asphalt plants will be relocated off and on the site as required. Only one asphalt plant will operate at any one time. Total asphalt production is expected to be no more than 70,000 tonnes per year.

The Ciber will be constructed and commissioned under works approval W5833/2015/1 before its operation is included on the Licence. The TEREX has previously been commissioned under W5737/2014/1 at Boral's Mt Regal Quarry premises and does not require recommissioning prior to this amendment.

The TEREX is a portable drum type plant capable of producing up to 100 tonnes asphalt per hour. The TEREX consists of:

- Cold aggregate bins;
- Conveyors;
- Drum-dryer;
- Baghouse;
- Pugmill;
- Control cabin;



- Bitumen tanks (3 chambers, total 140,000 Litres);
- Hot asphalt silo;
- Oil heater;
- Generator; and
- Self bunded diesel tank - 20,000 Litres.

The TEREX is capable of recycling Reclaimed Asphalt Pavement (RAP) and Boral has confirmed that RAP may be stored on the premises, crushed and screened to size, and recycled through the plant as part of the asphalt manufacturing process.

An Aggregate Pre-coating Facility (APF) may also be located at the site from time to time and will operate independently of the asphalt plant. Pre-coating of aggregate is not a prescribed activity under *the Environmental Protection Regulations 1987*. The APF consists of a feed hopper, sprayer, screen, conveyors and a diesel driven air compressor which is used to pre-coat aggregates with a diesel-based product. Bitumen will also be used in 'black' pre-coating.

The emissions associated with asphalt plants are emissions to air via a stack, fugitive dust, odour and noise. The environmental risk of emissions and discharges from the TEREX asphalt plant is considered low due to facility design, management commitments and distance to sensitive land uses.

Category 35: Asphalt manufacturing has been added to the Licence. Category 61A: Solid Waste Facility has also been added to the Licence, as RAP from other premises may be stored and/or processed to size.

Where conditions have been amended, added or removed from the existing licence these are outlined in the Decision Table in Section 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	Definitions	In line with recent administrative changes implemented within the Department, the definition for 'CEO' has been updated; and new definitions for 'Compliance Report' and 'Department' included in this section.	Application supporting documentation
	Conditions 1.2.1, 1.2.2, 1.2.3, 1.2.4 and 1.2.5 removed.	<p>Conditions that are not valid, enforceable or risk based have been removed from the Licence in accordance with the Guidance Statements <i>Regulatory principles</i> (DER, July 2015) and <i>Setting conditions</i> (DER, October 2015), as detailed below.</p> <p>Previous condition 1.2.1 specified: <i>"Nothing in this Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:</i> (a) <i>pollution;</i> (b) <i>unreasonable emission;</i> (c) <i>discharge of waste in circumstances likely to cause pollution; or</i> (d) <i>being contrary to any written law."</i></p> <p>This is not considered valid, enforceable or risk based, as it is an explanatory statement that provides clarification of the operation of the Licence. The condition has been removed.</p> <p>Previous condition 1.2.2 specified:</p>	<p>Guidance Statement <i>Regulatory principles</i> (DER, July 2015)</p> <p>Guidance Statement: <i>Setting Conditions</i>, DER, October 2015</p> <p><i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i></p>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p><i>“The Licensee shall operate and maintain all pollution control and monitoring equipment to the manufacturer’s specifications or any relevant and effective internal management system.”</i></p> <p>This condition is not enforceable as it is not clear or certain in that the pollution control equipment and monitoring equipment required to be operated and maintained is not specified. The requirements to achieve compliance are not clear. The condition has been removed.</p> <p>Previous condition L1.2.3 specified: <i>“The Licensee, except where storage is prescribed in section 1.3, shall ensure that environmentally hazardous materials are stored in accordance with the Code of Practice for the Storage and handling of dangerous goods.”</i></p> <p>This condition is not enforceable as it is not sufficiently clear or certain and inconsistently regulates for activities below prescribed category thresholds. DER has assessed the risk associated with spills or leaks of environmentally hazardous materials to determine if specific regulatory controls are required for storage of such materials.</p> <p>Previous condition 1.2.4 specified: <i>“The Licensee shall immediately recover, or remove and dispose of spills of environmentally hazardous materials outside an engineered containment system.”</i></p> <p>This condition is not valid as it inconsistently regulates activities below prescribed category thresholds. DER has assessed the risk associated with spills of environmentally hazardous materials to determine if specific regulatory controls are required.</p>	



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p><u>Emission Description</u> <i>Emission:</i> Spills and leaks of environmentally hazardous materials, including hydrocarbons, outside of engineered containment systems.</p> <p><i>Impact:</i> Soil contamination, impacts to groundwater and surface water quality, ecosystem disruption, depending on nature and volume of material released to the environment.</p> <p><i>Controls:</i> The premises is situated approximately 4 km from Tabba Tabba Creek. Groundwater has been intersected at a depth of 8 m to 24 m below ground level.</p> <p>Boral has committed to comply with the relevant legislations in regard to the storage and handling of dangerous goods, which includes the <i>Dangerous Goods Safety Act 2004</i>; the <i>Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007</i>; and AS 1940-2004.</p> <p>Boral has a Hydrocarbon Storage and Handling Procedure which includes:</p> <ul style="list-style-type: none"> • If a sealed refuelling pad or similar is not present, refuelling and hydrocarbon liquid transfers to be conducted over a drip tray or similar under likely drip points. • Any sump intended to catch spills from refuelling and transfer operations be kept free of water and soil. • Hydrocarbons stored in a bunded hydrocarbon storage area and inspected regularly. • Hazardous liquids are stored in self-contained bunding. • Spill kits kept in close proximity to the asphalt plant. • Minor bitumen spills are allowed to set and are then retrieved and recycled back 	



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		<p>into the process.</p> <p>It is the responsibility of the Licensee to ensure compliance with legislative requirements, including Australian Standard 1940-2004 – The storage and handling of flammable and combustible liquids, which specifies that clean up action needs to be initiated immediately following a leak or spill.</p> <p><u>Risk Assessment</u> <i>Consequence: Minor</i> <i>Likelihood: Rare</i> <i>Risk Rating: Low</i></p> <p><u>Regulatory Controls</u> <i>The Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007</i> is applicable for environmentally hazardous materials above placard quantity.</p> <p>The risk associated with spills outside of engineered containment systems is assessed as low, therefore no further regulatory controls are being applied to the Licence at this time.</p> <p>The general provisions of the <i>Environmental Protection Act 1986</i> with respect to the causing of pollution and environmental harm apply, as does subsidiary legislation including the <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>.</p> <p><u>Residual Risk</u> <i>Consequence: Minor</i> <i>Likelihood: Rare</i></p>	



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p><i>Risk Rating: Low</i></p> <p>Previous condition 1.2.2 specified: <i>"The Licensee shall:</i> (a) <i>implement all practical measures to prevent stormwater run-of becoming contaminated by the activities on the Premises; and</i> (b) <i>treat contaminated or potentially contaminated stormwater as necessary prior to being discharge from the Premises.¹</i> <i>Note 1: The Environmental Protection (Unauthorised Discharges) Regulations 2004 make it an offence to discharge certain materials into the environment"</i></p> <p>This condition is not enforceable as it is not sufficiently clear or certain what stormwater infrastructure is required to be constructed and maintained, or if any specific management actions are required. This condition has been removed. DER has assessed the risk associated with the discharge of potentially contaminated stormwater to determine if any further regulatory controls are required.</p> <p>Operation – stormwater <u>Emission Description</u> <i>Emission:</i> Discharge of potentially contaminated stormwater from operational areas to the environment.</p> <p><i>Impact:</i> Impacts to groundwater and surface water quality, ecosystem disruption.</p> <p><i>Controls:</i> The premises is situated approximately 4 km from Tabba Tabba Creek. There is no significant flora or fauna in the local vicinity. Stormwater in proximity to excavation works is captured within the quarry pit and used for dust suppression. Stormwater around the remainder of the site is captured via open</p>	



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Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p>drains and directed to an existing holding pit at the northwest of the site and used for dust suppression.</p> <p><u>Risk Assessment</u> Consequence: Minor Likelihood: Rare Risk Rating: Low</p> <p><u>Regulatory Controls</u> The general provisions of the <i>Environmental Protection Act 1986</i> with respect to the causing of pollution and environmental harm apply, as does subsidiary legislation including the <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>.</p> <p>Due to the low risk and the management practices implemented on site, no further regulatory controls are required.</p> <p>Stormwater management infrastructure will be inspected during DER's compliance inspections; and the procedures and infrastructure in place to manage stormwater will be evaluated.</p> <p><u>Residual Risk</u> Consequence: Minor Likelihood: Rare Risk Rating: Low</p>	
Premises operation	L1.2.1 to L1.2.5	L1.2.1 has been included to allow movement of the TEREX asphalt plant off and on the site.	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
		<p>L1.2.2 and L1.2.3 have been included to ensure that the asphalt plant is fitted with automatic safeguards to ensure bitumen does not ignite and to ensure the baghouse is monitored and maintained. DER's decision making is detailed in Appendix A.</p> <p>Reclaimed Asphalt Pavement (RAP) will be brought on site for storage and where not already processed off site, may be processed to size by crushing and screening. L1.2.4 has been added to include acceptance of and storage of RAP and L1.2.5 specifies criteria for screening and crushing RAP and for recycling in the asphalt plant. DER's decision making is detailed in Appendix A.</p>	
Point source emissions to air including monitoring	No conditions	DER's assessment and decision making are detailed in Appendix A.	Listed in Appendix A
Point source emissions to surface water including monitoring	No conditions	There are no point source emissions to surface water for the screening and quarrying operations on site, nor due to operation of the asphalt plant. No conditions are required for surface water emissions.	Application supporting documentation.
Point source emissions to groundwater including monitoring	No conditions	There are no point source emissions to ground water for the screening and quarrying operations on site, nor due to operation of the asphalt plant. No conditions are required for emissions to ground water.	Application supporting documentation.
Emissions to land including monitoring	No conditions	There are no point source emissions to land for the screening and quarrying operations on site, nor due to operation of the asphalt plant. No conditions are required for emissions to land.	Application supporting documentation.
Fugitive	Previous conditions	Previous condition 2.6.1 specified:	Application



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Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
emissions	2.6.1 and 2.6.2 removed.	<p><i>“The Licensee shall use all reasonable and practical measures to prevent and where that is not practicable to minimise dust emissions from the Premises.”</i></p> <p>Previous condition 2.6.2 specified: <i>“The Licensee shall ensure that no visible dust generated by the activities of the Premises crosses the boundary of the Premises.”</i></p> <p>These conditions are not risk based. Moreover, the substantive offences of the EP Act provide enforceable prohibitions for dust emissions that result in pollution or environmental harm. These conditions have been removed. DER has assessed the risk associated fugitive dust to determine if any further regulatory controls are required.</p> <p><u>Emission Description</u> <i>Emission:</i> Fugitive dust emissions from vehicle movement, transfer of materials and from stockpiles. <i>Impact:</i> Dust can impact ambient environmental quality resulting in amenity impacts, reduction in visibility and can smother vegetation. Particulate matter can cause human health impacts. <i>Controls:</i> The nearest sensitive land use is the Marta Marta community located 1.6 km north west of the site. The operation is 500 metres from Great Northern Highway. There is no significant flora or fauna in the local vicinity.</p> <p>Boral has the <i>Tabba Tabba Mobile Asphalt Plant Dust Management Plan</i> specific to the asphalt plant operation and an overarching <i>Mt Regal Quarry Dust Management Plan</i>. Dust management includes the following measures:</p> <ul style="list-style-type: none"> • Water cart and sprinklers used for dust suppression; • Water for dust control sourced from the onsite water holding pit. If the pit runs dry water will be trucked in or drawn from groundwater under a Licence to Take Water 	<p>supporting documentation</p> <p>Guidance Statement <i>Regulatory principles</i> (DER, July 2015)</p> <p><i>Guidance Statement: Setting Conditions</i>, DER, October 2015</p> <p><i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i></p> <p><i>Environmental Protection Act 1986</i></p> <p><i>Tabba Tabba Mobile Asphalt Plant Dust Management</i></p>



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Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p>GWL180689(1);</p> <ul style="list-style-type: none"> • Regular checks of the screening plant to ensure sprays are misting properly and efficiently; • Final screened product to have a minimal drop distance to final stockpile; • Unsealed roads and bare areas watered as required; • Regular inspection of plant and general housekeeping to remove accumulation of dust; • Stockpile areas watered by sprinklers/water cart as necessary to minimise dust; • Continuous monitoring for visible dust by staff; • Operations limited or ceased in severe wind conditions; and • A complaint management system in place. <p><u>Risk Assessment</u> Consequence: Minor Likelihood: Rare Risk Rating: Low</p> <p><u>Regulatory Controls</u> Risk assessment of fugitive dust is low. General provisions of the <i>Environmental Protection Act 1986</i> will apply. No licence conditions to regulate dust are required.</p> <p>L2.1.3 requires the Licensee to implement a complaints management system. L2.2.1 requires submission of a complaints summary in the Annual Environment Report to ensure DER is aware of any complaints of dust.</p>	<p><i>Plan</i>, Boral Resources, June 2015</p> <p><i>Tabba Tabba Quarry Dust Management Plan</i>, Kimberley Quarry Pty Ltd, July 2014</p>
Odour	No conditions	<p><u>Emission Description</u> <i>Emission</i>: Odour from transfer and storage of bitumen and bituminous products and processing of asphalt.</p>	Application supporting



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Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p><i>Impact:</i> Nuisance odours resulting in decreased ambient air quality and possible human health concerns.</p> <p><i>Controls:</i> The Marta Marta community is located 1.6 km northwest of the premises. The temperature of the asphalt plant is computer controlled so as to maintain an optimum operating temperature thereby reducing the odour levels associated with the production process.</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Minor <i>Likelihood:</i> Rare <i>Risk Rating:</i> Low</p> <p><u>Regulatory Controls</u> Risk of odour is assessed as low. General provisions of the <i>Environmental Protection Act 1986</i> will apply. No odour conditions are required to be added to the Licence.</p> <p>L2.1.3 requires the Licensee to implement a complaints management system.</p> <p>L2.2.1 requires submission of a complaints summary in the Annual Environment Report to ensure DER is aware of any complaints of odour.</p>	<p>documentation.</p> <p><i>Environmental Protection Act 1986.</i></p>
Noise	No conditions	<p><u>Emission Description</u> <i>Emission:</i> Cumulative noise emissions associated with the construction and operation of the asphalt plant and crushing and screening activities. <i>Impact:</i> Noise emission resulting in amenity impacts and nuisance to persons not on the Premises. <i>Controls:</i> The nearest sensitive land use is located 1.6 km from the premises. The Premises is required to comply with the <i>Environmental Protection (Noise) Regulations 1997</i>.</p>	<p>Application supporting documentation.</p> <p><i>Environmental Protection (Noise) Regulations 1997.</i></p>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p><u>Risk Assessment</u> <i>Consequence: Minor</i> <i>Likelihood: Rare</i> <i>Risk Rating: Low</i></p> <p><u>Regulatory Controls</u> The <i>Environmental Protection (Noise) Regulations 1997</i> will apply. Risk of noise is low. No specific conditions relating to noise emissions are required</p> <p>L2.1.3 requires the Licensee to implement a complaints management system. L2.2.1 requires submission of a complaints summary in the Annual Environment Report to ensure DER is aware of any complaints of noise.</p>	
Monitoring general	No conditions	There are no monitoring conditions in the Licence therefore general monitoring conditions are not required	N/A
Monitoring of inputs and outputs	No conditions	No conditions relating to the monitoring of inputs or outputs are required.	N/A
Ambient quality monitoring	No conditions	Ambient quality monitoring is not required.	N/A
Meteorological monitoring	No conditions	Meteorological monitoring is not required.	N/A
Improvements	No conditions	No improvement conditions are required.	N/A



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Information	<p>Previous condition 5.1.2 removed</p> <p>L2.1.2 L2.2.1</p>	<p>Previous condition 5.1.2 specified: <i>“The Licensee shall ensure that:</i> <i>(a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the License or copies thereof; and</i> <i>(b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.”</i></p> <p>In accordance with the Guidance Statements <i>Regulatory principles</i> (DER, July 2015) and <i>Setting conditions</i> (DER, October 2015), condition 5.1.2 has been removed from the Licence as it is not considered enforceable as the requirements for compliance are not clear.</p> <p>Condition 2.1.2, relating to the annual compliance report, has been updated to reflect administrative changes within the department.</p> <p>Table 2.2.1 has also been updated to reflect the removal of the compliance report template from the Licence. The Licensee will be required to access the form on DER’s website.</p>	<p>Guidance Statement <i>Regulatory principles</i> (DER, July 2015)</p> <p>Guidance Statement <i>Setting conditions</i> (DER, October 2015)</p>
Licence duration	NA	The Licence expiry date was changed to Saturday, 19 October 2024 by a Notice of Amendment dated 29 April 2016.	<i>Notice Of Amendment of Licence Expiry Dates</i> , Director General, Department of Environment Regulation, 29 April 2016



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.	<p>Proponent requested that waste acceptance processed changed from Processed RAP to RAP as RAP may be crushed and screened on site.</p> <p>Proponent requested Main Roads 511 Quality specification criteria for RAP be removed, because the it is not based on environmental risk and the only items listed that may possibly pose an environmental air emission risk are tar products, pavement marks and geotextile products.</p>	<p>Noted and change made as requested.</p> <p>Agreed and low environmental risk contaminants removed from waste processing specifications.</p>



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

The asphalt plant is expected to produce up to 70,000 tonnes of asphalt per year.

To confirm that air emissions from the TEREX E100P correspond to the manufacturer's specifications, the plant was commissioned under works approval W5737/2014/1 at Boral's Mt Regal Quarry. Monitoring was undertaken at the baghouse stack on 15 August 2015 using methods prescribed by the USA Environmental Protection Agency (USEPA).

The results were compared against the *Environmental Guidelines on Best Available Techniques (EAPA BAT) for the Production of Asphalt Paving Mixes, European Asphalt Pavement Association, 2007* (the EAPA Guidelines) (see Table 1 below). Monitoring and recording was undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

Table 1: Stack test air emissions and EAPA Guidelines

Parameter	Stack test emission during commissioning 15/08/2015	EAPA Guidelines
PM	20* mg/m ³	10 – 50 mg/m ³
Sulphur dioxide	27 mg/m ³	350 - 500 mg/m ³
Carbon monoxide	190 mg/m ³	350 - 1000 mg/m ³
Nitrogen Oxides	67 mg/m ³	350 - 500 mg/m ³

*Average over two test runs

Boral has confirmed that Reclaimed Asphalt Pavement (RAP) may be recycled through the TEREX asphalt plant. RAP may be brought on site for storage, and where not already processed off site, may be processed to size by crushing and screening. Storage of more than 1,000 tonnes waste per year is a prescribed activity category 61A and this category has been added to the Licence.

Operation – no RAP used in the production of asphalt

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

Impact: Particulate emissions and gaseous emissions can be harmful to human health. Elevated total suspended particulates 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 site is otherwise considered to be in an isolated location.

The primary control for emissions from the plant is the baghouse in conjunction with the ability to adjust process temperature and controls. Commitments to manage particulate emissions from the asphalt plant are included in the *Tabba Tabba Mobile Asphalt Plant Dust Management Plan*, Boral Resources (WA), June 2015.

Boral has committed to number of air quality management practices to minimise air emissions including:



- Automated temperature and flow controls with manual override manage the process;
- Baghouse filters designed to reduce particulate stack emissions to below 50mg/m³;
- Baghouse differential pressure indicators monitor baghouse for malfunctions and bag breaks;
- Regular inspection and maintenance of pollution control equipment including the baghouse;
- Use of low sulphur diesel fuel; and
- Equipment operated by trained operators.

Commissioning stack test result (Table 1) demonstrated that the TEREX can operate within the standards of the EAPA Guidelines.

Risk Assessment

Consequence: Minor

Likelihood: Unlikely

Risk Rating: Moderate

Regulatory Controls

The TEREX E100P is identified in the Definitions section so that the plant and emission controls operated on the premises is the same plant that has been stack tested and assessed in this Decision Document.

L1.2.3 and L1.2.4 ensures operation of the primary air emission controls as proposed by the Licensee. L1.2.3 ensures ignition of bitumen within the drum is prevented. L1.2.4 the baghouse and filters are used and regularly inspected. When inspection reveals blocked or leaking filters, operation is to cease until filters are replaced.

Stack testing is not required by condition of the Licence because the distance to sensitive receptors is 1.6 km away, with correspondingly reduced concentration of air emissions. Consideration has also been given that conditions L1.2.2 and L1.2.3 ensure that primary air emission controls are implemented. L1.2.4 ensures that processed Reclaimed Asphalt Product accepted onto the premises does not contain specific materials that when used in asphalt processing, may become contaminants. The plant will not be located permanently onsite but only on an as needs basis.

Residual Risk

Consequence: Insignificant

Likelihood: Rare

Risk Rating: Low

Operation - Recycling of RAP in the asphalt plant

Emission: Moist RAP when heated can produce VOC's.

Historically old road base may contain coal tar which when heated may be emitted as toxic volatiles. RAP may contain materials such as markings or geotextiles which when heated may emit contaminants.

Impact: VOC's may cause eye, nose and throat irritations; headaches; nausea and other health impacts. Coal tar volatiles are a known carcinogenic.

The impact of emissions from heated markings or geotextiles is considered low but not definitively known.



Controls: Moist RAP when heated can produce VOC's. However, in order to be able to process RAP in the asphalt plant, the RAP must have dry or limited moisture content, and therefore VOC emissions are considered unlikely.

It is understood that coal tar has not historically been used for road surfacing in Western Australia. It is highly unlikely, but not impossible, for RAP to contain coal tar when sourced from WA.

RAP is recycled through the asphalt plant at a ratio of 10%, therefore a maximum of 7,000 tonnes RAP will be processed.

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 site is otherwise considered to be in an isolated location. Air emissions would be dispersed and low concentration at the location of sensitive land users. However, itinerant receptors may possibly be located, at times, at closer distances.

Risk Assessment

Consequence: Moderate

Likelihood: Rare

Risk Rating: Moderate

Regulatory Controls

L1.2.4 allows RAP as a waste to be accepted onto the premises.

L1.2.4 specifies that RAP, when it is crushed or screened or used in the asphalt manufacturing process, must not contain tar based products given its known toxicity. Pavement marks or geotextile fabrics are also excluded to ensure there is no risk of air emissions from these products where toxicity is not determined.

With imposition of these conditions, residual risk or air emissions due to processing of RAP in the asphalt plant are low. Therefore conditions requiring monitoring of air emissions from the stack are not warranted.

Residual Risk

Consequence: Minor

Likelihood: Rare

Risk Rating: Low

Reference documents

- Application supporting documentation
- *European Guidelines on Best Available Techniques (BAT) for the Production of Asphalt Paving Mixes*, European Asphalt Pavement Association (EAPA), 2007.
- *Tabba Tabba Mobile Asphalt Plant, Dust Management Plan*, Boral Resources (WA), June 2015.