Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: Boral Resources (W.A.) Ltd

Licence: L6265/1983/8

Registered office:	Level 3 40 Mount Street NORTH SYDNEY NSW 2060
ACN:	008 686 904
Premises address:	Boral Asphalt 90 McDowell Street WELSHPOOL WA 6106 Being Lot 43 on Plan 3217
Issue date:	Thursday, 28 July 2011
Commencement date:	Wednesday, 3 August 2011
Expiry date:	Tuesday, 2 August 2016

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:	Chris Malley A/Senior Licensing Officer
Decision Document authorised by:	Lauren Trott A/Manager Licensing, Process Industries (Metro)

Contents

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 ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	35	250,000 tonnes per annual period
	61A	110,000 tonnes per annual period
Application verified Application fee paid	Date: N/A Date: N/A	
Works Approval has been complied with Compliance Certificate received	Yes☒ No☐ N/A☐ Yes☒ No☐ N/A☐	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes☐ No☒	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No☒	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 *Environmental Protection Act 1986*)?	Yes☐ No☒ Department of Water consulted Yes ☐ No ☒	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes☐ No☒		
Is the Premises subject to any EPP requirements? Yes☐ No☒		

3 Executive summary of proposal and assessment

Boral Resources (W.A.) Ltd (Boral) operates an asphalt plant located in Welshpool in the City of Canning. It is situated on the northern extent of an area zoned for 'general industry' adjacent to a rail corrider with industrial zoned areas further north, approximately 1.1 kilometers from the nearest residence. Immediately south, east and west is other industry with the nearest sensitive receptors 1-1.1 km south east of the premises boundary in an area zoned 'urban development.'

The asphalt plant uses a pug mill batching plant where raw inputs are placed in a pug mill to be ground and mixed with liquid bitumen. Aggregates are weighed and conveyed to a drum dryer where they are heated and then discharged to a screen stack via a hot elevator. In the screen stack, the aggregate is resized and stored in a series of five hot bins. Bitumen is stored in heated tanks adjacent to the plant and filler material (lime and dust from the baghouse filters) is stored in purpose built silos. These materials are weighed and fed into the pug mill (mixing unit) along with hot aggregate. The hot mixed asphalt product is then either delivered directly into a delivery truck or transferred to one of a series of three hot storage bins, pending delivery to off-site. Boral have introduced the crushing and screening of unprocessed reclaimed asphalt pavement (RAP) through works approval W5881/2015/1 granted on 30 October 2015. Boral will locate crushing and screening equipment on site as required to process RAP for use in the asphalt manufacturing process. The processed RAP will be initially stored in exposed stockpiles and then transferred to an enclosed building.

This decision document has been prepared for the amended licence in response to the completion of works under works approval W5881/2015/1 and includes a conversion of the licence into a new format. The licensee has also submitted a proposal for an upgraded washbay wastewater treatment system that has been assessed.

For an asphalt plant, the principle emissions of concern are emissions to air including particulates, sulfur dioxide, nitrogen dioxide, carbon monoxide, and odour. Process controls and a bag filter are used to control these emissions. Potential environmental issues with processing RAP are dust from the crushing and screening, increased VOC emissions during use in the asphalt manufacturing process and potential contamination of stormwater if RAP contains contaminated material.

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			
Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
General conditions	N/A	Condition G1(a) of the previous licence specified an annual quanity of asphalt that could be produced at the premises. This will be specified on page 1 of the licence therefore has been omitted from the amended licence.	N/A
Premises operation	L1.3.1 L1.3.2 L1.3.3 L1.3.4	Condition L1.3.1 replaces condition G1(b) specifying an hourly maximum rate of asphalt production. The rate has been increased from 120 tonnes per hour (tph) to 180 tph based on the assessed increased in capacity from 200,000 tonnes per year to 250,000 tonnes per year. On average, 250 operational days per year, with 4.5 hours per day asphalt production at 180 tph is equivalent to 250,000 tonnes of asphalt per year. Conditions A1, A2(a-d), A3(a), A4(a-c) and A10 have been replaced by condition L1.3.2 that includes Table 1.3.2. The table is materials received, stored and processed on site according to relevant specifications. New regulatory controls in Table 1.3.2 relate to works approval W5881/2015/1 to establish the crushing and screening of unprocessed RAP and the use of processed RAP in the asphalt manufacturing process. According to the risk assessment for W5881/2015/1, Table 1.3.2 will require the following RAP specifications: • unprocessed RAP must be crushed screened and stored in the designated area on the premises; • must be crushed and screened with the designated equipment or equivalent in manufacturers specifications for noise emissions and dust control; • must only be crushed and screen if it is free of specified contaminants. As per works approval W5881/2015/1 the crushing and screening equipment for	Works approval W5881/2015/1.

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Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		unprocessed RAP is mobile and will be located and removed from the premises on an as needs basis. Subject to locating the equipment in the designated unprocessed RAP area, condition L1.3.3 will permit the licensee to locate and remove the equipment as required.	
Emissions general	L2.1.1	Descriptive limits will be set through condition 2.2.2 of the licence and therefore the condition regarding recording and investigation of exceedances of limits has been included.	N/A
Point source emissions to air including monitoring	L1.3.1 L2.2.1 L2.2.2 L2.2.3 L3.1.1 L3.1.2 L3.1.3 L3.1.4 L3.1.5 L3.2.1 L3.2.2 L3.2.3	Emission Description *Emission:* Combustion gases (NOx, CO and particulates) from the drum dryer via Stack A1 (normal operation). Dark smoke may also be emitted. *Impact:* Reduced local air quality. Nearest residents are located approximately 1.1km from the premises and industrial premises are imediately adjacent. *Controls:* Air emissions from the drum dryer are treated by a baghouse for the removal of particulates. A baghouse will reduce particulate emissions to less than 50mg/m^3. Baghouse emissions are discharged via a 12 m stack at a velocity greater than 12 m/s. Bitumen is added directly to the pugmill to mitigate VOC generation. Processed RAP is not directly heated by the burners, but indirectly heated and moisture content of RAP is also managed which minimises VOC generation. Risk Assessment *Consequence:* Minor *Likelihood*: Possible *Risk Rating:* Moderate Regulatory Controls As per the 'premises operation' section, condition 1.3.1 replaces condition G1(b) that limits the hourly asphalt production rate as a surrogate control for point source air emissions. The licensee is currently operating at 180 tph without known environmental consequence.	

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Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Condition A8 requiring air emissions from the drum dryer to pass through a baghouse prior to stack discharge has been replaced by column 4 of Table 2.2.1 in condition 2.2.1. As a result of licensee comments on the draft licence (refer to point 7 in section 5 of this report), point 'A2' that had been included for the baghouse vents on the filler silo was removed from Table 2.2.1. This was replaced by a more general condition in 2.2.3 to ensure displacement air from the filling of silo's passes through a baghouse dust collector that vents air emissions at less than 1 m from ground level. This condition replaces A10 in the previous licence and is consistent with the licensee's draft comments. Condition A7 specified the minimum height of stack (12 m) and discharge velocity (12 m/s) for the baghouse stack. This will be replaced by condition 2.2.1 and 2.2.2. Condition A8 specified an emission limit for particulates of 150 mg/m^3 from the baghouse stack. The limit for particulates will be specified in condition 2.2.2 and reduced to 50 mg/m^3 which is achievable for this technology. Historical stack monitoring results show the licensee has normal operating concentrations less than 20 mg/m^3. It is not known why previous licences imposed a particulate limit on baghouse emissions but did not require any emissions monitoring to assess compliance with the limit. Stack monitoring requirements have been included in condition 3.2.1 for the licensee to monitor its performance and confirm compliance with the particulate limit. The licensee will also be required to monitor NOx and CO which are standard parameters to confirm combustion efficiency and consistent with other asphalt manufacturing licences. As the licence contains requirements for stack monitoring, conditions 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.2.2 and 3.2.3 will be included to ensure sampling and analysis is performed according to specified standards. The previous licence contained conditions A9 relating to the emission of dark smoke from stacks. This requirement duplicated the provisions of the *Environmental*	

DECISION TABLE			
Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Protection (Unauthorised Discharges) Regulations 2004 which makes it an offense in connection with a business or commercial activity, to burn material so as to cause dark smoke for more than 4 minutes in any hour. Condition A9 has therefore been removed. Residual Risk *Consequence*: Minor *Likelihood:* Unlikely *Residual Risk Rating:* Moderate	
Point source emissions to surface water including monitoring	N/A	The premises does not have point source emissions to surface water. There are no new discharges to surface water proposed therefore there is no change to the risk of discharges to surface water and no conditions are to be included on the amended licence.	N/A
Point source emissions to groundwater including monitoring	N/A	The premises does not have point source emissions to groundwater. There are no new discharges to groundwater proposed therefore there is no change to the risk of discharges to groundwater and no conditions are to be included on the amended licence.	N/A
Emissions to land including monitoring		**Washbay wastewater treatment upgrade proposal** Refer to the 'works' section of this table for further information. There is a risk of wastewater contaminating soil and groundwater therefore the risk of this has been assessed. Emission Description *Emission:* Contaminated wastewater from the washing down of vehicles including pavers, spray trucks, crew trucks and light vehicles. Kerosense is used to soften build-up bitumen on equipment. High pressure water is then used to remove the softened bitumen. A quick break degreaser is used to washdown light vehicles and equipment when required. The main contaminants consist of kerosene, bitumen, degreaser and	N/A

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Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		suspended solids. The conservative calculated wastewater generation rate is estimated at 4,824 L/day with average rates expected to be less. The system has a design maximum process flow rate of 5,000 L/hr which is two times the maximum flows generated by washdown hoses (2,400 L/hr). The updgraded treatment system has been designed to achieve a total petroleum hydrocarbon (TPH) concentration of less than 15 mg/L, total suspended solids less than 30 mg/L and surfactants less than 5 mg/L. *Impact:* Contamination of soil and groundwater. The site is located within an area zoned for general industry. The site is not located within a proclaimed drinking water catchment and there are no sensitive surface water ecosystems on the premises or in close proximity. DER's GIS Viewer WIN Groundwater them does not indicate there are beneficial groundwater users in close proximity to the premises. *Controls:* MyCelx Advanced Coalescer (MAC unit) treated hydrocarbon (i.e. kerosene), MXR unit to remove remaining free hydrocarbon and suspended solids and MX units for final polishing to remove emulsions, water soluble oils and solids prior to discharge. MXR units are fitted with independent automated backwash systems to prevent clogging as do the MX units. Treated wastewater exits the system and passes through a TPH monitor before entering the backwash storage tank. If the TPH monitor detects an a concentration in excess of 15 mg/L the water is redirected for re-treatment. <u>Risk Assessment</u> *Consequence*: Minor *Likelihood:* Unlikely *Risk Rating:* Moderate <u>Regulatory Controls</u> The amended licence will not contain any of the water pollution control conditions from the previous licence. DER will reassess the adequacy of wastewater management conditions on receipt of the compliance document following the wastewater upgrade. Submission of a compliance document is required by condition 5.2.1.	

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Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Note this licence does not authorise the discharge of potentially contaminated stormwater beyond the premises boundary. The discharge of contaminated stormwater can be adequately regulated by the *Environmental Protection (Unauthorised Discharges) Regulations 2004* which make it an offence to discharge certain types of materials including hydrocarbon, sediment, degreaser and detergent into the environment. Residual Risk *Consequence:* Minor *Likelihood:* Unlikely *Risk Rating:* Moderate	
Fugitive emissions	L2.3.1 L2.3.2	Emission Description *Emission:* Fugitive dust from movement of vehicles, materials handling and lift of from stockpiles including unprocessed and processed RAP stockpiles. The RAP cushing and screening equipment is also a potential source of fugitive dust. *Impact:* Reduced local air quality. May cause a nuisance to nearby industrial receptors. Nearest sensitive receptors approximately 1.1 km away *Controls:* Water misters on ground bins. Materials in the ground bins and cold feed bins are maintained in a damp state. Ground bins and cold feed bins are designed to mitigate wind impacts. Conveyors fitted with wind shields. Trafficked areas are hardstand. Crushing and screening system is fitted with a dust suppression system. Bulk filler silo fitted with sealable ports and hatches. Risk Assessment *Consequence*: Minor *Likelihood:* Unlikely *Risk Rating:* Moderate	*Environmental Protection Act 1986* Application supporting documentation *Environmental Protection (Unauthorised Discharges) Regulations 2004.*

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Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Regulatory Controls Condition A3(b) and A4(d) to maintain ground bin and cold feed bin materials in a damp state will be replaced by condition 2.3.1. Condition A5 to ensure conveyors are enclosed by wind shields has been replaced by condition 2.3.2. The Licensee is required to comply with the general provisions of the EP Act. Residual Risk *Consequence:* Minor *Likelihood:* Unlikely *Risk Rating:* Moderate	
Odour	N/A	The previous licence did not contain specific odour conditions. As per the risk assessment in works approval W5881/2015/1 the risk of odour can be regulated by the general provisions of the EP Act. There will be no odour conditions included in the amended licence.	*Environmental Protection Act 1986*
Noise	N/A	The previous licence did not contain specific noise conditions. As per the risk assessment in works approval W5881/2015/1 the premises is expected to comply with assigned noise levels in Regulation 8 of the *Environmental Protection (Noise) Regulations 1997* with the addition of RAP and associated crushing and screening equipment.	*Environmental Protection (Noise) Regulations 1997*
Monitoring general	N/A	General monitoring requirements have been addressed in the 'point source emissions to air including monitoring' section.	N/A
Monitoring of inputs and outputs	N/A	There were no requirements to monitor the inputs and outputs on the previous licence. The risk assessment of emissions, discharges and impacts has not identified any cause to include requirements to monitor inputs and outputs in the amended licence.	N/A
Process monitoring	N/A	There were no requirements to monitor the process on the previous licence. The risk assessment of emissions, discharges and impacts has not identified any cause to include requirements to monitor the process in the amended licence.	N/A

DECISION TABLE			
Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Ambient quality monitoring	N/A	There were no requirements to monitor meteorology on the previous licence. The risk assessment of emissions, discharges and impacts has not identified any cause to include requirements to monitor meteorology in the amended licence.	N/A
Meteorological monitoring	N/A	There were no requirements to monitor the inputs and outputs on the previous licence. The risk assessment of emissions, discharges and impacts has not identified any cause to include requirements to monitor inputs and outputs in the amended licence.	N/A
Improvements	N/A	The risk assessment of emissions, discharges and impacts has not idientifed a need to include improvement conditions in the amended licence.	N/A
Information	L4.2.1 L4.2.2 L4.3.1	The Licensee will be required to submit an Annual Environment Report and Annual Audit Compliance Report. As the licensee has limits specified for point source emissions to air, it will be required to notify of limit exceedances.	
Licence Duration	N/A	Licence L6265/1983/8 expires on 2 August 2016 and as this is a licence amendment, the licence duration has not been altered.	N/A
Works	L5.1.1 L5.2.1 L5.2.2	The licensee has proposed upgrades to its wastewater treatment system. The key risk is the potential for contamination of soil and groundwater as treated wastewater is discharged to a filtration basin. Refer to the 'discharges to land' section above for the assessment of this risk. A summary of the wastewater treatment upgrade proposal is contained in Appendix A. To enable the licensee to carry out the works, condition 5.1.1 will be included to reference the proposal document that contains relevant information, plans and diagrams. Conditions 5.2.1 and 5.2.2 require submission of a compliance document.	Application supporting documentation

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
10/11/15	Licensee sent notification of proposed licence changes along with a supporting draft decision document.	1. Licensee advised that its registered address details had changed and provided the address; 2. The Licensee requested an amendment to the hourly production rate limit to align with the plant's actual design capacity of 240 tonnes per hour (tph). This applies to a reference in the 'premises description and licence summary' and condition 1.3.1; 3. The Licensee requested the 'annual period' definition be changed from 30 June to 1 July to align with the financial year i.e. 1 July to 30 June; 4. Change the 'quarterly' definition to 'biannual' to reflect Table 3.2.1; 5. Remove references to 'laterite asphalt' and 'red or green pavement' in Table 1.3.2 with respect to unprocessed RAP specifications (c)(iii). These products have the same characteristics as normal RAP, they simply have different shaped aggregate or colour additive. Main Roads Dept specs do not allow these products in their RAP mixes for their own quality control/aesthetic prurposes. Local Coucils and private customers do not prohibit this type of RAP. These products do not pose any further environmental risk compared with the use of non-laterite/coloured asphalt. Prohibiting these products will	1. Licensee's advice noted. DER updated the licence; 2. DER further clarified this request with the licensee including reference to an email from Boral dated 6 March 2015 that an increase in annual throughput to 250,000 tonnes per year is based on an an hourly production rate of 180 tph. DER notes that doubling the hourly production rate (i.e. 120 tph to 240 tph) may significantly change the risk assessment of emissions, discharges and impacts and had not been assessed as part of this application. The Licensee provided clarification via email on 17 November 2015 that the plant currently operates at 180 tph. Condition 1.3.1 will be corrected to 180 tph. 3. DER modified as per licensee's request; 4. This was an oversight and DER updated the definition. 5. Licensee's advice noted. DER does not object to the request as it does not change the risk of emissions, discharges and impacts and updated the licence; 6. The specific reference to 12 m was retained. To clarify, the alteration of any discharge or emission pipe, channel or chimney through which

Date	Event	Comments received/Notes	How comments were taken into consideration
		limit innovation and potential recycling of these usable products; 6. In Table 2.2.2, should the 'A1' stack height be specified as 'minimum 12 m' or is the actual height required; 7. Removal of air emission point A2. There are a number of silos in the vicinity of the plant, each with a dedicated dust collector/air vent. It is our outstanding these vents are not typically regulated as a point source emission in other licences, as they only discharge displaced air when the silo is being filled. A condition detailing the requirement for silo vents to be within 1 m of the ground is considered appropriate; 8. Change condition 3.1.2 to remove quarterly and annual monitoring and replace with biannual; and 9. Update the premises map in schedule 1 to remove emission point A2 as per previous comment.	waste is or may be discharged into the environment may require approval under Section 53 of the *Environmental Protection Act 1986*. This may include increasing the height; 7. Licensee's advice noted. DER removed the reference to emission point A2 and included condition 2.2.3 which aligns with the licensee's request; 8. Similar to point 4, this was an oversight and DER updated condition 3.1.2; and 9. DER inserted an updated map with point 'A2' omitted in response to the action taken in response to point 7. *Note: Minor updates to the decision document were made where necessary to reflect any licence updates indicated above.*

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

Summary of proposed washbay wastewater treatment upgrade works

The site produces three separate water streams of differing contamination levels:

- contaminated washbay wastewater (subject of this proposal);
- potentially contaminated stormwater captured in the tank farm and filling area; and
- general site stormwater from the yar, parking bays etc.

Diagram 1 below depicts the existing wastewater treatment process for contaminated washbay wastewater.

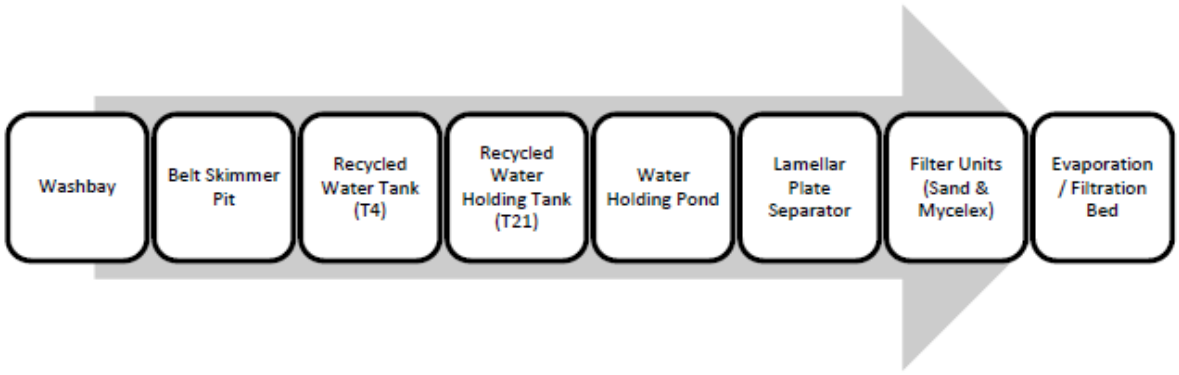

Diagram 1: Existing washbay wastewater treatment process (*Source: Diagram 1 on page 2 of Welshpool Asphalt, Wastewater Treatment Improvement Proposal authored by Boral Resources (WA), March 2015, Version 1.1*)

The proposed upgrades modify the treatment process as depicted in Diagram 2 below.

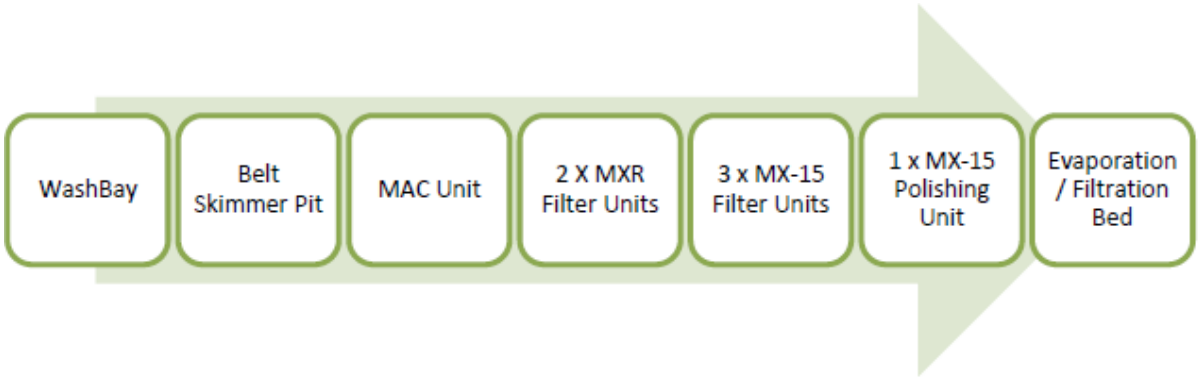

Diagram 2: Proposed washbay wastewater treatment process (Source: Diagram 4 on page 3 of *Welshpool Asphalt, Wastewater Treatment Improvement Proposal authored by Boral Resources (WA), March 2015, Version 1.1).*

Table 1 summarises the key improvements the Licensee believes will be achieved by the upgrades:

Table 1:

Improvement	Outcome
Wastewater segregation	Wastewater originating from the washbay will be segregated from stormwater. This results in smaller volumes of water requiring a high level of treatment and eliminates contamination of clean stormwater.
Pond Exclusion	The on-site Water Holding Pond will be excluded from the wastewater treatment process. This eliminates the risk of the pond overflowing which potentially results in release of contaminated wastewater. The proposed system will be fully enclosed eliminating the risk of unplanned / unauthorised discharges.
Technology and Capacity Upgrade	More effective and greater capacity treatment units will be installed resulting in improved water quality and treatment efficiency. Technology upgrades will provide automatic backwashing, continuous TPH monitoring and fault alarms to ensure effluent quality is maintained.
Increase Kerosene Recovery	New system components will increase Kerosene recovery rates resulting in increased recycling and reuse.

Source: Page 3 of Welshpool Asphalt, Wastewater Treatment Improvement Proposal authored by Boral Resources (WA), March 2015, Version 1.1

The system is designed for a maximum process flow rate of up to 5,000 L/hr which will accommodate two times the maximum flows generated by washdown hoses(i.e. 2,400 L/hr) plus additional future redundancy. The system is designed to achieve a total petroleum hydrocarbon concentration of less than 15 mg/L, total suspended solids less than 30 mg/L and sufactants less than 5 mg/L.

Figure 1 depicts the layout of proposed system upgrades.

Figure 1: proposed washbay wastewater treatment upgrades layout.

Treated wastewater is discharged to the existing evaporation/filtration bed as depicted in Figure 1.