



Decision Document

Environmental Protection Act 1986, Part V

Licensee: Derby Industries Pty Ltd

Licence: L4297/1983/17

Registered office: 6 Short St
FREMANTLE WA 6160

ACN: 009 033 612

Premises address: Talloman Rendering Facility
Lots 113, 114, 115, 116, 117, 118, 119 on Plan 4553 & portion of
Helena Location 20A & Part of the land on Plan 7475
HAZELMERE WA 6056

Issue date: Friday, 25 September 2015

Commencement date: Thursday, 01 October 2015

Expiry date: Sunday, 30 September 2018

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.

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Licensing Officer

Decision Document authorised by: Lauren Trott
A/Manager Licensing



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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 checked="" type="checkbox"/>
	Licence amendment <input type="checkbox"/>	Works Approval amendment <input type="checkbox"/>
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	16	160,000 tonnes per annual period
Application verified	Date: 16 July 2015	
Application fee paid	Date: 31 July 2015	
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 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"/>
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/>	Referral decision No:
		Managed under Part V <input type="checkbox"/>
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"/>	Assessed under Part IV <input type="checkbox"/>
		Ministerial statement No:
Is the Premises within an Environmental Protection Policy (EPP) Area	Yes <input type="checkbox"/>	EPA Report No:
		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

Derby Industries Pty Ltd T/A Talloman operates the Talloman rendering facility, which has been in operation since the 1950's. Derby Industries is a division of the Craig Mostyn Group, an Australian company, involved with protein meals, seafood and meat export and processing. The Talloman rendering facility accepts animal material from abattoirs and meat processing facilities. This material is processed to produce meat and bone meal, feather meal, poultry meal, blood meal and tallow. Talloman is the only rendering facility to operate within Perth's metropolitan area.

The premises is located on land zoned "Industrial Development" with surrounding "Rural Residential" zoned properties and newer "Residential" development areas approximately 800 m to the west and northwest. A number of wetlands are located both on and around the premises including an extensive damp land, classified as "multiple use" management category under the Water and Rivers Commission "Wetlands of the Swan Coastal Plain, 1996". The Hazelmere Lakes are located 1.2 km to the west of the Talloman plant area. Both lakes are System 6 Nature Reserves, protected under the *Environmental Protection (Swan Coastal Plain Lakes) Policy* and are classified as "Resource Enhancement" management category under the Water and Rivers Commission "Wetlands of the Swan Coastal Plain, 1996." A small drain runs past the southern and western edges of the site, which eventually flows into the southern lake. Another wetland is located to the east of the Talloman site and is mapped as part of the Helena River floodplain under a "Multiple Use" management category. The Swan River passes the site about 4 km to the west and the Helena River about 1.5 km to the north.

The process of rendering involves cooking protein by-products such as meat, offal, hair, feathers, blood and bone to produce tallow (animal fat), pet food and stockfeed ingredients and fertilisers. The by-products are sourced from abattoir residues from cattle, sheep, goats, pigs and chicken. Raw material is processed within 15 hours of receipt. This assists in reducing odour as the raw material is fresher when it enters the rendering vessels.

Raw material is processed through a size reduction crusher and then to a preheater to cook the product. A twin screw press extracts fat (tallow) and water (stick water) with solids fed into a drier. The material is milled and screened with the stick water and tallow then separated through decanting. Tallow is further refined from remaining water and solid contaminants through a polishing process. The stick water is concentrated and added back to the solids in the drier for recovery as meal. Blood is coagulated with steam then the water fraction is removed by centrifuge. The remaining blood solids are then dried in a blood dryer.

All processes on-site produce approximately 500,000L of condensate wastewater a day directed to dissolved air flotation (DAF) tank prior to processing through the wastewater treatment plant (WWTP). Washdown water from the rendering area and the truck washdown area are directed to a level controlled sump where it's pumped up to a storage tank, through a separation tank to decant floating fat and through the DAF and WWTP. Separated solids are fed back to the drier. The WWTP consists of a primary anoxic treatment system where wastewater is passed into one of two covered anaerobic lagoons (CAL) for up to 14 days. The water then passes through, a biological nutrient removal (BNR) treatment plant and then to one of two evaporation ponds. There is one final evaporation pond where treated wastewater is either evaporated, recycled or discharged to the Water Corporation Sewer Network.

Air extraction from the Talloman plant occurs via a network of air extraction and ventilation ductwork from sealed process buildings and infrastructure. Air is extracted using three header ducts fitted with water misting sprays each with a large extraction fan, which extracts air from



the condensers, factory air and point source collections, into a humidifier and then through five pipes to the five biofilter beds. One smaller biofilter cell is also present for treating extracted air from the wastewater BNR treatment plant. A flare combusts gases produced from the anaerobic ponds.

Talloman have requested amendment to the licence to increase the nominated throughput from 140,000 tonnes per annum to 160,000 tonnes per annum and to decrease the quantity of odour monitoring required by conditions of the licence. This decision document reviews key emissions and discharges associated with potential increase in throughput. These include potential increase in wastewater generation and potential changes in odour emissions from the premises. This decision document also assesses current odour monitoring and reporting requirements in line with Licensee's request for a review. The licence is granted for duration of 3 years.



4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987*, DEC's Policy Statement - Limits and targets for prescribed premises (2006), 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 L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
General conditions	L1.2.3, L1.3.3	<p><u>Emission Description</u> <i>Emission:</i> Emissions to stormwater from processing areas, solid waste storage area. <i>Impact:</i> Potential contamination of surrounding land and surface water drainage systems such as the wetland areas and a small drain which runs past the southern and western edges of the site, which eventually flows into a significant lake located 1.2 km away. There is potential for impacts on the ecology of surface water and groundwater from the addition of nutrients and other contaminants. <i>Controls:</i> Stormwater falling on the premises drains to a sump before treatment through the wastewater treatment plant. Uncontaminated stormwater is directed away from operational and hardstand areas. These controls reduce the likelihood of impact by preventing potentially contaminated stormwater from entering surrounding water resources.</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Minor <i>Likelihood:</i> Unlikely <i>Risk Rating:</i> Moderate</p> <p><u>Regulatory Controls</u> Condition 1.2.3 has been added to the licence to require the operator to direct uncontaminated stormwater away from the potentially contaminated areas of the premises therefore reducing the volume load on the wastewater treatment system. Condition 1.2.2 replaces condition 15 on previous licence. Condition 1.3.3 requires</p>	-



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Works Approval / Licence section	Condition Number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p>untreated wastewater to be directed to a treatment system prior to discharge into Water Corporation sewer or evaporation ponds or reuse. Solid/ liquid waste is required to be stored within enclosed building, vessel or tanks. Condition 1.3.3 replaces condition 8 of the previous licence.</p> <p>Conditions 13 and 14 from previous licence have not been carried forward. Emission risk from hydrocarbon/chemical storage can be managed under general provisions of the EP Act and <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>.</p> <p><u>Residual Risk</u> <i>Consequence</i>: Minor <i>Likelihood</i>: Rare <i>Risk Rating</i>: Low</p>	
Premises Operation	L1.3.4	<p>By increasing the throughput from 140 000 tpa to 160 000 tpa, Talloman have estimated that on average approximately 34m³ extra of wastewater per day will be produced. This may increase the risk of discharge to the environment through wastewater pond overtopping.</p> <p><u>Emission Description</u> <i>Emission</i>: Spillage from wastewater storage ponds. <i>Impact</i>: Contamination of surrounding land and surface water drainage systems from wastewater pond overflow. <i>Controls</i>: Talloman have increased the amount of water reused from the evaporation pond for the condensers, processing areas and biofilters. Talloman report that the wastewater treatment system (inclusive of the DAF, anaerobic lagoons and evaporation ponds) has a capacity of receiving an extra 3m³ per day while maintaining a freeboard of 600 m on the evaporation pond. An estimated 34m³ of extra wastewater produced will amount to an increase of <2m³ per hour allowing for at least 1m³ per hour of unused capacity. Talloman have a trade waste licence which allows for a maximum discharge rate of 6 litres (l)/second(s). Over the past 12 months Talloman report to have discharged at an</p>	



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		<p>average rate of 2.3 l/s with a peak of 5.61 l/s in one week in winter. Additionally, increased wastewater reuse for plant operations has resulted in removing the need discharge to sewer for a three month period early in 2015. Additional to these controls, an unused evaporation pond is available for use (approx. 20 000m³) should it be required in an extreme rainfall event.</p> <p><u>Residual Risk</u> <i>Consequence</i>: Minor <i>Likelihood</i>: Unlikely <i>Risk Rating</i>: Low</p> <p><u>Regulatory Controls</u> Condition 1.3.4, which replaces condition 9 of the previous licence, imposes requirements to prevent pond overtopping.</p> <p><u>Residual Risk</u> <i>Consequence</i>: Minor <i>Likelihood</i>: Unlikely <i>Risk Rating</i>: Low</p>	
Emissions general	L2.1.1	Descriptive limits have been set through section 2 of the licence. Condition 2.1.1 requires investigation and exceedance of any limit.	N/A
Emissions to air including monitoring	L2.2.1	See risk assessment for odour emissions for details.	
Point source emissions to surface water including monitoring	N/A	There are no point source emissions to surface water from the premises.	
Point source emissions to	N/A	There are no point source emissions to groundwater from the premises.	



DECISION TABLE			
Works Approval / Licence section	Condition Number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
groundwater including monitoring			
Emissions to land including monitoring	N/A	There are no point source emissions to land from the premises.	
Odour	L1.3.1, 1.3.2, 1.3.5 L2.3.1-L2.3.3	Condition 2 of the previous licence has not been carried forward as other conditions in section 2.3 specify odour management. See Appendix A for details of risk assessment.	General provisions of the <i>Environmental Protection Act 1986</i>
Noise	N/A	Noise has not been reassessed as part of this assessment. Proposed increase in throughput will not result in a change to process or hours of operation. As the previous licence did not impose controls on noise, no specified conditions have been included in this section. The <i>Environmental Protection (Noise) Regulations 1997</i> apply.	<i>Environmental Protection (Noise) Regulations 1997</i> General provisions of <i>Environmental Protection Act 1986</i>
Monitoring general	L3.1.1- L3.1.5	Condition 3.1.1 replaces conditions 19, 20 and 21 of the previous licence. L3.1.2 to L3.1.5 have been included to specify calibration requirements for monitoring equipment, recordkeeping requirements for the duration of monitoring and frequency of monitoring.	



DECISION TABLE			
Works Approval / Licence section	Condition Number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Monitoring of inputs and outputs	N/A	Monitoring requirements have not been reassessed as part of this amendment. As the previous licence did not require monitoring of inputs and outputs no specified conditions have been included in this section.	
Process monitoring	L3.2.1 – L3.2.4	<p>Process gases generated within the process area, raw material receival area enclosures, wastewater BNR treatment plant, DAF plant and anaerobic pond are ducted to biofilter prior to discharge to atmosphere. The risk assessment is outlined in DER's assessment and decision making detailed in Appendix A.</p> <p>Condition 2.2.1 replaces condition 1 of the previous licence.</p> <p>Condition 3.2.1 incorporates requirements from condition 16 and 17 of the previous licence. Justification for the reviewed monitoring requirements is detailed in Appendix A.</p>	
Ambient quality monitoring	L1.3.2-L1.3.3, L3.3.1	<p><u>Emission Description</u> <i>Emission:</i> Emissions to groundwater due to seepage from wastewater treatment ponds, solid/ liquid waste storage area. Wastewater from activities generated on the premises is expected to be nutrient rich. <i>Impact:</i> The depth to groundwater measured within 200 m from the premises is approximately 2 meters below ground level (mbgl). A number of wetlands are located both on and around the premises including an extensive damp land, classified as "multiple use" management category under the Water and Rivers Commission "Wetlands of the Swan Coastal Plain, 1996". There is potential for localised impact and potential alteration of the environment. <i>Controls:</i> Anaerobic lagoons and evaporation ponds are lined to achieve permeability of less than 1×10^{-9} m/s. Solid/ liquid waste storage is undertaken on a bunded hardstand area.</p>	



DECISION TABLE			
Works Approval / Licence section	Condition Number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p><u>Risk Assessment</u> <i>Consequence:</i> Minor <i>Likelihood:</i> Unlikely <i>Risk Rating:</i> Moderate</p> <p><u>Regulatory Controls</u> L1.3.2 added to specify infrastructure requirements. L1.3.3 specifies storage requirements for waste. L3.3.1 retains groundwater quality monitoring requirements specified in condition 18 of previous licence.</p> <p><u>Residual Risk</u> <i>Consequence:</i> Minor <i>Likelihood:</i> Rare <i>Risk Rating:</i> Low</p>	
Meteorological monitoring	N/A	OSC 3.4.1 and OSC 3.4.2 have been added to the licence. For justification of meteorological monitoring conditions refer to DER's assessment and decision making detailed in Appendix A.	
Improvements	IR1 and IR2	<p>IR1 has been included to facilitate ongoing effective odour management of the rendering processes. IR 2 has been included to facilitate ongoing effective management of the odour control equipment.</p> <p>For justification of IR1 and IR2 refer to DER's assessment and decision making detailed in Appendix A.</p>	
Information	L5.1.1 – L5.1.4 L5.2.1 – L5.2.3	<p>Conditions 5.1.3 and 5.2.1 replace conditions 28 of the previous licence and condition 5.1.4 replaces condition 27(iv).</p> <p>Condition 5.2.2 replaces conditions 22, 23, 25 and 26. The reporting content has been amended. OSC 5.2.3 replaces conditions 27 (i), (ii) (iii).</p>	



DECISION TABLE			
Works Approval / Licence section	Condition Number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Licence Duration	N/A	The Licence duration has not been extended as a result of this amendment.	



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
N/A	Application advertised in West Australian (or other relevant newspaper)	-	-
10/9/2015	Proponent sent a copy of draft instrument	Comments received on Monday 21 September 2015. No changes suggested to draft conditions.	No changes required.



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

Background

Licence L4297/1983/16 restricted premises throughput to 140,000 tonnes per annum. Talloman have requested an increase in throughput to 160,000 tonnes per annum. The premises currently has a design capacity to process up to 250 000 tonnes per annual period. No new works or changes to infrastructure are required to achieve the increase in throughput to 160,000 tonnes per annum.

Talloman are seeking the increase to 160,000 tonnes per annum to accommodate additional volume over the next 3 years based on Western Australia's anticipated growth in meat production for export and domestic markets. The increased throughput will not require changes to any rendering processes or raw material storage. It is expected that the increased weekly throughput will primarily occur in the winter months where throughput volumes have typically been lower due to changes in operations at abattoirs (reduced shut-down periods) that supply raw material to premises.

Key issues considered in DER's decision making for assessing potential emissions and discharges relating to increase in throughout include:

- Introduction of odour management initiatives at the premises since 2011 (as detailed in the risk assessment);
- Steady decrease in complaints since 2006 while the number of nearby residences has increased;
- Compliance history of premises; and
- Review of odour monitoring data.

Emission Risk Assessment

Emission Description

Emission: Key emissions from the premises include odorous emissions to air. Under normal operating conditions odour may potentially be emitted from raw material receival area, process buildings, wastewater treatment facilities and biofilter cell surface. Fugitive emissions of odour may emanate from air escaping from buildings, the receival areas and from the wastewater treatment tanks and ponds.

Impact: Nearest sensitive receptor is 800 m away from the premises The Premises has history of complaints. Odour emissions can lead to discomfort, stress and lowering of life quality for nearby residences. Odour emissions from the premises can have a localised impact, potential alteration of environment through reduction in air quality/ amenity and may have potential health impacts.

Controls:

Odour emissions control strategy on the premises comprises of a network of air extraction and ventilation ductwork from sealed process buildings and infrastructure. Three header ducts, fitted with water misting sprays each with a large extraction fan, extract air from the condensers, factory air and point source collections, into a humidifier and then through five pipes to the five biofilter beds.

Odour emitted from wastewater is abated by:

- a flare which combusts gases produced from the anaerobic ponds; and
- two small biofilters cells that treat extracted air from the wastewater BNR treatment plant.

In addition to odour control equipment odour emissions are further reduced through management practices including:

- acceptance of refrigerated raw material only;
- all raw material being processed within 15 hours of being received; and
- twice daily checks of bio-filter system, misting spray pumps, evaporative cooling system, ducting, raw material, buildings and surrounds (drains, sumps, valves, pumps).



Odour control improvements implemented at the premises since 2010 include:

- 2011: Increased point source extraction installed in the poultry cooking area. The red meat raw material area was partitioned from the blood processing area to reduce the potential for fugitive emissions.
- 2012: Point source extraction installed in the blood processing area and storage tank to reduce potential for fugitive emissions. The BNR treatment plant sludge holding tank cover was replaced and air diffusion system refurbished increasing the efficiency of the wastewater system.
- 2013: The Bio-filter bed levels were topped up and point source extraction was installed in the red meat raw material area. Improvements were also made to the bio-filter sprays and locations to improve efficiency. Upgrades to misting sprays have improved humidification by 20% in the last 12 months.
- 2014: The introduction of a new DAF in the main plant recovers any solids from the wastewater to recycle back into the process and has eliminated the need to process wastewater through the decanter and to store and remove spadeable waste from the site.
- 2015: Installation of continuous monitoring of bio-filter inlet air to monitor relative humidity and temperature.

Risk Assessment

Consequence: Moderate

Likelihood: Possible

Risk Rating: Moderate

Regulatory Controls

Monitoring results from March 2012 to September 2014 show that odour emission levels range from 108 odour units (ou) to 1449 ou from the main biofilter cells and 64 ou to 181 ou from the wastewater biofilter surface. Talloman has reported to have received six complaints in this period. This is significant decrease in complaints numbers compared to previous years (i.e. 2006 – over 150 complaints, 2007 – over 50 complaints).

Odour emissions from the premises are not expected to increase due to proposed increase in throughput of additional 20, 000 tpa as:

- hours of operation are not expected to change;
- no changes are required to the rendering process and raw material storage times;
- increase in throughput is expected to occur in winter months when optimal operation of the odour control system is known to be less problematic as it is easier to maintain optimal temperature and relative humidity;
- the volume of air processed through the odour control system is not expected to change;
- The introduction of CEMS infrastructure for the monitoring of temperature, RH and pressure at all inlets of the main biofilter will support Talloman's internal monitoring checks of the main biofilter system.

Odour monitoring requirements have been reviewed. Standard outcome based condition 1.2.2 imposes the maintenance of the pollution control equipment. Condition 1.3.1 and 1.3.2 require that raw material is rendered within 15 hours and is stored within enclosed vessels, buildings and tanks. Condition 1.3.3 requires solid waste to be stored within enclosed vessels, buildings and tanks.

Condition 2.2.1 stipulates that air emissions from raw material receipt area enclosures, process area, DAF plant and wastewater BNR treatment plant once treated through biofilters are authorised only when done so in accordance with licence conditions.



Condition 2.3.1 requires all raw material receival areas and processing rooms to be maintained under negative pressure to minimise fugitive odour emissions. Conditions 2.3.2 and 2.3.3 carry forward requirements of condition 4 and 5 respectively from previous licence. Unreasonable odour emissions from the premises can be regulated using general provisions of the EP Act 1986.

Process monitoring requirements have been imposed through condition 3.2.1 of odour concentration at the biofilter surface; and airflow, volumetric flow rate and pressure at the main biofilter inlet to provide an understanding of how well the biofilter is functioning. Parameters monitored at the main biofilter will also be monitored at the ductwork fans and the WWTP biofilter inlets so that an awareness of odour control equipment efficiency can be maintained. This monitoring will enable Talloman to determine effectiveness of odour control equipment.

Meteorological monitoring requirements have been imposed through condition 3.4.1 and 3.4.2. to aid improvement in odour management practices with the objective of minimising recurrence in similar meteorological conditions.

Condition 1.3.5 restricts the premises throughput to 160,000 tonnes in any 12 months period. Improvement conditions that require an Odour Management Plan and Biofilter Management Plan to be developed and implemented have been imposed through condition 4.1.1. DER will review licence conditions to determine suitability of control measures upon submission of the Odour Management Plan and Biofilter Management Plan and once considerable data from continuous emissions monitoring of the biofilter inlet ducts is available.

Risk Assessment

Consequence: Moderate

Likelihood: Unlikely

Risk Rating: Moderate