Government of Western Australia
Department of Environment Regulation

Decision Report

Application for Licence Amendment

Division 3, Part V *Environmental Protection Act 1986*

Applicant:	International Livestock Export Pty Ltd
ACN:	009 400 846
Licence Number:	L7864/2003/4
File Number:	DER2016/001538
Premises:	Broome Common Lots 533 and 535 on Plan 73704 BROOME WA 6725
Date of report:	**Tuesday, 7 February 2017**
Status of Report	**Final**

Table of Contents

Definitions of terms and acronyms

Term	Definition
AACR	Annual Audit Compliance Report
AER	Annual Environment Report
ANCA wetland	Nationally significant wetlands identified in *A Directory of Important Wetlands in Australia.*
Applicant	International Livestock Export Pty Ltd
Category/Categories (Cat.)	categories of prescribed premises as set out in Schedule 1 of the EP Regulations
Compost	means an organic product that has undergone controlled predominantly aerobic and thermophilic biological transformation through the composting process to achieve pasteurisation and reduce phytotoxic compounds, and achieve a specified level of maturity[1].
Composting	means the process whereby organic materials are microbiologically transformed under controlled predominantly aerobic conditions to achieve pasteurisation and a specified level of maturity.
DER	Department of Environment Regulation
Decision Report	this document
Delegated Officer	An officer under section 20 of the EP Act.
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
Freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at its lowest point.
Leachate	means liquid which has drained from composting materials or products including stormwater which has accessed any potentially contaminated areas.
m^3	cubic metres
Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)
Occupier	is defined in the EP Act to mean a person who is in occupation or control of a premises, or part of a premises, whether or not that person is the owner of the premises or part of the premises.
Premises	Broome Common

PM	Particulate Matter
PM_{10}	Used to describe particulate matter that is small than 10 microns (µm) in diameter.
Prescribed Premises	Premises prescribed under Schedule 1 to the EP Regulations
prescribed premises	Premises prescribed under Schedule 1 to the EP Regulations.
Ramsar wetland	Wetlands recognized through the Ramsar Convention as internationally important
Unuathorised Disharge Regulations	*Environmental Protection (Unauthorised Discharge) Regulations 2004* (WA)
Windrows	means horizontally extended piles of material being composted and aerated, achieved by mechanical turning and/or the delivery of air from the base of the windrow.
µg/m^3	micrograms per cubic metre
µg/L	micrograms per litre

[1] The specified level of maturity for compost depends on the intended classification of the product in accordance with Appendix N of AS 4454-2012; that is, pasteurised product, compost, or mature compost

1. Purpose and scope of assessment

DER received an application from International Livestock Export Pty Ltd (the ***Applicant***) to amend the Broome Common (the ***premises***) operating licence L7864/2003/4 to incorporate construction and operation of new stormwater infrastructure and a manure composting pad. This ***Decision Report*** assesses emissions and discharges from operation of the cattle holding pens (stockyards) as well as construction and operation of the proposed stormwater infrastructure upgrades and new composting pad. The manure composting pad will trigger an additional ***prescribed premises category*** in accordance with Schedule 1 Part 1 of the ***Environmental Protection Regulations 1987***, that is, category 67A as outlined in Table 1. As a result of this, new conditions have been added to the licence to manage the risk of emissions associated with new operations.

2. Background

The Applicant has been operating the Broome Common stockyards (as ***Occupier***) since 2003. The premises is located at Lots 533 and 535 on Plan 73704, 5km northeast of the township of Broome. The Broome Common stockyards are used for holding cattle prior to cattle being either exported overseas via cattle ships out of the Port of Broome or trucked south to abattoirs servicing the domestic market.

Table 1: Prescribed Premises Categories

Classification of Premises	Description	*Approved premises production or design capacity or throughput*
55	Livestock saleyard or holding pen: premises on which live animals are held pending their sale, shipment or slaughter	70,000 animals per year
67A	Compost manufacturing and soil blending: premises on which organic material (excluding silage) or waste is stored pending processing, mixing, drying or composting to produce commercial quantities of compost or blended soils.	2,866 tonnes of manure per year

3. Overview of Broome Common

3.1 Infrastructure

The Broome Common facility infrastructure, as it relates to Category 55 and 67A activities, is detailed in Table 2 and with reference to the Site Plan (attached in the revised licence).

Table 2: Broome Common Category 55 and 67A infrastructure (existing and proposed)

Existing Infrastructure	
	Prescribed Activity Category 55
1	Livestock holding pens (stockyards) and associated loading / unloading infrastructure
2	Animal dip
3	Animal carcass trench
Proposed Infrastructure	
	Prescribed Activity Category 55
1	Proposed new stormwater retention pond and drains and existing stormwater pond (to be used for contingency storage)
2	Proposed new groundwater monitoring bores (x 3)
	Prescribed Activity Category 67A
3	Proposed new manure composting pad and associated pumps, pipes and water storage tank
	Secondary Activities
1	Minor fuel and chemical storage

3.2 Operational aspects

Broome Common operates from around April to December in each year (depending on wet season rainfall conditions) and has a maximum throughput of around 70,000 cattle per year. The premises stockyards have a design capacity capable of storing around 5,000 head of cattle at a time prior to either live exporting overseas to Southeast Asia and the Middle East or being transported via trucks to the south west for processing.

Export cattle are delivered by truck to Broome Common for dipping, feeding, watering and resting for a period of two to five days. On arrival at the yards, cattle are dipped in a chemical treatment solution to remove ticks. In addition to the stockyards, Broome Common has around 3,000ha of paddocks for holding excess or unsuitable export cattle until they are ready for transport off site. Deceased cattle carcasses are buried on the premises within a dedicated animal carcass trench. Carcass disposal is limited to a few animals each month. Carcasses are removed from the pens within 12 hours, taken to the 4m deep burial trench and covered with lime and soil immediately. The carcass trench is situated on a high site well above the water table. Cattle fatality numbers and disposal location are recorded throughout the year by the Applicant.

There are no truck wash-down facilities on the premises. Secondary activities on the premises include minor fuel storage within a bunded 5,000L diesel tank and storage of cattle dip chemicals in a dedicated sea container.

3.2.1 Proposed Stormwater Infrastructure Upgrades

The Applicant is proposing to upgrade the stormwater management system servicing the stockyards by constructing a series of new drains connected to a new stormwater evaporation pond. The new stormwater infrastructure will be an improvement on the existing system as it will be located adjacent to the stockyards, and has been sized appropriately to capture incident rainfall captured by the stockyards as well as the new composting pad and the stormwater pond itself. The Applicant is proposing to re-use some of the water captured in the new stormwater pond in the manure composting process. A water balance has been developed to calculate inputs from the catchment area as well as losses to evaporation and re-use. High evaporation rates throughout most of the year in Broome, combined with efficient re-use of captured stormwater in the composting process will ensure an annual net negative water balance, which will allow for annual pond maintenance and will ensure there is adequate storage capacity from year to year. A sediment catchment sump will be constructed to allow suspended solids to settle out prior to entering the stormwater pond. Drains will be cut to channel water from the yards via gravity to the stormwater pond.

3.2.2 Proposed Manure Composting Pad

In order to allow better management of manure generated by cattle on the premises, the applicant is also proposing construct a manure composting pad to enable processing of manure throughout the year. The composting pad will allow more regular removal of manure from the yards, which will reduce the volumes of raw manure stored on the premises and allow the re-use of stormwater captured in the new pond. The end result will be a marketable product that is able to be removed effectively throughout the year as required by customer demand.

The Applicant has committed to commencing monitoring of groundwater quality on the premises to ensure activities from operation of the stockyards and management of associated wastes do not have a negative impact on the environment. At least three new monitoring bores will be sampled on a seasonal basis (twice per year) and analysed for nutrients and other physico-chemical parameters. In addition to this, the Applicant will also undertake sampling of the quality of stormwater captured in the evaporation pond to determine nutrient levels. This will determine whether the stormwater may be suitable for other re-use purposes, such as dust suppression or stock water supply.

The proposed upgrades described above will require some clearing of native vegetation on the premises. Approximately 32 trees will need to be removed for the stormwater pond and composting pad to be constructed.

4. Legislative context

4.1 Part IV of the EP Act

4.2 Contaminated sites

On 24 February 2016, Lot 533 on Plan 73704 was classified as "Possibly contaminated – investigation required" under the *Contaminated Sites Act 2003*. DER notes that although the site has been classified as possibly contaminated, it is still suitable for its current use as a livestock saleyard or holding pen. This classification has been made due to unauthorised waste disposal and possible burial of waste on the premises. An inspection of Lot 533 in January 2016 identified unauthorized disposal of waste materials into a trench in the south east portion of the site. Landfilling is a land use that has the potential to cause contamination, as specified in the guideline 'Assessment and management of contaminated sites' (DER, 2014).

4.3 Other relevant approvals

4.3.1 Planning approvals

The Shire of Broome was contacted on 7 July 2016 to determine planning approval status and seek comments on the proposed infrastructure upgrades. A response from the Shire of Broome was received on 27 July 2016, advising that the land-use activity at Lot 533 on Plan 73704 (Broome Common stockyards), is now considered 'Animal Husbandry - Intensive' under the Shire of Broome's Local Planning Scheme No.6 (LPS 6), and that the premises activities were in existence prior to the introduction of a planning scheme over the subject land.

The Shire of Broome advised that he works as proposed do not represent a form of development or land-use that is exempt from the need for Development Approval under Clause 61 of the *Planning & Development (Local Planning Schemes) Regulations 2015*. Therefore, to facilitate the proposed works (considered upgrades/additions) to the existing land-use; an application for Development Approval for an 'Animal Husbandry - Intensive' land-use was required to be submitted to the Shire of Broome by the ***Occupier***.

International Livestock Export Pty Ltd subsequently submitted a Development Approval application on 12 September 2016, which was subsequently approved by the Shire of Broome on 29 September 2016.

4.4 Part V of the EP Act

4.4.1 Guidance Statements

The overarching legislative framework of this assessment is the EP Act and EP Regulations.

DER Guidance Statements which inform this assessment are:

- Guidance Statement: Regulatory Principles (July 2015)
- Guidance Statement: Setting Conditions (October 2015)
- Guidance Statement: Land Use Planning (October 2015)
- Guidance Statement: Licence Duration (November 2015)
- Guidance Statement: Risk Assessments (November 2016)
- Guidance Statement: Decision Making (November 2016)

4.4.2 Licence amendments

An operating licence for the Broome Common stockyards was first issued in September 2003.

Since that time the licence has only had one administrative amendment, and has been re-issued three times. On the third re-issue, the operation of the premises was reviewed and an Environmental Improvement Condition was included to require a review of the stormwater infrastructure on the premises. This licence amendment application is the result of that review and has resulted in proposed upgrades to improve stomwater and manure management on the premises.

4.4.3 Compliance inspections

The following details have been recorded within the Department's Incident Complaints Management System (ICMS) in relation to inspections performed on the premises since 29/06/2010.

No.	Date	Incident details	Incident Close Out
17163	29/06/2010	Compliance inspection identified non-compliances with the following licence conditions: • Condition G1 (c), in that, the licensee failed to submit an updated premises map with the AER; • Condition G1 (d), in that, the licensee failed to submit the annual audit compliance report to DEC by 1 February 2010; • Condition G3(b), in that, approximately 10 deceased cattle could be seen with the trench exposed to the elements; • Condition W3(c), in that, all manure was not removed offsite by the 15 December as opposed to the required date of 15 November (previous reporting period); and • Condition W3(d), in that, the Licensee did not report volumes of manure removed from the premises at the end of the 2009 reporting period.	Required action to be undertaken by the Applicant. Incident closed on 05/07/2010.
24601	19/04/2012	Compliance inspection identified non-compliances with the following licence conditions: • Condition G1 (a), in that, the licensee failed to submit the annual monitoring report to DEC by 1 February 2012; • Condition G1 (d), in that, the licensee failed to submit the annual audit compliance report to DEC by 1 February 2012; • Section 50(2) of the *Environmental Protection Act 1986*, in that, the licensee is storing a 5000L diesel container in an area that is currently not impervious due to cracks in the structure i.e. floors and walls. It is reasonable to expect that in the event of a spill or leak, diesel would gain access to the environment; and in so gaining access be likely to result in pollution; and • Section 50(2) of the *Environmental Protection Act 1986* in that, the licensee stores unbunded hydrocarbon drums on site. It is reasonable to expect that in the event of a spill or leak, waste oil would gain access to the environment; and in so gaining access be likely to result in pollution.	Required action to be undertaken by the Applicant. Incident closed on 10/02/2014.

4.4.4 Annual Audit Compliance Reports

The Licensee has submitted Annual Environmental Reports (***AER***s) and Annual Audit

Compliance Reports (***AACR***s) every year of operation as required under licence conditions. The Licensee generally provides all required monitoring information, although there have been minor non-compliances noted in previous years. .

4.4.5 Compliance history check

There have been no statutory notices or prosecutions issued by DER in relation to the Broome Common stockyards.

DER has received no complaints in relation to the operation of Broome Common stockyards.

4.4.6 Clearing

Clearing of native vegetation in Western Australia requires a permit from DER unless exemptions apply. Native vegetation includes aquatic and terrestrial vegetation indigenous to Western Australia, and intentionally planted vegetation declared by regulation to be native, but not vegetation planted in a plantation or planted with commercial intent.

A licence amendment application which included a native vegetation clearing permit (as required under Part V of the EP Act) was submitted to DER on 4 May 2016. The applicant proposes to clear up to 2.3 hectares (ha) on Lots 533, 535 and 541 on Plan 73704, Broome, for the purposes of construction of a composting pad and stormwater infrastructure. The environmental impacts of clearing the 2.3ha was assessed in accordance with DER's Regulatory Principles taking into consideration the clearing principles contained in Schedule 5 of the EP Act. The proposed clearing is unlikely to cause any environmental harm and has therefore been authorised.

A copy of the DER Clearing Assessment Report dated 18 November 2016 is included in this Decision Report as Appendix 2.

5. Assessment of operator

A search of DER's Industry Licensing System (ILS) and ICMS has been undertaken to assess the fitness and competency of the Director(s) of the Applicant. Several non-compliances with reporting requirements under licence L8155/2004/2 for the Broome Common stockyards were identified.

No.	Date	Incident details	Incident Close Out
32482	14/2/2014	AER / AACR review identified the following matters: • AER received 14 days late on 14/2/2014; • AACR was provided indicating compliance with licence conditions (signed 5/2/2014) but was received late on 14/2/2014; and • non-compliance with licence condition W3(d), in that the licensee reported volumes and date manure was removed, but did not provide the disposal location.	Letter of Education sent to Licensee on 03/04/2014. Incident closed on 24/04/2014.
36301	19/03/2015	AER / AACR review identified the following matters: • Licence condition 1.3.6 was not complied with during the reporting period. Stock were held in holding pens from March through to November 2014, however, the AER reports manure collections were performed in December 2014 only. There should have been manure collections also performed in June and September 2014. This non-compliance should have been included in the AACR declaration; • Condition 5.1.2 the AER and AACR were received late	Required action to be undertaken by the Applicant. Incident closed on 15/11/2016.

		on 17/3/2015 (due date was 28/1/2015); • Condition 5.1.2 - A recent map was included with the AER depicting location of yards, paddocks, and carcass trench, however, the map did not depict location of dip area or chemical storage area; and • Condition 5.1.2 - the Licensee provided records of volumes of manure removed from the premises ((2,866 tonnes) however disposal location was not reported.	
40218	5/4/2016	AER and AACR review identified the following matters: • The Licensee has reported that they have exceeded the approved design capacity on the licence, which is 70,000 animals per year, by 3,346 animals (total throughputs were reported as being 73,346 animals for the 2015 reporting period); • Condition 5.1.3 - The AACR did not correctly identify all non-compliances that occurred during the reporting period; • Condition 5.2.1 - The AER was submitted 1 day late and did not include: • An updated map of the premises depicting relevant infrastructure; • volumes of manure removed from the premises during the annual period, or the disposal location of any manure removed; and • a summary of any complaints (or lack thereof) received in relation to the premises for the reporting period.	Required action to be undertaken by the Applicant. Incident closed on 24/06/2016.

6. Consultation

The Shire of Broome was consulted to determine if correct planning approvals were obtained and to seek comment on the proposed upgrades to stormwater infrastructure and composting operations (see section 4.2).

7. Location and siting

7.1 Siting context

Broome Common is located approximately 5km from the township of Broome. The nearest residence is just over 1km from the holding pens. The yards are within reasonably close proximity (920m) to the high water tide mark of Dampier Creek, an ANCA Wetland, which flows into Roebuck Bay; a wetland of significant ecological value and listed under the Ramsar Convention on Wetlands of International Importance.

7.2 Residential and sensitive premises

The distances to residential and sensitive receptors are as follows:

Table 3: Receptors and distance from activity boundary

Residential and Sensitive Premises	Distance from Prescribed Activity
Residential premises in Special Use zone (Aboriginal Use)	1,150m, 1,220m, 1,270m, 1,360m, 1,385m, 1,420m and 1,440m northwest of the premises

Sensitive premises in Special Use zone (Caravan Park)	2,070m west of the premises
Rural residential zone (20 residences)	2,080m west of the premises

7.3 Specified ecosystems

The distances to specified ecosystems are shown in Table 4.

Table 4: Specified ecosystems

Specified ecosystems	Distance from Prescribed Premises
ANCA Wetland (Dampier Creek, Roebuck Bay): Nationally significant wetland identified in *A Directory of Important Wetlands in Australia* and Yawuru Nagulagan / Roebuck Bay Marine Park (Department of Parks and Wildlife managed lands and waters)	920m southwest of the premises
Ramsar Wetland (Roebuck Bay): Wetland recognised through the Ramsar Convention as internationally important	6,780m southeast of the premises

7.4 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 5.

Table 5: Groundwater and water sources

Groundwater and water sources	Distance from Premises	Environmental Value
Public Drinking Water Source Area	4,000m	Public water source area proclaimed under the *Country Areas Water Supply Act 1947*
Groundwater is considered fresh to brackish	Depth to groundwater at Broome Common is estimated to fluctuate seasonally between 3 to 5m below ground level. There are two existing groundwater bores on the premises that are used to abstract water for stock purposes. As part of the proposal to upgrade the stormwater pond and commence composting of manure onsite, the Licensee is proposing to install an additional two bores to monitor groundwater quality up hydraulic gradient and down hydraulic gradient of the new infrastructure.	Water is not used for potable purposes, but is used for stock water supplies. Groundwater system linked to marine ecosystem with Dampier Creek located 920m southwest of the premises.

7.5 Other site characteristics

The locations of other receptors are shown in Table 6.

Table 6: Other landscape features, relevant factors or receptors

Other receptors or areas of concern	Location
Broome North wastewater treatment plant	Located 1,200m directly east of the prescribed premises

7.6 Soil type

Soil types commonly encountered in the localised area are described as sand plain with longitudinal sand dunes and some active drainage-ways: chief soils are red earthy sands (locally known as “Pindan soils”, with dunes and hummocks of red sands.

7.7 Meteorology

7.7.1 Wind direction and strength

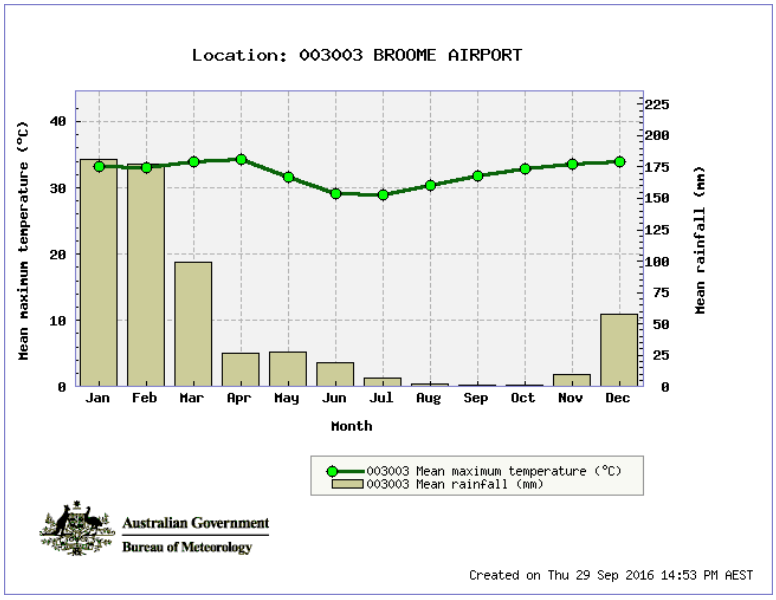
The average annual wind direction in Broome blows from the west for around 45% of the year (predominantly in the afternoons), from the east for around 25% of the year, and from the southeast for around 20% of the year (predominantly in the mornings, and during the dry season). Wind speeds of up to 30km per hour can be experienced throughout the year.

7.7.2 Regional climatic aspects

Broome has a semi-arid climate. Like most parts of the Australian tropics, it has two seasons: a dry season and a wet season. Broome is susceptible to tropical cyclones and these, along with the equally unpredictable nature of summer thunderstorms, play a large part in the erratic nature of the rainfall received in the area. A high average daily evaporation rate of around 7.6mm per cubic metre (annual average) is experienced in the Broome region

7.7.3 Rainfall and temperature

The dry season is from April to November with nearly every day clear and maximum temperatures around 30 °C. The wet season extends from December to March, with maximum temperatures of around 35 °C, rather erratic tropical downpours and high humidity. Broome's annual rainfall average is 611 mm, 75% of which falls from January to March.



8. Risk assessment

8.1 Confirmation of potential impacts

Identification of key potential emissions, pathways, receptors and confirmation of potential impacts are set out in Tables 7 and 8 below. Tables 7 and 8 also identify which potential emissions will be progressed to a full risk assessment. Some potential emissions/impacts may not receive a full risk assessment where a potential receptor or pathway cannot be identified or where the emission/impacts are regulated under a Ministerial Statement.

Table 7: Identification of key emissions during construction

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source (see Section 9 for infrastructure references)	**Construction, mobilisation and positioning of infrastructure**	**Construction of stormwater drainage infrastructure (pond and drains) and composting pad**	Dust emissions form operation of earthmoving equipment while excavating and moving construction materials.	Residential premises in Special Use zone (Aboriginal Use) – located 1,150m to the north west Sensitive premises in Special Use zone (Caravan Park) located 2,070m west-northwest Rural residential zone (20 residences) located 2,080m west-northwest	Air / wind dispersion	Amenity	No	Dust emissions during construction will be visually monitored and managed by the addition of water to materials as required via a water cart to keep materials sufficiently damp to prevent dust emissions.
			Noise form operation of earth moving equipment.			Amenity	No	Noise emissions from operation of earth moving equipment are not expected to exceed the *Environmental Protection (Noise) Regulations 1997*. The construction period is expected to last for a few weeks only. Sufficient buffer distances to sensitive receptors exist; therefore, it is unlikely that dust or noise emissions during the construction period will impact on receptors

Table 8: Identification of key emissions during operation

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source (see Section 9 for infrastructure references)	**Operation of stockyards** **(category 55 operations)**	**Holding and loading / unloading of cattle).**	Odour	Residential premises in Special Use zone (Aboriginal Use) – located 1,150m to the north west ANCA Wetland (Dampier Creek, Roebuck Bay): Nationally significant wetland identified in A Directory of Important Wetlands in Australia and Yawuru Nagulagan / Roebuck Bay Marine Park (Department of Parks and Wildlife managed lands and waters) located 920m	Air / wind dispersion	Public health impacts and amenity	Yes	The operation of Broome Common occurs from April to December in each year. During the operating season, approximately 75,000 cattle will pass through the stockyards, producing around 2,866 tonnes of manure per year, which will be composted on the premises hardstand. The generation of odour, noise, dust, solid waste and leachate as a result of these operations has the potential to impact the surround environment and sensitive receptors, if not managed appropriately.
			Noise					
			Dust					
			Leachate (from wastes produced on the premises such as manure)		Direct infiltration into soils. Direct overland flows to surface water. Infiltration down through soils to groundwater	Ecosystem health:		
		Dipping of cattle in the chemical dip	Leachate, overflows from the dip.	ANCA Wetland (Dampier Creek, Roebuck Bay): Nationally significant wetland identified in A Directory of Important Wetlands in Australia and Yawuru Nagulagan / Roebuck Bay Marine Park (Department of Parks and Wildlife managed lands and waters) located 920m southwest of the premises	Direct infiltration into soils. Infiltration down through soils to groundwater.	Ecosystem health: Potential contamination of soils, surface water, and groundwater with chemicals from the dip and storage infrastructure.	Yes	On arrival at the yards, cattle are dipped in a chemical treatment solution to remove ticks. Discharges of dip treatment chemicals during the dipping process may occur if appropriate infrastructure, storage and handling controls are not maintained during operations.

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
		Disposal of animal carcases	Odour	Residential premises in Special Use zone (Aboriginal Use) – located 1,150m to the north west ANCA Wetland (Dampier Creek, Roebuck Bay): Nationally significant wetland identified in A Directory of Important Wetlands in Australia and Yawuru Nagulagan / Roebuck Bay Marine Park (Department of Parks and Wildlife managed lands and waters) located 920m southwest of the premises	Air / wind dispersion	Odour has the potential to impact amenity and wellbeing.	Yes	The operating season for Broome Common is from April to December in each year. Around 30 to 50 carcasses are disposed of to the dedicated animal carcass pit on the premises each year. Emissions of odour may be generated from inadequate burial practices and leachate may have impacts if the carcass pit does not have a sufficient separation distance to groundwater and / or surface water receptors.
			Leachate		Direct infiltration into Infiltration down through soils to groundwater	Ecosystem health: Potential contamination of soils, surface water, and groundwater		
		Generation of potentially contaminated stormwater	Contaminated stormwater chemicals from the dip and manure storage infrastructure.	ANCA Wetland (Dampier Creek, Roebuck Bay): Nationally significant wetland identified in A Directory of Important Wetlands in Australia and Yawuru Nagulagan / Roebuck Bay Marine Park (Department of Parks and Wildlife managed lands and waters) located 920m southwest of the premises	Direct infiltration into soils. Seepage through near-surface soils to surface water. Direct overland flows to surface water. Infiltration down through soils to groundwater	Ecosystem health: Potential contamination of soils, surface water, and groundwater	Yes	Stormwater falling on the saleyards and composting pad may become contaminated with nutrients from cattle manure. The annual operating period at Broome Common occurs from April to December in each year (during the dry season) which minimises potential for generation of contaminated stormwater, however, approximately 25% of the average annual rainfall occurs during the operating season (around 150mm of rain). This has the potential to impact on the adjacent environmental receptors.

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
	Composting of manure (category 67A operations)	**Stockpiling and turning of manure / compost product**	Odour	Residential premises in Special Use zone (Aboriginal Use) – located 1,150m to the north west	Air / wind dispersion	Odour has the potential to impact amenity and wellbeing.	No	Sufficient buffer distances to sensitive receptors exist; therefore, it is unlikely that odour emissions from the composting activities will impact on residential premises.
		Compost hardstand	Leachate	ANCA Wetland (Dampier Creek, Roebuck Bay): Nationally significant wetland identified in A Directory of Important Wetlands in Australia and Yawuru Nagulagan / Roebuck Bay Marine Park (Department of Parks and Wildlife managed lands and waters) located 920m southwest of the premises	Direct infiltration into soils. Seepage through near-surface soils to surface water. Direct overland flows to surface water. Infiltration down through soils to groundwater	Ecosystem health: Potential contamination of soils, surface water, and groundwater	Yes	Infrastructure controls will be specified to ensure the risk of discharges to soils, surface water and groundwater are managed. Controls are required to ensure appropriate protection of the adjacent sensitive receptors, Dampier Creek and Roebuck Bay.

8.2 Risk Criteria

During the assessment the risk criteria in Table 9 below will be applied to determine a risk rating set out in this section 8.

Table 9: Risk Criteria

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

Likelihood		Consequence		
The following criteria has been used to determine the likelihood of the risk / opportunity occurring.		**The following criteria has been used to determine the consequences of a risk occurring:**		
			Environment	**Public Health* and Amenity (such as air and water quality, noise, and odour)**
Almost Certain	The risk event is expected to occur in most circumstances	Severe	• **on-site impacts**: catastrophic • **off-site impacts local scale**: high level or above • **off-site impacts wider scale:** mid level or above • Mid to long term or permanent impact to an area of high conservation value or special significance^ • Specific Consequence Criteria (for environment) are significantly exceeded	• Loss of life • **Adverse health effects:** high level or ongoing medical treatment • Specific Consequence Criteria (for public health) are significantly exceeded • **Local scale impacts:** permanent loss of amenity
Likely	The risk event will probably occur in most circumstances	Major	• **on-site impacts**: high level • **off-site impacts local scale**: mid level • **off-site impacts wider scale**: low level • Short term impact to an area of high conservation value or special significance^ • Specific Consequence Criteria (for environment) are exceeded	• **Adverse health effects:** mid level or frequent medical treatment • Specific Consequence Criteria (for public health) are exceeded • **Local scale impacts**: high level impact to amenity
Possible	The risk event could occur at some time	Moderate	• **on-site impacts**: mid level • **off-site impacts local scale**: low level • **off-site impacts wider scale**: minimal • Specific Consequence Criteria (for environment) are at risk of not being met	• **Adverse health effects:** low level or occasional medical treatment • Specific Consequence Criteria (for public health) are at risk of not being met • **Local scale impacts:** mid level impact to amenity
Unlikely	The risk event will probably not occur in most circumstances	Minor	• **on-site impacts**: low level • **off-site impacts local scale**: minimal • **off-site impacts wider scale**: not detectable • Specific Consequence Criteria (for environment) likely to be met	• Specific Consequence Criteria (for public health) are likely to be met • **Local scale impacts:** low level impact to amenity
Rare	The risk event may only occur in exceptional circumstances	Slight	• **on-site impact**: minimal • Specific Consequence Criteria (for environment) met	• **Local scale**: minimal to amenity • Specific Consequence Criteria (for public health) met

8.3 Risk Treatment

DER will treat risks in accordance with the Risk Treatment Matrix in Table 10 below:

Table 10: Risk Treatment

Risk Rating	Acceptability	Treatment
Extreme	Unacceptable.	Risks will not be tolerated. DER will refuse proposals.
High	Acceptable subject to primary and secondary controls.	Risks will be subject to multiple regulatory controls including primary and secondary controls. This will include both outcome-based and management conditions.
Moderate	Acceptable, generally subject to primary controls.	Risks will be subject to regulatory controls with a preference for outcome-based conditions where practical and appropriate.
Low	Acceptable, generally not requiring controls beyond the proponents controls.	Risks are acceptable and will generally not be subject to regulatory controls.

The emission types have been identified with the pathways and receptors in Table 13 below.

8.4 Risk Assessment – Odour (Operation)

8.4.1 General hazard characterisation and impact

Odour emissions may be generated from the Broome Common yards as a result of manure accumulation, storage, and handling. The composting of manure may also generate odours. There is the potential for cumulative odour emissions from the operations combined with the adjacent Broome North WWTP.

8.4.2 Criteria for assessment

There are no set threshold or concentration criteria for odour assessment. Under section 49(5) of the EP Act, it is an offence to emit or cause to be emitted, an unreasonable emission from any premises. An unreasonable emission is defined in the EP Act (section 49(1)) as an emission or transmission of noise, odour or electromagnetic radiation which unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person.

8.4.3 Proponent controls

Manure will be regularly removed from the holding yards for composting on the premises compost pad. Manure will be rowed, watered and turned to facilitate the composting process. A dedicated compost turner will be purchased for turning compost and a trickle irrigation system will be constructed to allow daily addition of recycled stormwater to the compost rows. This process will significantly reduce the volume of raw manure on the premises and the breakdown of manure via aerobic digestion will result in reduced odours coming from manure.

8.4.4 Key findings

The Delegated Officer has reviewed the information regarding the odour impacts from the premises and has found:

1. *Winds are likely to blow from the east and south east in the mornings at around 10-20km/hr and west in the afternoons at up to 30km/hr, which are not expected to create a direct pathway on the closest residential receptor located 1,150m to the northwest.*
2. *Proponent controls are based on the appropriate storage and handling of waste materials.*

8.4.5 Consequence

Based upon the possibility of winds blowing from the southeast for around 20% of the time and from the east around 25% of the time, the Delegated Officer has determined that the impact of odour emissions from Broome Common yards could conceivably impact amenity for short periods of time to a small population. Adjacent receptors include a residential premises located 1,150m to the northwest, a caravan park located 2,070m to the west-northwest and a rural residential area 2,080m to the west-northwest. Therefore, the Delegated Officer considers the consequence to be **minor.**

8.4.6 Likelihood of consequence

Based upon the location of the premises the Delegated Officer has determined that as a result of adequate separation distance between the Broome Common yards and adjacent receptors, the likelihood of odour emissions impacting receptors will be rare. Therefore, the Delegated Officer considers the consequence to be **rare**.

8.4.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above through the Risk Matrix (Table 9) and determined that the overall rating for the risk of odour on sensitive receptors during operation is **low**.

8.5 Risk Assessment - Noise (Construction and Operation)

8.5.1 General hazard characterisation and impact

Noise during construction will be generated by earth moving machinery (excavator, grader, roller, water cart) during the construction period, which is expected to last for a few weeks. Noise is also generated during normal operations onsite including noise from the cattle in pens, as well as from trucks accessing the premises to load and unload cattle.

8.5.2 Criteria for assessment

The Applicant has a statutory responsibility to comply with the *Environmental Protection (Noise) Regulations 1997* at all times.

8.5.3 Proponent controls

Noise emissions during construction and operation will be generated by machinery and cattle. Due to zoning of this premises as General Rural and the sufficient separation distances from nearest sensitive receptors noise emissions are not expected to be significant and therefore no controls have been proposed.

8.5.4 Key findings

The Delegated Officer has reviewed the information regarding the noise impacts from the premises and has found:

1. *Adequate separation distance to nearest receptors is the main control for ensuring noise emissions from the premises do not impact neighbouring residences.*
2. *Noise emissions as a result of construction and operation of proposed new infrastructure are not expected to be appreciably different to noise emissions from current operations. The applicant has not received any complaints since commencing operations in 2003.*

8.5.5 Consequence

Overall noise levels from the Broome Common yards are likely to be below the assigned noise level defined in the *Environmental Protection (Noise) Regulations 1997*. No complaints have been received regarding noise in the last 24 months. Given the types of noise likely to be encountered and the rural nature of the surrounding area, the consequence has been assessed as insignificant.

Based upon history of operations and appropriate separation distances, the Delegated Officer has determined that the impact of noise will not be detectable. Therefore, the Delegated Officer considers the consequence to be **slight**.

8.5.6 Likelihood of consequence

Due to the separation distance between the Broome Common yards and adjacent receptors, the Delegated Officer has determined that the likelihood of noise impacts at the nearest sensitive receptor is unlikely to occur.

Therefore, the Delegated Officer considers the consequence to be **unlikely**.

8.5.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above through the Risk Matrix (Table 9) and determined that the overall rating for the risk of noise on sensitive receptors during operation is **low**.

8.6 Risk Assessment - Dust (Operation)

8.6.1 General hazard characterisation and impact

Dust emissions during construction may be generated by earth moving equipment while excavating, stockpiling and moving materials onsite. The construction period is expected to last for a few weeks. Dust during operations can also be generated by vehicle movements on the premises and by movement of animals within the holding pens. The activity of composting manure may also generate dust if the material is allowed to dry. Dust has the potential to impact public amenity and public health. Long-term repeated exposure to dust is much more detrimental than sporadic short-term exposure.

8.6.2 Criteria for assessment

Fugitive dust can be assessed against air quality standards set for the protection of health. Amenity impacts can also be assessed as to whether the emission unreasonably interferes with the health, welfare, convenience, or comfort of anyone at the receptor locations.

8.6.3 Proponent controls

Dust emissions during construction will be visually monitored and managed by the addition of water to materials as required via a water cart to keep materials sufficiently damp to prevent dust emissions. Dust generated by cattle movements within the holding pens is managed via a sprinkler system throughout the pens. Composting of manure will be a wet process via the regular addition of recycled stormwater to assist in the breakdown process.

8.7 Key Findings

The Delegated Officer has reviewed the information regarding the dust impacts from the premises and has found:

1. *The Applicant has adequate and existing controls to manage dust during operations.*

8.7.1 Consequence

Dust emissions impacting adjacent receptors may cause impacts to amenity for short periods to a small population. Based upon the nature and period of construction works to be completed as well as the normal operating environment at Broome Common, the Delegated Officer has determined that dust emissions may cause impacts to amenity of adjacent populations for short periods to a small population. Therefore, the Delegated Officer considers the consequence to be **minor**.

8.7.2 Likelihood of consequence

Taking into consideration the design capacity of the Broome Common yards, the proposed management measures, and meteorological data, significant dust generation beyond the premises boundary is not expected. The Delegated Officer considers the consequence to be **rare**.

8.7.3 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above through the Risk Matrix (Table 9) and determined that the overall rating for the risk of dust emissions impacting on sensitive receptors during operation is **low.**

8.8 Risk of Contaminated Stormwater and Leachate (Operation)

8.8.1 General hazard characterisation and impact

There are no point source emissions to land, surface water, or groundwater associated with the operation of the Broome Common yards. There is the potential for impacts to surrounding soils, surface water, and groundwater from discharges should stormwater become contaminated from activities on the premises. Nutrients in cow manure (such as nitrogen and phosphorus) are highly soluble in water. Any stormwater falling on the holding pens or composting pad will become contaminated with nutrients, and possibly weeds. The operation of the cattle dip may also result in dip chemicals being discharged to the environment, from inappropriate storage or from leaks or overflows from the dip itself.

8.8.2 Criteria for assessment

The *Australian Drinking Water Guidelines* (2011) and the freshwater aquatic ecosystem protection guidelines (ANZECC & ARMCANZ 2000).

8.8.3 Proponent controls

The current stormwater management infrastructure has been identified as being inadequate for mitigating risks of discharging potentially contaminated stormwater to the surrounding environment. The Applicant is proposing to upgrade the current system by constructing infrastructure outlined in Table 11 to reduce the risk of nutrient rich stormwater infiltrating to soils and groundwater or discharging to surface water. Additionally, a composting pad will be constructed to manage manure generated during operation of the premises, also outlined in Table 11. The proponent has also committed to installing three groundwater monitoring bores to detect any impacts to groundwater from the operation of the premises.

Table 11: Proposed proponent controls to minimise infiltration to groundwater and discharge to surface water (construction works)

Infrastructure	Description
Stormwater retention pond to capture runoff from livestock holding pens and composting pad	Construction of stormwater retention / evaporation pond with the following design parameters: • Minimum storage capacity of 12,194.5m^3; • operated to maintain a 500mm freeboard; • 300mm clay liner (2 x 150mm compacted layers) meeting maximum permeability of 1 x 10^{-9}m/s; • Stockyards drain to perimeter catchment drains which flow into the stormwater pond. A runoff diversion bund will be constructed across the "top" end of the yards to divert clean stormwater away from the saleyards and composting pad; • Stormwater pond and compost pad bunded to prevent inflow of runoff from surrounding areas; • sediment trap to collect suspended solids and allow for some settlement of particles in runoff prior to entering stormwater pond; and • Surface water monitoring from the stormwater pond to determine concentration of nutrients in the pond , which will inform risk posed by storage and re-use of stormwater within the pond.
Manure composting pad	Construction of manure composting pad with the following design parameters: • 70 x 30m compacted hardstand pad that is bunded and has a minimum fall of 2% that allows drainage of leachate into proposed stormwater evaporation pond via a drain; • 300mm clay liner (2 x 150mm compacted layers) meeting maximum permeability of 1 x 10^{-9}m/s; and • Pumps, pipeworks and water storage tank to enable water stored within stormwater pond to be re-used in the composting process. Water storage tank to be located on composting pad.
Groundwater monitoring bores	• Groundwater monitoring (for nutrients) will be performed at least twice per year from three new groundwater bores to detect any potential leachate from operations on the premises; • monitoring bores are located in suitable areas to enable detection of potential leachate from Premises waste storage infrastructure • monitoring bores to be constructed by 30 September 2017.

The Applicant will continue to implement the following controls to manage the environmental risks presented by stormwater and leachate:

Table 12: Existing controls to minimise infiltration to groundwater and discharge to surface water during operations

Infrastructure	Description
Livestock saleyard pens	• Operating period: operation of the Broome Common yards occurs in the dry season (April to December in each year), minimising the potential for generation of contaminated stormwater; and • Manure is regularly removed from holding pens via a front end loader and tip truck to

Infrastructure	Description
	reduce build-up and risk of contamination of stormwater and groundwater. Manure will be transferred from pens to the composting hardstand adjacent to the yards.
Dipping of cattle in the animal dip	• Operating period: operation of the Broome Common yards occurs in the dry season (April to December in each year), minimising the potential for spills / overflows from the chemical dip as a result of rainfall inflows; • Animal dip chemicals are stored in dry form in a sea container and all liquid chemical from the animal dip is pumped to a storage tank for the duration of the wet season (while yards are closed); and • The animal dip is constructed of concrete and is designed such that splash barriers and drainage infrastructure prevents any discharges of the dip chemicals to the environment.
	• In the event of an animal fatality, carcasses are removed from stockyards within 12 hours and disposed of at the dedicated animal carcass trench on the premises, or at an authorised facility; • Animal carcass trench is located at least 300mm away from watercourses, 50m away from nearest property and a separation distance of at least 2m is maintained between groundwater table level and bottom of the trench; and • Carcasses disposed of at the animal carcass trench are covered with 500mm of soil (immediately).

8.9 Key Findings

The Delegated Officer has reviewed the information regarding the stormwater and leachate impacts from the premises and has found:

1. *All stormwater generated on the premises will be collected and stored in appropriate infrastructure.*
2. *Leachate from composting operations will be contained on the compacted hardstand composting pad that is bunded and has a minimum fall of 2% allowing drainage of leachate into proposed stormwater evaporation pond.*
3. *The operating season of the Premises (during dry season only) will reduce potential for generation of contaminated stormwater.*
4. *Groundwater monitoring bores will be installed by 30 September 2017 to allow detection of any potential impacts from contaminated stormwater and / or leachate seepage to groundwater.*

8.9.1 Consequence

Contaminated stormwater and leachate emissions can result in a potential or actual alteration to the environment, impacting the health of ecosystems. Such emissions have the potential to disrupt ecological processes, affect the aesthetic appeal of waters, and cause eutrophication. Potential contamination of soils, surface water, and groundwater may occur as a result of discharges of contaminated waters during operations.

The Delegated Officer has considered the normal operating conditions at Broome Common, along with the nature and volume of wastes produced and the location of premises in terms of adjacent sensitive ecological receptors. The Delegated Officer considers the consequence of emissions of contaminated stormwater and leachate to be **moderate**.

8.9.2 Likelihood of consequence

Taking into consideration the design capacity of the Broome Common yards, as well as location of the yards and adjacent sensitive receptors, meteorological data and the proposed management measures, the Delegated Officer has determined the consequence to be **possible**.

8.9.3 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above through the Risk Matrix (Table 9) and determined that the overall rating for the risk of contaminated stormwater and leachate emissions impacting on sensitive receptors during operation is **medium.**

8.10 Summary of risk assessment and acceptability

A summary of the risk assessment and the acceptability of the risks with treatments are set out in Table 13 below. Controls are described further in section 9.

Table 13: Risk assessment summary

	Emission		Pathway and Receptor	Proponent controls	Impact	Risk Rating	Acceptability with treatment (conditions on instrument)
	Type	**Source**					
1	Odour from the operation of the stockyards and composting facility	Manure, processing compost, carcasses, wastewater, and leachate	Air, moving with direction of wind	Composting occurs on a hardstand, leachate directed to stormwater pond. Management controls	Amenity	Minor consequence Rare likelihood **Low risk**	Acceptable subject to proponent controls conditioned
2	Noise emissions during construction and operation	Civil works; Cattle, Truck and vehicle movements	Air	None specified	Amenity	Slight consequence Unlikely likelihood **Low risk**	Acceptable, generally not controlled
3	Dust emissions from construction activities and from cattle movements and trucks accessing the site during operations	Civil works, Unsealed areas on the premises	Air, moving with direction of wind	Infrastructure and management controls	Amenity and public health	Minor consequence Rare likelihood **Low risk**	Acceptable subject to proponent controls conditioned
4	Land runoff to surface water and infiltration to groundwater of contaminated stormwater and leachate during operations.	Contaminated stormwater, leachate, and wastewater	Stormwater runoff across the premises, overflow from stormwater pond	Infrastructure and management controls	Impacts on water quality and ecosystem health	Moderate consequence Possible likelihood **Medium risk**	Acceptable subject to proponent controls conditioned

9. Determined Regulatory Controls

A summary of the risks with corresponding controls are set out in Table 14. The risks are set out in the assessment in section 8 and the controls are detailed in this section 9. Controls will form the basis of conditions in the licence set out in Attachment 1.

Table 14: Summary of regulatory controls to be applied

		Controls (references are to sections below setting out details of controls)				
		9.1.4 Specified Infrastructure and Equipment Controls	9.1.3 Specified Action for Contaminated Stormwater and Leachate Risk	9.1.2 Specified Action for Dust Risk	9.1.1 Specified Action for Odour Risk	9.1.5 Monitoring
Risk Items (see section 8)	1. Odour from the operation of the stockyards and composting facility	●			●	
	2. Noise emissions during construction and operation	Low risk – No controls required				
	3. Dust emissions from construction activities and from cattle movements and trucks accessing the site during operations	●		●		
	4. Land runoff to surface water and infiltration to groundwater of contaminated stormwater and leachate during operations	●	●			●

9.1 Licence controls

9.1.1 Specified Action for odour risk

- The Applicant is required to ensure that animal carcasses are disposed of to a licensed facility or to the on-site animal carcass trench within 12 hours of their death;
- where carcasses are disposed of on-site:
    - carcasses and waste material are covered with at least 500mm of soil immediately upon deposit; and
    - burial sites are 300m away from watercourses and 50m away from nearest properties;
- manure shall be removed from the holding pens on at least a monthly basis and taken to the premises composting pad for processing or disposed of off-site;
- manure composting operations will reduce volumes of raw manure stored on the premises which will in turn reduce the potential for odour. Conditions have been included on the licence requiring composting activities to be managed such that:
    - regular turning of compost occurs to ensure aerobic conditions are maintained;
    - temperature is maintained between 55 and 65 degrees Celsius for at least three days
    - moisture levels are maintained between 40 to 65 per cent;
    - windrows do not exceed 2m high by 4m wide by 60m long and are separated by at least 4m of clear ground; and
    - leachate is collected and returned to the composting process or diverted to the stormwater retention pond; and
- livestock holding pens must be completely cleaned of manure by no later than 15 December each year (prior to the wet season).

Grounds: The moderate risk of odour comes from the generation of manure and low numbers of animal fatalities experienced at the premises. The Delegated Officer considers that it is appropriate to include conditions to require specific management actions to reduce odours generated by activities on the premises. Conditions 13, 14, 15, 16 and 17 have been added to the licence and specify existing controls currently implemented by the Licensee as well as additional controls to manage composting activities.

9.1.2 Specified Action for dust risk

The Applicant maintains an irrigated water sprinkler system to mitigate dust emissions in the livestock yards where cattle are held. Licence condition 10 refers to this infrastructure and requires it to be maintained in good working order. Additionally, dust from composting will be mitigated by ensuring composting materials are kept sufficiently moist, in turn promoting the breakdown of organic matter. Licence condition 16(c) has been included to specify the required optimum moisture content (between 40 to 65 per cent) for composting materials.

9.1.3 Infrastructure requirements for stormwater and leachate

Licence condition 5 outlines new infrastructure that must be designed and constructed so as to meet the specifications outlined in Table 15:

Table 15: Infrastructure to minimise stormwater and leachate risks (construction works)

Item	Works	Specifications/Drawings
1	Stormwater infrastructure (new stormwater retention pond and associated drainage	Construction of stormwater retention / evaporation pond with the following design parameters: • storage capacity of 12,194.5m^3; • designed / operated to maintain a 500mm freeboard; • 300mm clay liner (2 x 150mm compacted layers) meeting maximum

	system)	permeability of 1 x 10^{-9}m/s; • associated drains to capture runoff from existing livestock saleyards and proposed composting pad; • bunded to prevent inflow of runoff from surrounding areas; and • sediment trap to collect suspended solids and allow for some settlement of particles in runoff prior to entering stormwater pond.
2	Manure composting pad	Construction of manure composting pad with the following design parameters: • 70 x 30m compacted hardstand pad that is bunded and has a minimum fall of 2% that allows drainage of leachate into proposed stormwater evaporation pond via a drain; • 300mm clay liner (2 x 150mm compacted layers) meeting maximum permeability of 1 x 10^{-9}m/s; and • Pumps, pipeworks and water storage tank to enable water stored within stormwater pond to be re-used in the composting process. Water storage tank to be located on composting pad.
3	Groundwater monitoring bores	• 3 x groundwater monitoring bores fit for purpose for the monitoring of groundwater depth and quality; • To be installed and operational by 30 September 2017, and • To be situated in the approximate locations shown in Schedule 4 Groundwater Monitoring Locations Plan. The Licensee shall ensure monitoring bores are located in suitable areas to enable detection of potential leachate from Premises waste storage infrastructure

Licence conditions 9 and 10 outline existing infrastructure and equipment that must be maintained and operated onsite for management of contaminated stormwater and leachate:

Table 16: Existing infrastructure to minimise stormwater and leachate risks

Table 2: Infrastructure and Equipment Controls on the *Premises*		
1	Livestock holding pens	• Draining to stormwater evaporation pond; and • Sprinkler system to mitigate dust emissions
2	Animal dip	• Impervious concrete lined dip; • Splash barriers to prevent splashing of liquid being discharged to surrounding soils; • Exit and holding area post animal dip drains back onto a sump which flows back into dip; • Animal dip chemicals are stored in dry form in a sea container and all liquid chemical from the animal dip is pumped to a storage tank for the duration of the wet season (while yards are closed).
3	Animal carcass trench	• Deceased animals to be removed from pens within 12 hours, disposed of to a 4m deep trench and covered with lime and soil immediately; and • Animal carcass trench is situated on a high site well above the water table.

Grounds: The Delegated Officer considers that the provision, operation, and maintenance of the specified infrastructure is necessary to manage the moderate risk of contaminated stormwater and leachate impacting the environment. Condition 5 has been added to the licence to specify proposed infrastructure and controls that will be constructed. Conditions 9 and 10 have been added to the licence to capture existing infrastructure and controls currently implemented by the Licensee and ensures this infrastructure is maintained in good working order.

9.1.4 Specified actions for contaminated stormwater and leachate risk

- The new stormwater retention pond must be managed such that:
  - a minimum top of embankment freeboard of 500mm is maintained;
  - storm water runoff is prevented from causing the erosion of outer pond embankments;
  - overtopping of the stormwater retention pond does not occur except as a result of

an extreme rainfall event (greater than 1 in 10 year event of 72 hours duration);
    - vegetation and floating debris (emergent or otherwise) is prevented from encroaching onto pond surfaces or inner pond embankments;
    - a fence is kept in place to exclude livestock access to the pond; and
    - no overflow leaves the Premises;
- where carcasses are disposed of on-site:
    - carcasses and waste material are covered with at least 500mm of soil immediately upon deposit; and
    - the number of animal carcasses buried and location of burial is recorded for the duration of the Licence;
- manure shall be removed from the holding pens on at least a monthly basis and taken to the premises composting pad for processing or disposed of off-site;
- composting operations shall be managed such that composting leachate is collected and returned to the composting process or stored in the Premises stormwater retention pond;
- livestock holding pens must be completely cleaned of manure by no later than 15 December each year (prior to the wet season);
- the dip and dipping area must be operated to prevent the loss or overflow of chemicals; and
- liquid chemical must be removed from the dip pit by no later than 15 December each year.

Grounds: The risk of contaminated stormwater and leachate impacting the environment has been assessed as moderate. The Applicant presently has limited ability to control stormwater generation and flow on the premises. The main controls include upgrades to the stormwater management system by constructing a new stormwater retention / evaporation pond and associated drainage infrastructure. Additionally, the ability to compost manure generated by animals on the premises will allow more regular removal of manure form the pens and ensure it is processed on a fit-for-purpose hardstand that will prevent leachate from discharging to the environment. The Delegated Officer considers it appropriate to add operational limits to ensure the stormwater management system and composting infrastructure is constructed and maintained to reduce the risk of unacceptable discharges. Conditions 9, 10, 11, 16(f), 18 and 19 have been added to the licence to specify infrastructure and actions required to be implemented by the Applicant to manage contaminated stormwater and leachate.

9.1.5 Monitoring requirements

The Licensee must maintain accurate and auditable records in relation to the dates and numbers of animals held at the premises and deceased animals disposed of in the animal carcass trench. The Licensee must also monitor and report on composting activities carried out at the Premises, including volumes composted and exported offsite, or alternatively, uncomposted manure that is removed from the premises. Additionally, the Licensee must report on the six-monthly groundwater monitoring performed at the premises.

Grounds: The Delegated Officer considers that reporting is required to ensure compliance with operational limits set in the licence. Conditions 21, 22, 23, 24 and 25 have been added to the licence outlining monitoring requirements, including standards and timeframes for monitoring and reporting.

9.1.6 Monitoring reports

Schedule 3 of the licence outlines required frequency and format of monitoring reports.

10. Appropriateness of Licence conditions

The conditions in the Issued Licence have been determined in accordance with DER's *Guidance Statement on Setting Conditions*.

DER's *Guidance Statement on Licence Duration* has been applied and the Issued Licence expires in 22 years from date of issue.

Condition Ref	Grounds
Environmental Compliance 1	Environmental compliance is a valid, risk-based condition to ensure appropriate linkage between the licence and the EP Act.
Notification of Material Change 2, 3 and 4	These conditions are valid, risk-based and enable flexibility in operations.
Works requirements 5, 6, 7 and 8	These conditions are valid, risk-based and contain appropriate controls (see section 9.1 of this decision report).
Infrastructure and equipment 9 and 10	These conditions are valid, risk-based and contain appropriate controls (see section 9.1 of this decision report).
Specified Action for management of stormwater, animal carcasses, odour and chemicals 11, 12, 13, 14, 15, 16, 17, 18 and 19	These conditions are valid, risk-based and contain appropriate controls (see section 9.1 of this decision report).
Clearing of Native Vegetation 20	This condition is valid and consistent with DER's Regulatory Principles (See Clearing Assessment Report in Appendix 3).
Groundwater monitoring and reporting requirements 21, 22 and 23	These conditions are valid, risk-based and contain appropriate controls (see section 9.1.5 of this decision report).
Monitoring and Reporting of Inputs and Outputs 24 and 25	These conditions are valid, risk-based and contain appropriate controls (see section 9.1.5 of this decision report).
Emissions 26	This condition is valid, risk-based and consistent with the EP Act.
Information 27, 28, 29, 30 and 31	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.

DER notes that it may review the appropriateness and adequacy of controls at any time, and that following a review, DER may initiate amendments to the licence under the EP Act.

11. Applicant's comments

The applicant was provided with the draft decision report and draft licence on 19 January 2017. The applicant provided a response on 3 February 2017 requesting a three month extension on the date the monitoring bores must be installed by. All other details of the drafts were acceptable to the applicant. The draft decision report initially recommended completion of the three groundwater monitoring bores by 30 June 2017. The Delegated Officer has considered this request and has determined completion of the groundwater monitoring bores by 30 September 2017 is acceptable.

12. Conclusion

This assessment of the risks of activities on the premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this decision report (summarised in Appendix 1).

Based on this assessment, it has been determined that the Revised Licence will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Caron Goodbourn
A/ Manager Licensing – Industry Regulation (Process Industries)
Delegated Officer
under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key Documents

	Document Title	Availability
1	Licence 7864/2003/4 – Broome Common	accessed at http://www.der.wa.gov.au
2	DER *Guidance Statement on Regulatory principles,* July 2015	
3	DER *Guidance Statement on Setting conditions,* September 2015	
4	DER *Guidance Statement on Licence duration,* August 2016	
5	DER *Guidance Statement on Risk Assessment,* November 2016	
6	DER *Guidance Statement on Decision Making,* November 2016	
7	DER *Guidance Statement on Environmental Siting*, November 2016	
8	Application Form: Works Approval dated 4 May 2016 and supporting documentation	DER records A1104350

Appendix 2: Clearing Assessment Report

Government of Western Australia
Department of Environment Regulation

Clearing Assessment Report

1. Application details

1.1. Application details

CPS No.: 7341/1
Application type: Licence (L7864/2003/4)

1.2. Applicant details

Applicant's name(s): International Livestock Export Pty Ltd

1.3. Property details

Property: Lot 533 on Plan 73704
Lot 535 on Plan 73704
Lot 541 on Plan 73704
Locality: Roebuck
Local Government Authority: Shire of Broome

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.3	0	Mechanical Removal	Stormwater management and composting

2. Background

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The application area is mapped as Beard vegetation association 750 which is described as 'Shrublands, pindan; Acacia tumida shrubland with grey box & cabbage gum medium woodland over ribbon grass & curly spinifex' (Shepherd et al. 2001).	The proposed clearing of 2.3 hectares across Lots 533, 535 and 541 on Plan 73704, Roebuck is for the purpose of improving stormwater management and manure composting at the Broome Common cattle yards.	Degraded; Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).	The vegetation condition was estimated based on aerial imagery and photos provided by the applicant.

3. Assessment of application against clearing principles

Comments

The proposed clearing of up to 2.3 hectares of native vegetation for the purpose of improving stormwater management and manure composting at the Broome Common cattle yards is considered unlikely to have any significant environmental impacts. The vegetation proposed to be cleared appears to have been subject to multiple historical disturbances and is estimated to be in degraded (Keighery, 1994) condition.

Consideration has been given to impacts to biodiversity, significant fauna habitat, rare flora, threatened ecological communities, remnant vegetation values, wetlands, watercourses, land degradation, conservation areas, surface water quality, groundwater quality, and flooding. The assessment has found that the proposed clearing is not likely to be at variance to any of the clearing principles.

Methodology

References:
-Keighery (1994)

GIS Databases:
-Hydrography, linear
-RAMSAR Sites
-Parks and Wildlife Managed Lands
-Pre-European Vegetation
-SAC Bio datasets (7 November 2016)

Planning instruments and other relevant matters.

Comments

The Broome Common cattle yards are a prescribed premises regulated by the Department of Environment Regulation (DER) under Part V Division 3 of the *Environmental Protection Act 1986* (EP Act). The proposed clearing is being assessed as part of a licence amendment application (L7864/2003/4) made under section 59 of the EP Act. In the event the licence amendment is granted, conditions permitting the clearing of native vegetation may be included. In accordance with Schedule 6 clause 2(c) of the EP Act, any clearing that is done in accordance with a licence would not require a clearing permit.

4. Recommendation

Recommendation

An assessment of the environmental impacts of the proposed clearing of 2.3 hectares of native vegetation has been undertaken in accordance with DER's Regulatory Principles, taking into consideration the clearing principles contained in Schedule 5 of the EP Act. Section 62(1) of the EP Act provides for conditions to be placed on a licence to mitigate environmental harm. Clearing Regulation considers that the proposed clearing is unlikely to cause environmental harm. Recommended conditions are as follows:

1. Clearing authorised

   The Licensee shall not clear more than 2.3 hectares of native vegetation within the area cross hatched yellow on attached Plan 7341/1.

[redacted]
James Widenbar
MANAGER
CLEARING REGULATION

18 November 2016

5. References

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.