Amendment Report

Application for a licence amendment

Division 3 Part V of the *Environmental Protection Act 1986*

Licence Number	L8977/2016/1
Licence Holder	Kimberley Meat Company Pty Ltd
ACN	159 933 392
File Number	DER2016/001019
Premises	Colourstone Abattoir 210 Great Northern Highway ROEBUCK WA 6725 Legal description – Lot 210 on Plan 186082
Date of Report	11 June 2021
Status of report	Final

1. Decision summary

Licence L8977/2016/1 is held by Kimberley Meat Company Pty Ltd (licence holder) for the Kimberley Meat Company Abattoir (premises), located at 210 Great Northern Highway, Derby.

This report documents the assessment of potential risks to the environment and public health from the operation of two brine evaporation pads to the emissions and discharges during the operation of the Premises. As a result of this assessment, revised licence L8977/2016/1 has been granted.

The revised licence issued as a result of this amendment consolidates and supersedes the existing licence previously granted in relation to the premises.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this report, the delegated officer has considered and given due regard to the department's regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

On 25 September 2020, the licence holder applied to amend licence L8977/2016/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act).

The amendment relates to operation of two recently constructed concrete evaporation pads at the premises, for the storage and evaporation of brine and the subsequent collection of brine salt.

2.3 Amendment application

The subject application was prompted by an inspection of the premises conducted by the department on 24 August 2020, which identified that two concrete evaporation pads, for the storage of fellmongering shed brine, had been constructed without a works approval.

2.4 Changes to waste and by-product management specifications

The licence holder has requested approval to modify the premises operations to divert wastewater (brine) to the concrete evaporation pads. This brine is currently diverted to the existing HyDAF HD-35 Wastewater Treatment System (WWTS); however, the licence holder now wishes to evaporate this brine, collect the salt, and reuse it in the fellmongering operations.

About 2,000 litres of brine is collected each week from current fellmongering activities on the premises, which is stored in IBCs in the blind sump of the fellmongering shed. It is proposed that these IBCs of brine be emptied on the evaporation pads through March to December each year, for the salt to be swept up, periodically bagged and reused.

Total amount of brine expected to be discharged to the evaporation pads will be about 88,000 litres per year.

2.5 Infrastructure

The changes to key infrastructure assessed in this report are detailed below.

The licence holder has constructed two concrete evaporation pads (side by side, each 14.3 m x 29.0 m x 0.3 m). Refer to Figure 1 and Figure 2 for plans and a photo of the brine evaporations pads. The total volume of the pads has been calculated to be 248,820 L, with a freeboard of 50 mm, total capacity is 207,350 L.

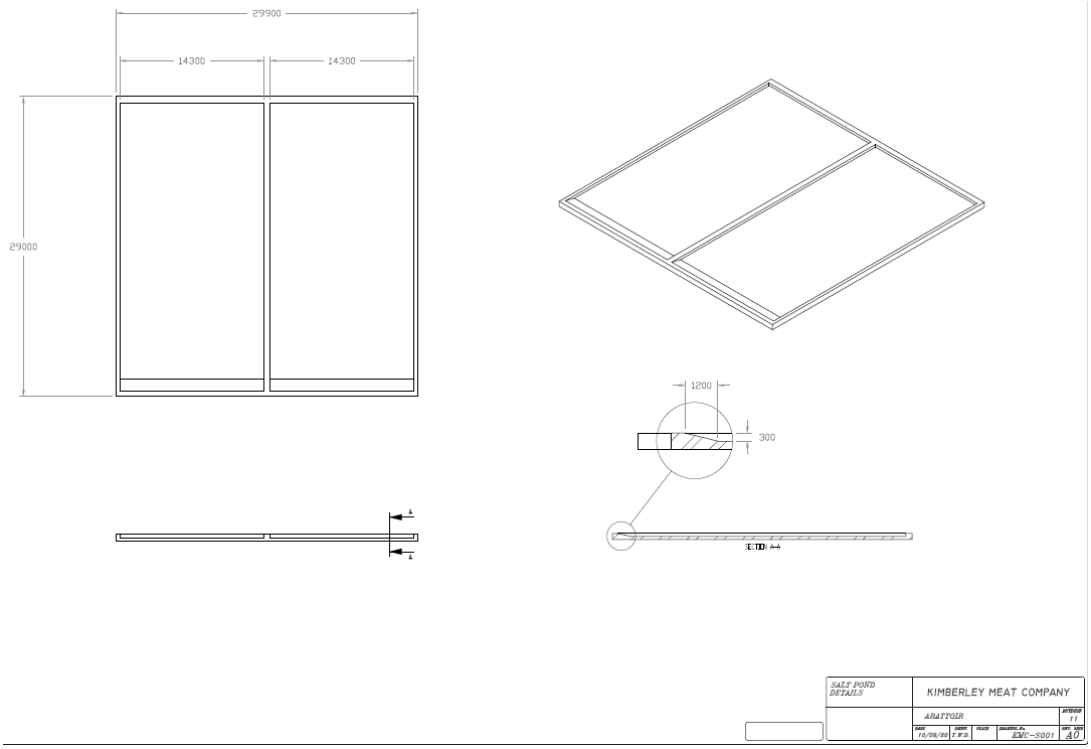

Figure 1: Plans for brine evaporation pads

A desktop review of the constructed pads against the builder's specifications has been conducted by a structural engineer. Based on a review of the builder's notes and photographic evidence from the builder and licence holder, the consulting engineer has certified the constructed works in accordance with the following design criteria:

- concrete exposure classification B1 to AS3600 and AS3735;
- concrete grade N32/20/80;
- Sika Fibre Force PP48s at 6kg/m^3 in accordance with supplier's specification; and
- 300 mm high kerb to allow for enough containment and enables brine to evaporate quickly.

Figure 2: Constructed concrete brine evaporation pads

3. Risk assessment

The delegated officer assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020a).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during the operation of the evaporation pad, which have been considered in this report, are detailed in Table 1 below. Also details the proposed control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 1: Emission, sources, pathways, and licence holder controls

Emission	Sources	Potential pathways	Proposed controls
Salt laden storm water	Overtopping of evaporation pad during rainfall or flood event	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Low yield of brine (~ 2,000 L per week) to be poured onto pad at any one time. Pads to be periodically cleared of salt, which is bagged and reused.

Emission	Sources	Potential pathways	Proposed controls
			Pads are not used during the wet season with all salt to be collected in the first week of December.
Salt laden water	Spill of brine filled IBC	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Concrete hardstand and 500 mm hard pad surface between the fellmongering building and evaporation pad. Monitoring bore MKB1 is located 75 metres east of the ponds.
Dust	Salt dust getting picked up by the wind or during collection and bagging	Air and wind dispersion of dust to nearby receptors	No collection of salt to be done when weather conditions are averse.

3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020a), the delegated officer has excluded employees, visitors, and contractors of the applicants from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 2 provides a summary of potential human and environmental receptors that may be impacted because of activities upon, or emission and discharges from, the prescribed premises *(Guideline: Environmental Siting* (DWER 2020b)).

Table 2: Sensitive human and environmental receptors

Human receptors	Distance from prescribed activity
Bidan (Bedunburra) Aboriginal Community	560 m southwest of the Premises
Environmental receptors	**Distance from prescribed activity**
Perennial river – Little Logue River	680 m east of the Premises boundary.
Ephemeral creek system, minor watercourse – tributary of Little Logue River	Watercourse runs through the centre of the Premises. The creek is normally dry and runs for a short duration (up to a few hours) following medium or heavy rainfall.
Groundwater depth and water quality.	Depth to groundwater is about 15 m below ground level. Ground water is considered fresh and one monitoring bore is located on the Premises.

3.1.3 Meteorology

Prevailing winds patterns can provide a direct pathway for transmission of dust emissions by air, so the prevailing wind patterns that may carry these emissions to sensitive receptors have been considered. Likewise, rainfall is a consideration regarding the risk of overtopping the brine evaporation pads during heavy events.

The closest Bureau of Meteorology weather station to the Premises is located at Derby Aero, about 60 km north-west. In the absence of any other weather data available for the Premises, a review of the meteorological data from Derby Aero stations is provided below.

(a) Wind direction and speed

The average annual 9 am wind direction in Derby blows from the east and south-east for about 35% of the year and south for about 15% of the year. Wind speeds at 9 am range from 10 to 20 km per hour but can reach 30 km per hour at times. The average 3 pm wind direction in Derby blows north-west for up to 45% of the year. Wind speeds are recorded at 10 to 20 km

throughout the year, with north westerlies reaching up to 30 km per hour throughout the year.

(b) Regional climatic aspects

Kimberley Meat Abattoir are located within The West Kimberley Region which is a semi-arid climate. The region has two distinct seasons: a dry season and a wet season. The West Kimberley is susceptible to tropical cyclones and these, along with 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 about 9.2 mm per cubic metre (annual average) is experienced in Derby. Based on the surface area of the pads this means that when conditions are dry 7,630 L of water can evaporate off the pad per day.

(c) Rainfall and temperature

The dry season is from April to November with nearly every day clear and maximum temperatures about 34^{o}C. The wet season extends from December to March, with maximum temperatures of about 38^{o}C, erratic tropical downpours, and high humidity. Derby's annual rainfall average is 691 mm, 76% of which falls from January to March.

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020a) for those emission sources which are proposed to change and considers potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the licence holder has proposed mitigation measures/controls (as detailed in section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the licence holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

The revised licence L8977 that accompanies this report authorises emissions associated with the operation of the premises i.e., fellmongering and brine evaporation activities.

The conditions in the revised licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 3. Risk assessment of potential emissions and discharges from the premises during operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions[2] of licence	Regulatory controls (refer to the amended licence)
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**				
Operation								
Overtopping of evaporation pad during rainfall or flood event	Salt laden storm water	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Ephemeral creek system within 100 m of pads. Perennial river – Little Logue River.	Refer to Section 3.1.1	C = Slight L = Unlikely **Low Risk**	Y	Conditions 1, 2, 3 and 4	The evaporation pads have been added to the infrastructure table (Amended Condition 1), with an operation requirement to maintain the pads as per builder specifications. The fellmongering brine has been added to the licence waste and by-product management specification table (Table 2 of the revised licence), with specified requirements that limit operation to 10 months of the year and ensure salt is collected prior to wet season.
Spill of brine filled IBC	Salt laden water			Refer to Section 3.1.1	C = Slight L = Unlikely **Low Risk**	Y		
Salt dust getting picked up by the wind or during collection and bagging	Dust	Air and wind dispersion of dust to nearby receptors	Bidan community – 600 m to the south.	Refer to Section 3.1.1	C = Slight L = Rare **Low Risk**	Y	Condition 2	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020a).

Note 2: Proposed Licence holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 4: Consultation

Consultation method	Comments received	Department response
Shire of Derby advised of proposal on 19 March 2021	No comments received.	N/A
Bidan Aboriginal Community advised of proposal on 19 March 2021.		
Licence holder was provided with draft amendment on 13 May 2021.	No comments received.	N/A

5. Assessment summary

In assessing the requested changes to the existing licence outlines in section 2, the Delegated Officer has considered the following:

- the concrete pads were constructed without a works approval. The licence amendment application was a response to the related non-compliance generated during the premises inspection on 24 August 2020;
- the licence holder will use the pads to evaporate 2,000 L of fellmongering brine per week March to December, collecting and bagging salt to be re-used in the fellmongering shed;
- the licence holder will ensure all salt has been collected from the evaporation pads prior to the 31 December of each year;
- total volume of the pads is calculated at about 248,800 L, with the licence holder proposing only about 2,000 L of brine to be added to the pads for evaporation each week;
- surface area of the pads is 829.4 m^2 with average daily evaporation rate of 9.2 L per square metre per day. When conditions are dry 7,630 L of water can evaporate off the pad per day;
- with 76% of rainfall falling between within three months, 525 mm of rainfall is expected to fall each wet season between January and March. With the evaporation rate over summer it is expected that 96 mm of rainfall will fall which wouldn't readily be evaporated over the season. With the surface area of the pads, overall net volume into the pads over the wet summer months would equal about 80,000 L; and
- the licence holder would not be using the pads over the summer wet months and even in the event of a rainfall event capable of overtopping the pads, the only discharge to land would be rainwater mixed with whatever surface dust has collected on the pads.

6. Decision

Based on the assessment in this report, the delegated officer has determined the revised licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

6.1 Summary of amendments

Table 5 provides a summary of the amendments and will act as record of implemented changes. All changes have been incorporated into the revised licence as part of the amendment process.

Table 5: Summary of licence amendments

Condition no.	Proposed amendments

Table 1	Inclusion of new site infrastructure (concrete evaporation pads) and operational requirement.
Table 2	Inclusion of brine as a waste and by-product with disposal strategy and specified requirements.
Conditions 1 - 4	Conditions related to the management of the brine evaporation pads
Definitions	Additional definitions added to table as required by the proposed amendment.

References

1. Kimberley Meat Company Pty Ltd “Application for Amendment Sept 2020” application form and supporting documentation, September 2020.
2. Kimberley Meat Company Pty Ltd “2020 Environmental Inspection Non-Approved Salt Pad Construction Report V2” report, engineering report and supporting documentation, January 2021.
3. Department of Water and Environmental Regulation (DWER) 2020a, *Guideline: Risk Assessments*, Perth, Western Australia.
4. DWER 2020b, *Guideline: Environmental Siting*, Perth, Western Australia.
5. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.

Appendix 1: Application validation summary

<table>
<tr><th colspan="6">SECTION 1: APPLICATION SUMMARY</th></tr>
<tr><td colspan="6">Application type</td></tr>
<tr><td rowspan="2">Amendment to licence</td><td rowspan="2">☒</td><td>Current licence number:</td><td colspan="3">L8977/2016/1</td></tr>
<tr><td>Relevant works approval number:</td><td></td><td>N/A</td><td>☐</td></tr>
<tr><td colspan="2">Date application received</td><td colspan="4">25 September 2020</td></tr>
<tr><td colspan="6">Applicant and Premises details</td></tr>
<tr><td colspan="2">Applicant name/s (full legal name/s)</td><td colspan="4">Kimberley Meat Company Pty Ltd</td></tr>
<tr><td colspan="2">Premises name</td><td colspan="4">Kimberley Meat Company Abattoir</td></tr>
<tr><td colspan="2">Premises location</td><td colspan="4">Lot 210 Great Northern Highway DERBY WA 6728</td></tr>
<tr><td colspan="2">Local Government Authority</td><td colspan="4">Shire of Derby-West Kimberley</td></tr>
<tr><td colspan="6">Application documents</td></tr>
<tr><td colspan="2">HPCM file reference number:</td><td colspan="4">DER2016/001019-1, DWERST343850</td></tr>
<tr><td colspan="2">Key application documents (additional to application form):</td><td colspan="4">Signed salt pad report, including photos, dated 4 January 2021.
Salt pad details drawing and site layout.
Engineering report from WA Structural – Consulting Engineers Pty Ltd, dated 21 December 2020.</td></tr>
<tr><td colspan="6">Scope of application/assessment</td></tr>
<tr><td colspan="2">Summary of proposed activities or changes to existing operations.</td><td colspan="4">Licence amendment
Operation of premises includes fellmongering (category 83) using salt brine to cure animal skins or hide.
Two 300 mm thick concrete evaporation pads (side by side, each 14.3 m x 29 m x 0.3 m) have already been constructed on site (without a works approval).
The Applicant is seeking this infrastructure included in their licence as an amendment.</td></tr>
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Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 15: Abattoir; premises on which animals are slaughtered.	Assessed – 32,340 live weight tonnes per year.	N/A
Category 55: Livestock sale yard or holding pen; premises on which live animals are held pending their sale, shipment or slaughter.	Assessed – 77,000 animals per year.	N/A
Category 83: Fell mongering; premises on which animal skins or hides are dried, cured or stored.	Assessed – 77,000 skins or hides per year.	N/A
Category 16: Rendering operations; premises on which substances from animal materials are processed or extracted.	Assessed – 115.5 tonnes per year.	N/A

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes ☐ No ☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ☐ No ☒	Ministerial statement No: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☐ No ☒	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	Certificate of title ☒ General lease ☐ Expiry: Mining lease / tenement ☐ Expiry: Other evidence ☐ Expiry:
Has the applicant obtained all relevant planning approvals?	Yes ☐ No ☒ N/A ☒	Approval: Expiry date: If N/A explain why? In the existing licence (L8977) it is indicated that the Shire does not exercise statutory planning control over the area and no Development Approval was required.

Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☐ No ☒	CPS No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes ☐ No ☒	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☐ No ☒	Application reference No: Licence/permit No: Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☐ No ☒	Name: N/A Type: Proclaimed Groundwater Area/Surface Water Area Has Regulatory Services (Water) been consulted? Yes ☐ No ☐ N/A ☐ Regional office:
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes ☐ No ☐ N/A ☐
Is the Premises subject to any other Acts or subsidiary regulations (e.g. *Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx*)	Yes ☐ No ☒	
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	
Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☐ No ☒	Classification: N/A Date of classification: N/A