



**Appeals Convenor**  
**Environmental Protection Act 1986**

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**REPORT TO THE  
MINISTER FOR ENVIRONMENT**

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**APPEALS AGAINST CONDITIONS OF LICENCE L7873/2002/5**

**NARROGIN CATTLE FEEDLOT,  
WANERIE ROAD, NARROGIN**

**Licence holder: Narrogin Beef Producers Pty Ltd**

Appeal numbers 24 and 27-29 of 2010

**June 2010**

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## EXECUTIVE SUMMARY

This is a report on appeals to the Minister for Environment in objection to conditions applied to a beef cattle feedlot in Narrogin by the Department of Environment and Conservation (DEC). The feedlot was approved by the Shire of Narrogin in 2002, and is approximately 4.7 kilometres south west of the centre of the town of Narrogin.

The appeals primarily raised concerns in relation to conditions directed at controlling odour from the feedlot. Additional concerns were raised in relation to the effluent management conditions of the licence.

Taking into account the information provided in appeals, it was considered that feedlots, by their nature, generate odour, and that in the case of the Narrogin feedlot, odour was most likely to be of nuisance to landholders in the immediate vicinity of the feedlot, most notably staff and students at the Narrogin Agricultural College.

It was also noted that the DEC advised the licence holder in July and August 2009 that the capacity of the feedlot could be increased to 10,000, up from the previous limit of 6,000 head set by the DEC and confirm by the Minister in her determination of appeals lodged in respect to the former licence.

In relation to the effluent system, it was concluded that the existing system is inadequate for the feedlot, and was inconsistent with the original proposal submitted by the licence holder.

## Recommendations

It was recommended that appeals be allowed in part, by the Minister requesting the DEC to review and (where required) amend the licence to achieve the following outcomes:

1. In relation to condition A1 Odour Control, the DEC should:
  - a. Amend the condition to define unreasonable odour by reference to sensitive places outside the boundaries of the feedlot, which would be defined to include residential buildings, schools, hospitals etc; or
  - b. If amendment of the condition is not possible, prepare and publish guidelines to assist the community understand how the DEC will interpret condition A1, with particular reference to factors such as odour frequency, intensity, duration, offensiveness and location.
2. Insert condition limiting stock holding for the feedlot to a maximum of 10,000 head of cattle, subject to the licence holder complying with condition A1.
3. Delete conditions requiring licence holder to satisfy the previous appeal determination consistent with the DEC's determination that the conditions had been satisfied (e.g. delete conditions G4 and G5).
4. Insert condition requiring confirmation of odour reductions at 6,000 head of cattle under the approved waste management plan.
5. In relation to monthly reporting under condition G6, amend to require the monthly report to:
  - a. be provided to the DEC within 21 days of the end of the month; and
  - b. include the average daily weight of cattle held at the feedlot.

6. Insert requirement for licence holder to commission an independent specialist (being a person with no less than 10 years experience in assessing/auditing large feedlots in Australia) to review the waste management plan and report within nine months of the date the licence is amended recommending changes to the plan (if any) which will ensure condition A1 is met, noting the proximity of the feedlot to the Agricultural College, rural residences and the town of Narrogin.
7. Insert requirement for licence holder to commission a review of the feedlot operations against the waste management plan on an annual basis, with particular emphasis on measures to manage odour generation.
8. Insert requirement for the report/reviews referred to in 6 and 7 to be made available to the public and the DEC.
9. Insert requirement for licence holder to implement and publish a complaints procedure, to maintain a register of all complaints, and responses made to complaints, which will be available to the DEC upon request.
10. Consider the appropriate mechanism to require the licence holder to either:
  - a. Construct the evaporation pond/sedimentation basins in accordance with the plans submitted with the original works approval, as defined in the current conditions; or
  - b. Implement an alternative method of effluent management which meets the National Guidelines, and which is verified by an independent specialist to the satisfaction of the DEC, consistent with the DEC's appeal advice.
11. Extend time for the licence holder to meet conditions W4 and W7 to within nine months of the date of the amended conditions taking effect, or prior to the number of cattle reaching 6,000 head, whichever is later, with conditions W5 and W8 amended accordingly.

It was considered the final wording of the conditions should be a matter for the DEC to determine under section 110 of the EP Act.

It was otherwise recommended that the appeals be dismissed.

## INTRODUCTION

This report deals with appeals against the conditions applied by the Department of Environment and Conservation (DEC) in respect to the Narrogin Cattle Feedlot, Wanerie Road, Narrogin (the Feedlot) operated by Narrogin Beef Producers Pty Ltd (Narrogin Beef). A total of four appeals were received. The appellants are:

- Narrogin Beef;
- Shire of Narrogin;
- Department of Education (as operator of the Western Australian College of Agriculture, Narrogin);
- Narrogin Environmental Action Team (Inc) (NEAT).

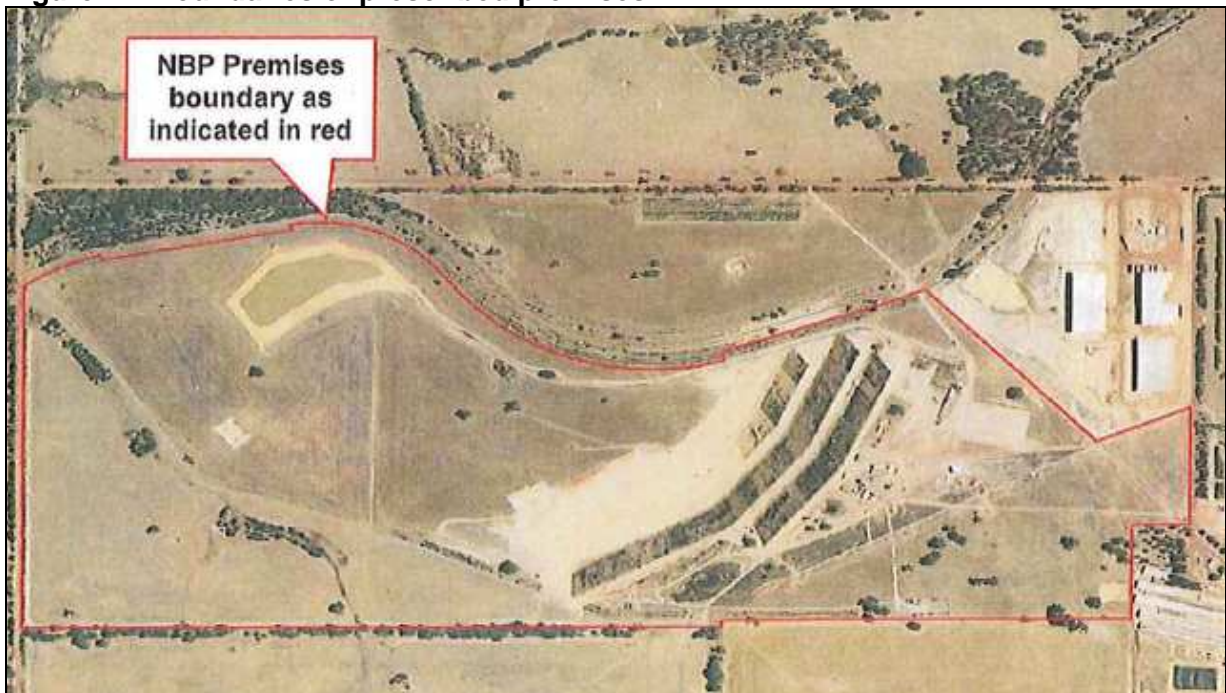
This document is the Appeals Convenor's formal report to the Minister for Environment under section 109(3) of the *Environmental Protection Act 1986* (the EP Act).

## PROPOSAL DESCRIPTION

Narrogin Beef has operated a cattle feedlot within the Shire of Narrogin since 2003. The DEC has advised that the premises are considered to be a Category 1 feedlot within the meaning of Schedule 1 of the *Environmental Protection Regulations 1987* (the EP Regulations), and are thereby subject to the requirement for the occupier to hold a licence in respect to those premises. The licence which is the subject of these appeals was issued by the DEC on 8 March 2010 (licence number 7873/2002/5).

The site is located at the corner of Wanerie and Cooramining Roads, approximately 4.7km southwest of the centre of the town of Narrogin. The DEC has determined the premises boundaries to be the boundaries of the lots over which the feedlot has been constructed, namely Lot 4884 on Plan 145470, Lot 4985 on Plan 115829, and Lot 563 on Plan 37286 (see Figure 1). The property is entirely within the boundaries of the Shire of Narrogin.

**Figure 1 – Boundaries of prescribed premises<sup>1</sup>**



<sup>1</sup> Advice to the Minister for Environment under s 106 of the EP Act, DEC, April 2010.

## HISTORY

On 18 April 2002, the Narrogin Shire Council passed a resolution approving the establishment of a cattle feedlot at the corner of Cooramining Road and Wanerie Road, Narrogin. The approval was for a maximum of 14,940 head of cattle, and was subject to a number of conditions, including that emissions from the premises being contained within acceptable levels to the satisfaction of Council having regard to the advice of the Environmental Protection Authority (EPA).

By letter dated 30 August 2002, the then Department of Environmental Protection (now the DEC) granted Narrogin Beef a works approval for the construction of the Feedlot. The works approval was stated to commence on 2 September 2002, and expired on 1 September 2005. The "preamble" to the works approval stated that:

... the resulting cattle feedlot will have a maximum production capacity of 14,940 animals at any time.

### Staged Approach

Development will be via a staged approach to development. It is anticipated that the first, licensed stage will relate to a maximum stocking rate of 5,000 head of cattle. The environmental performance of the feedlot will be assessed during the first stage to ascertain under what conditions progress to subsequent stages is justified.<sup>2</sup>

Appeals were lodged in respect to the conditions of the works approval issued by the Department of Environmental Protection and the decision of the EPA not to assess the proposal. In considering the latter appeal, the then Minister for the Environment determined:

The facility is a Prescribed Premises under the provisions of the *Environmental Protection Act 1986*. The [DEC] can set Works Approval conditions to ensure the facility is constructed to include the design features referred to above and can also set conditions on the Licence to ensure the management measures proposed by the proponent are implemented. The Works Approval and Licence issued by the [DEC] can therefore provide certainty that the pollution aspects of this proposal can be managed.

With regard to the scale of the proposal, the EPA is aware that the current licence application with the [DEC] is for 5,000 head of cattle, with the possibility of expansion in the future. The proponent can be required by the [DEC] to limit the number of cattle in the facility in accord with its current licence application until such time as the proponent has demonstrated to the [DEC] that the proposal is being managed to prevent significant impacts on nearby residences. The [DEC] has the authority not to allow the further expansion of the cattle feedlot unless it is satisfied that the proposal is being managed.

In view of the capacity and authority of the [DEC] to apply legally binding conditions through the Works Approval and Licence to ensure the facility is designed and managed to prevent significant impacts on nearby residences from odour, noise and dust, formal assessment of this proposal is not warranted.

After considering all the issues I have supported the EPA's decision on level of assessment for this proposal.<sup>3</sup>

The effect of this determination was that the decision of the EPA not to assess the proposal was affirmed, and that the environmental impacts of the proposal could be managed through the works approval and licensing process under the EP Act.

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<sup>2</sup> Works Approval No. 3600, page 1.

<sup>3</sup> Letter from Minister for the Environment and Heritage to Mr P. Gow, 11 December 2002, page 2-3.

It is understood that between 2002 and late 2003, Narrogin Beef undertook construction of the facility. Once constructed, the premises were licensed, the details of which are shown in Table 1.

**Table 1 – Details of licences applying to Narrogin Feedlot, 2003-2008<sup>4</sup>**

Date	Licence no.	Duration	Details of key conditions
1 Dec 2003	L7873/1	1 year	<ul style="list-style-type: none"> <li>• 2,000 head limit (preamble)</li> <li>• 20 week pen cleaning interval</li> <li>• Manure disposed offsite to approved facility</li> <li>• Manure stockpiled for no more than 24 hours</li> </ul>
11 Nov 2004	L7873/2	1 year	<ul style="list-style-type: none"> <li>• 6,000 head limit (preamble)</li> <li>• 20 week pen cleaning interval</li> <li>• Manure disposed offsite or vermi-composted</li> <li>• Manure stockpiled for no more than 28 days in windrows not exceeding 3 m height</li> </ul>
9 May 2005	L7873/2 (amendment)	As above	<ul style="list-style-type: none"> <li>• 6,000 head limit (preamble)</li> <li>• 20 week pen cleaning interval</li> <li>• Manure disposed offsite or vermi-composted</li> <li>• Manure stockpiled on concrete or compacted limestone within containment pond area</li> <li>• No manure storage time limit</li> </ul>
28 Sep 2005	L7873/3	2 years	<ul style="list-style-type: none"> <li>• 6,000 head limit (preamble)</li> <li>• 20 week pen cleaning interval</li> <li>• Manure disposed offsite or vermi-composted</li> <li>• Manure stockpiled on concrete or compacted limestone within containment pond area</li> <li>• No manure storage time limit</li> </ul>
22 Nov 2007	L7873/3 (amendment)	3 months	<ul style="list-style-type: none"> <li>• 6,000 head limit (preamble)</li> <li>• 20 week pen cleaning interval</li> <li>• Manure disposed offsite or vermi-composted</li> <li>• Manure stockpiled on concrete or compacted limestone within containment pond area</li> <li>• No manure storage time limit</li> </ul>
11 Feb 2008	L7873/3 (amendment)	2 months	<ul style="list-style-type: none"> <li>• 6,000 head limit (preamble)</li> <li>• 20 week pen cleaning interval</li> <li>• Manure disposed offsite or vermi-composted</li> <li>• Manure stockpiled on concrete or compacted limestone within containment pond area</li> <li>• No manure storage time limit</li> </ul>
31 Mar 2008	L7873/4	2 years	<ul style="list-style-type: none"> <li>• 8,000 head limit, reduced to 6,000 head from 1 June 2008</li> <li>• 4 week pen cleaning interval, with records kept</li> <li>• Requirement to construct manure storage area, no greater than 500m<sup>2</sup> area</li> </ul>

<sup>4</sup> Copies of all licences provided by DEC, May 2010.

## Appeals in relation to licence L7873/4 (2008)

The then Minister for the Environment received four appeals in objection to the content of the conditions applying to the above licence, which was issued by the DEC in March 2008 (the 2008 appeals). A key issue raised in the 2008 appeals related to odour from the feedlot, and the number of stock that can reasonably be held at the premises.

In determining the 2008 appeals, the Minister for Environment stated (among other things):

... I have formed the view that while there is no information supporting a further reduction in cattle numbers, there is adequate justification for not approving the facility to operate at an increased capacity at this time. I note that the DEC's decision to limit the capacity to 6,000 head has been based on Narrogin Beef Producers' environmental performance and the occurrence of verified odour complaints, which are supported by odour assessments using accepted methods.

However, while it is considered appropriate to retain the current 6,000 head capacity limit in the licence at this time, I believe that it is important to outline an open and transparent process for Narrogin Beef Producers to demonstrate environmental improvements and to establish a clear path forward to achieve future increases in the capacity of the feedlot. It is also considered that the resolution of concerns regarding the facility should be undertaken at a local level and with the support of the community and relevant stakeholders. Against this background, I propose the following path forward:

### *Finalisation of the Waste Management Plan*

I am advised that the draft Waste Management Plan provided by Narrogin Beef Producers in accordance with condition W1 of the licence has not yet been approved by the DEC. I therefore encourage Narrogin Beef Producers to liaise with the DEC with a view to resolving any outstanding issues and seek to have the plan approved as soon as possible. In this regard, I have requested DEC to provide feedback to Narrogin Beef Producers on the adequacy of the draft plan submitted by Narrogin Beef Producers and outline any necessary improvements.

### *Implementation of the Waste Management Plan*

I have requested the DEC to amend the licence to require Narrogin Beef Producers to commence the implementation of the finalised Waste Management Plan within one month from it being approved by the DEC.

### *Validation of improvements in odour and management*

I am of the view that subject to the satisfactory finalisation and implementation of the Waste Management Plan and validation of improvements in odour and management, the capacity of the premises could be increased to 10,000 head of cattle.

In this regard I have requested the DEC to amend the licence by replacing conditions G2 and G3 with conditions which:

1. Limit the current capacity of the premises to 6,000 head of cattle; and
2. Provide for an increase in capacity of up to 10,000 head of cattle, subject to Narrogin Beef Producers demonstrating to the satisfaction of the DEC that:
  - i. the approved Waste Management Plan has been satisfactorily implemented at a feedlot capacity of 6,000 head of cattle;
  - ii. odour reductions have been achieved and validated at a feedlot capacity of 6,000 head of cattle; and
  - iii. an acceptable level of waste management and odour reduction can be maintained at an increased capacity of up to 10,000 head of cattle.<sup>5</sup>

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<sup>5</sup> Minister's appeal decision, 9 January 2009, pages 4-5.



The Minister additionally appointed Mr Barry Carbon to chair the Local Community Consultative Committee (LCCC) comprising relevant stakeholders with a view to providing the DEC with advice by 30 September 2009 on the extent to which Narrogin Beef met points 2(i)-(iii) in the Minister's appeal determination, and advice on the environmental merits of increasing the stock holding to 10,000 head of cattle.<sup>6</sup>

The Minister's decision was given effect by the DEC pursuant to section 110 of the EP Act, with an amended licence being issued on 31 July 2009. This licence was due to expire in March 2010, and was replaced by the current licence on 8 March 2010. It is this licence which is the subject of these appeals.

## **OVERVIEW OF APPEAL PROCESS**

Pursuant to section 106 of the Act, a report was obtained from the DEC on the matters raised in the appeals. Meetings were held on-site with Narrogin Beef, and other meetings held in Narrogin with the third party appellants. Discussions were also held with officers within the DEC, the Department of Agriculture and Food, the Victoria Environmental Protection Authority and Aus-Meat.

The environmental appeals process is a merits based process. Appeal rights in relation to a licence are normally against the specifications of a licence, that is, whether the conditions of the licence are adequate or appropriate to minimise, manage or abate pollution and to ensure that a premises is operated in an environmentally acceptable manner. Consistency with any Conditions set under Part IV of the Act and previous Ministerial appeal determinations are also relevant, subject to new information or evidence being presented not previously considered.

## **GROUND OF APPEAL**

The appeals raised a number of issues in relation to the conditions of the licence, which are summarised as relating to one of the following subject areas:

1. Classification of the premises;
2. Odour; and
3. Waste water management.

These grounds of appeal are considered in turn.

### **GROUND 1 – CLASSIFICATION OF PREMISES**

By this ground of appeal, Narrogin Beef questioned the classification of the premises by the DEC. Narrogin Beef submitted that the premises boundary was not the cadastral boundary (Figure 2), but the active area of the feedlot. In support of this, Narrogin Beef provided a copy of a lease agreement between itself and the land owners (M & J Thompson), showing the delineated boundaries of the lease area (Figure 3), which is less than the area identified by the DEC. Narrogin Beef submitted alternatively that these boundaries are more than 100 metres from a watercourse, or that the watercourse identified by the DEC is not a watercourse in any event.

Narrogin Beef submitted that as a result of the foregoing, the premises should not be the subject of a licence, but that it should be granted a registration, consistent with a Category 68 feedlot under Schedule 1 of the EP Regulations.

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<sup>6</sup> Minister's appeal decision, 9 January 2009, page 5.

Narrogin Beef also submitted that if the DEC is correct in defining the boundaries of the premises by the titles, then the premises would not require a licence as the density of the stock holding would be lower than 50 cattle per hectare specified in the EP Regulations.

**Figure 2 – Premises boundaries according to DEC**



**Figure 3 – Premises boundaries according to proponent**



### **DEC advice**

The DEC advised that Narrogin Beef applied for registration of its premises under Category 68 on 7 December 2009. The DEC stated that it notified Narrogin Beef that the premises were correctly prescribed as a Category 1 cattle feedlot under the EP Regulations, and that its application for registration under Category 68 would be returned.

The DEC stated that the notional and unsurveyed premises boundary delineating the cattle feedlot shown in Figure 3 is not an appropriate boundary for the purposes of determining the

classification of the feedlot. The DEC advised that its determination that the Narrogin Beef premises are properly classified as a Category 1 cattle feedlot remains unchanged, and was submitted to be consistent with the classification of other licensed cattle feedlots in Western Australia.

## Consideration

This ground of appeal does not go to the conditions of the licence, which is the basis for consideration of appeals of this nature. The DEC has advised that the premises are Category 1, and that the boundaries proposed by Narrogin Beef are not acceptable.

The question as to the interpretation of the EP Regulations is appropriately a matter for the DEC. From information provided by the DEC, it identified the premises boundaries as the boundaries of the three lots over which the feedlot is constructed (as shown in Figure 2). This appears to be a reasonable approach in this case, especially noting the feedlot operational area comprises a significant portion of the three lots. It is also noted that should additional effluent management be required (see Ground 3 of the appeals), it is likely these will extend beyond the purported lease boundary submitted by Narrogin Beef.

In relation to Narrogin Beef's claim that the premises boundary determined by the DEC means that the premises do not meet the density requirements for Category 1 and 68 feedlots (that is, the number of cattle per hectare exceeds 50), it is noted this argument is founded on a stock holding of 6,000 head. At this stockholding, and noting the area of the prescribed premises is approximately 131 hectares, the number of cattle per hectare is 45.8. Narrogin Beef submitted that as this is below the threshold specified in the EP Regulations, the boundaries defined by the DEC are such that the premises are not prescribed under the Act.

Whilst Narrogin Beef's calculations are acknowledged, the premises are designed to have a greater number of cattle than 6,000 head, and given the EP Regulations refer to the "design capacity" of the facility, it is considered that the premises meet the threshold stocking density such that they are considered to be prescribed within the meaning of the Act. That is, it is considered that the premises are designed for a larger stock holding than 6,000 head, and as a result, the minimum stocking density has been established.

The characterisation of the watercourses was also raised by Narrogin Beef. It submitted that the features identified by the DEC are not watercourses, and are merely drainage lines that convey relatively small amounts of water during or immediately after significant precipitation.

The expression "watercourse" as it relates to prescribed premises is not defined in the EP Act or Regulations. There is however, reference in other parts of the Act to watercourses, which are defined with reference to the *Rights in Water and Irrigation Act 1914*. This Act defines a "watercourse" as:

### 3. Meaning of "watercourse"

(1) In this Act, unless the contrary intention appears —

**watercourse** means —

- (a) any river, creek, stream or brook in which water flows;
- (b) any collection of water (including a reservoir) into, through or out of which any thing coming within paragraph (a) flows;
- (c) any place where water flows that is prescribed by local by-laws to be a watercourse,

and includes the bed and banks of any thing referred to in paragraph (a), (b) or (c).

(2) For the purposes of the definition in subsection (1) —

- (a) a flow or collection of water comes within that definition even though it is only intermittent or occasional;

- (b) a river, creek, stream or brook includes a conduit that wholly or partially diverts it from its natural course and forms part of the river, creek, stream or brook; and
- (c) it is immaterial that a river, creek, stream or brook or a natural collection of water may have been artificially improved or altered.

It is understood that the data used by the DEC to identify watercourses in the vicinity of the premises was provided by the Department of Water, and reflects the legal definition in the *Rights in Water and Irrigation Act*. Officer level advice from the Department of Water during the appeal investigation confirmed that the watercourse to the south west of the feedlot infrastructure is properly identified as a watercourse. The characterisation of the watercourse to the north was less certain, with the Department of Water suggesting that it was not likely to be a watercourse.<sup>7</sup>

Narrogin Beef did not submit any information in support of its submission that the features were not watercourses. On the basis of the information provided by the Department of Water, it is considered that the drainage line to the south west of the feedlot area is a watercourse within the meaning of the EP Regulations.

### **Recommendation**

It follows from the above that it is considered that the boundaries defined by the DEC in relation to these premises are appropriate, and that the design capacity of the feedlot and its proximity to a watercourse identified by the Department of Water support the DEC's conclusion that the premises are prescribed within the meaning of the EP Act, and have been correctly identified as Category 1 premises.

It is recommended that this ground of appeal be dismissed.

## **GROUND 2 – ODOUR MANAGEMENT**

Odour is a key issue raised in appeals. Both Narrogin Beef and third party appellants raised concerns in relation to the odour conditions in the licence. These objections are considered in detail below.

### **Content of odour conditions**

The licence includes a number of conditions relating to odour management, which are based on the Minister's determination of the 2008 appeals and are carried over from the 31 July 2009 amended licence:

- G3 Subject to condition G4, the licensee shall ensure that the head of cattle held on the Premises does not exceed 6,000.
- G4 If the Director has provided the licensee with written notice that he is satisfied, the licensee may hold between 6,000 and 10,000 head of cattle on the Premises if all of the following requirements are fulfilled:
  - (i) the licensee manages, operates and improves the feedlot in accordance with the Waste Management Plan (Attachment 3);
  - (ii) the licensee has demonstrated to the Director's satisfaction that the Waste Management Plan approved under condition G4(i) is being implemented for the feedlot operating at the capacity of 6,000 head of cattle and the Director has provided the licensee with written notice that he is so-satisfied;

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<sup>7</sup> Pers comm., Department of Water, May 2010.

- (iii) the licensee, while operating the feedlot at the capacity of 6,000 head of cattle, has achieved a Validated Reduction of Odour Levels;
  - (iv) the licensee has provided the Director a report, evidencing that it has achieved the Validated Reduction of Odour Levels referred to in G4(iii); and
  - (v) the licensee demonstrates to the Director's satisfaction that the feedlot can:
    - A. operate at an increased capacity of up to 10,000 head of cattle in accordance with the licence conditions and any waste management plans approved under this licence (including the Waste Management Plan); and
    - B. continue to achieve Validated Odour Reductions whilst operating at an increased capacity of 10,000 head of cattle.
- G5 For the purposes of condition G4(v)(B), the Director will require evidence of Predicted Odours, on or before 1 February 2011 and including (but not limited to) the following information:
- (i) identification of potential sources of odour emissions from the operation of the feedlot on the Premises at a capacity of 10,000 head of cattle;
  - (ii) quantification of the odour emission rate of each potential source of odour emission identified in paragraph (a) above, and how it may vary over the course of a year;
  - (iii) modelling of the predicted dispersion of odour emissions identified and quantified in paragraphs (a) and (b) above over the course of a year; and
  - (iv) a figure showing the odour emission modelling referred to in paragraph (c) above and the levels of 2.5, 5, 7.5, 10 and 20 OU in the 99.5th percentile for 1-hour averages.
- G6 The licensee shall, within 7 days of the end of each month, provide to the Director a monthly report detailing the number of cattle held on the premises at the end of each day of the month.

#### **AIR POLLUTION CONTROL CONDITION**

##### **ODOUR CONTROL**

- A1 The licensee shall ensure that odour emitted from the premises does not unreasonably interfere with the health welfare, convenience, comfort or amenity of any person who is not on the premises.

Condition A1 was inserted by the DEC, and is understood to be a standard condition that it intends to apply to all odour intensive premises in the future. This issue is discussed further below.

#### **Narrogin Beef appeal**

Narrogin Beef submitted that this condition should be amended to permit it to operate at 10,000 standard cattle units. It also submitted that the licence should be amended to reflect the original works approval, which was submitted authorised the holding of 14,940 head of cattle at the premises.

Narrogin Beef also submitted that the odour conditions (specifically conditions G3-G5) are problematic on a number of grounds, including that the conditions require it to establish it can achieve odour levels at 10,000 head, but that the holding is restricted to 6,000 head until the former is established. In the view of Narrogin Beef, this is a circular requirement which cannot be complied with.

In relation to stock holding, Narrogin Beef stated that it has successfully demonstrated it can operate reasonably at 10,000 head, citing support of the Town and Shire of Narrogin, local testimonials and odour surveys undertaken by the Department of Agriculture and Food

(DAFWA). Narrogin Beef also stated that the Chair of the LCCC recommended approval be given for the feedlot to operate at 10,000 head.

Given the history of the DEC's actions in relation to the premises, Narrogin Beef submitted that no bank will finance the operations, with a consequence that that none of the parties interested in purchasing the premises will be willing to do so.

Narrogin Beef also questioned the requirement for it to fund odour assessments, and that this effectively amounted to it being required to spend money to prove its innocence. It was submitted that the DEC should be required to undertake these assessments.

Narrogin Beef also questioned the reliability of odour assessments generally, and questioned what would happen in the event that the assessments did not show improvement against earlier assessments. Whilst it expressed confidence that its procedures are amongst the best in Australia as far as odour emissions are concerned, Narrogin Beef stated that odour assessments have a 50-200% variability, which places considerable uncertainty on the ability to increase stock holdings at the site. Narrogin Beef also stated that the expert odour modeller engaged in 2007 had advised it that was inappropriate to proceed with further odour assessments.

In relation to the waste management plan, Narrogin Beef stated that it complied with the requirement in the 2008 licence to submit the plan to the DEC. Narrogin Beef submitted that the DEC did not respond to this document. After the LCCC was established, Narrogin Beef stated that it worked diligently with the Chairman and other members of the committee to write a new waste management plan. It was stated that four versions of this plan were prepared, each with significant time and attention to detail. It was submitted that the DEC had been involved the entire time, each time saying it would not accept the document, but in each instance refusing to say what was wrong.

Narrogin Beef stated that it submitted a final copy of the waste management plan (version 3.2) on 18 June 2009. After all the hard work, time and money, and after countless refusals to render suggestions, Narrogin Beef stated that the DEC wrote its own 3-page waste management plan, which was attached to the amended licence.

In relation to the alleged connection between the number of stock and odour complaints, Narrogin Beef noted earlier advice from the DEC to the Appeals Convenor in relation to the 2008 appeals:

NBP provided a works approval compliance certificate in support of holding 1,200 cattle on the premises that DEC accepted and the former licence (*L7873/2002/3*) noted the nominal rated throughput of cattle to be not more than 6,000 cattle at anyone time. DEC's complaint database indicated that while holding about 6,000 cattle in 2005, very few complaints were generated.

Therefore, the CEO limited the holding capacity to a number of cattle (6,000), which had historically generated few complaints. This number was also the holding capacity which was previously noted on licence *7873/2002/3*.

Narrogin Beef stated that it now has evidence which it claimed does not support the DEC's assertion that complaints correlate to cattle numbers.

In addition, Narrogin Beef submitted that DEC never finalised an Environmental Assessment Report (EAR) for the premises, despite assurance this would be done.

Narrogin Beef submitted that it deserves and must have a 10,000 SCU licence without conditions. It submitted that any real or perceived problems must be managed through objective and achievable conditions, without the threat of the headcount being reduced again.

By way of outcome, Narrogin Beef requested that the licence be amended by:

- amending condition G3 to say the Licensee shall ensure that the number of cattle held on the premises does not exceed 10,000 standard cattle units; and
- deleting conditions G4 and G5.

Finally, Narrogin Beef requested that condition G6 be amended to require reporting of stock numbers "within 21 days" rather than 7 days, as in the view of Narrogin Beef, the current reporting requirement is harsh and inconsistent with normal commercial reporting timelines (Narrogin Beef cited bank and Australian Taxation Office as examples).

#### DEC advice

The DEC advised that this matter has previously been raised by Narrogin Beef. The DEC reiterated its view that the works approval issued on 30 August 2002 for the construction of the premises (Stages 1, 2 and 3) expired on 1 September 2005.

The DEC stated that if Narrogin Beef intends to complete construction of the premises as originally planned in 2002, a new works approval is required. The DEC noted that it has not received an application from Narrogin Beef in this regard.

The DEC stated that conditions G3, G4 and G5 remain unchanged from the preceding licence, which was amended to give effect to the appeal determination made by the Minister in January 2009.

On the basis that there has been no change to the circumstances, or the context in which the Minister made the appeal determination, the DEC incorporated the conditions into the current licence.

In relation to reporting timelines, the DEC stated the condition which requires Narrogin Beef to report to DEC on the daily number of cattle held on the premises by the seventh day after the end of each month was added to the preceding licence issued on 31 March 2008. It was incorporated unchanged into the current licence, as reports have been provided by Narrogin Beef within the required timeframe. The DEC considers reporting cattle numbers within seven days after the end of each month is appropriate.

#### **Department of Education**

In its appeal, the Department of Education submitted that the feedlot has interfered with the convenience, comfort and amenity of persons at the Narrogin Agricultural College due to odour emissions. The Department made the following specific objections:

- condition G3 (specifying 6,000 head limit) should be amended to require Narrogin Beef to reduce odour emissions until odour studies confirm adequate odour control at 6,000 head;
- condition G4 (which permits an increase in stock numbers up to 10,000 head if certain preconditions are met) is unreasonable and should be deleted, as no permission should be granted to increase stock numbers to 10,000 head;
- condition A1 (requiring Narrogin Beef not to emit odour that unreasonably interferes with others) should be amended to establish threshold odour emission levels which must not be exceeded.



In discussions with officers of the Department of Education, it was noted that the Agricultural College it is understood the residential population of the campus is between 100 and 130 people, comprising staff and students.<sup>8</sup>

### DEC advice

The DEC advised that the current licence remains largely unchanged from the preceding licence, which incorporated conditions related to the Minister's appeal determination of 9 January 2009. On the basis that there has been no change to the circumstances, or the context in which the Minister made the appeal determination, the DEC considered that it is appropriate to continue with these conditions in the current licence. The licence conditions have been structured so that odour reductions must be maintained at 6,000 head of cattle, and those same reductions apply if up to 10,000 head of cattle are held on the premises. The DEC stated that it considers that the structure of the licence achieves the intent of the appeal grounds.

The DEC advised that it intended conducting its own odour studies on Narrogin Beef's cattle feedlot during November 2009 and March 2010 but, as a result of Narrogin Beef de-stocking its premises, has been unable to do so. The DEC stated that it will complete odour studies at appropriate times in the future should Narrogin Beef hold 6,000 and 10,000 head of cattle on the feedlot.

In relation to odour limits, the DEC stated that odour emissions are a complex matter. Accurate measurements, or strict odour limits, as licence conditions are not practical in the view of the DEC, and it noted that there are currently no licences which have been issued in Western Australian with such conditions.

### **Narrogin Environmental Action Team**

In its appeal, NEAT submitted that the licence should be amended as follows:

- General conditions G1 to G6 should be amended by removing all reference to 10,000 head of cattle, and that any increase in cattle numbers above 6,000 head should be the subject of a separate licence process after at least 12 months operating at 6,000 head;
- Air pollution control condition A1 be amended to reinstate conditions removed from the last licence requiring Narrogin Beef to undertake an assessment of odours from the premises, and report findings to the DEC. NEAT also noted that the new licence does not require Narrogin Beef to identify sources of odour and monitoring of odour at a capacity of 6,000 head.

### DEC advice

The DEC's advice in response to this appeal is in the same terms as its response to the Department of Education appeal.

### **Shire of Narrogin**

The Shire of Narrogin submitted that condition A1 of the licence (requiring Narrogin Beef not to emit odours which unreasonably interfere with others) should only be incorporated in the licence if it can be demonstrated that the DEC will be able to interpret the condition and enforce it. In essence, the Shire requested clarification as to how the condition will be interpreted, managed and enforced, where complaints are lodged.

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<sup>8</sup> Pers comm., Department of Education officers, May 2010.



## DEC advice

The DEC advised that condition A1 is a standard odour condition that is being progressively applied to licences issued to the occupiers of premises known to be significant odour emitters. The DEC stated that it is consistent with the requirements of section 49(5) of the EP Act and is not considered to be unreasonable.

## **Consideration**

By this ground of the appeals, objections have been raised as to the content of the conditions relating to odour: with Narrogin Beef and the Shire of Narrogin asserting that the conditions should be modified to permit the facility to operate at 10,000 head; and NEAT and the Department of Education asserting that the facility should be limited to a maximum capacity of 6,000 head, until odour reductions have been confirmed.

Narrogin Beef and the Shire of Narrogin have also recommended that condition A1 be deleted or clarified, so that it is clear to Narrogin Beef and the community how the DEC will manage odour issues into the future.

Narrogin Beef also questioned the seven day reporting time for monthly stock figures.

These issues will be considered in turn.

## Control of odour emissions – condition A1

The DEC advised condition A1 is a standard condition which is proposed to be applied to all odour intensive premises. It is based on section 49 of the EP Act, and relates to unreasonable emissions. The condition currently provides:

The Licensee shall ensure that odour emitted from the premises does not unreasonably interfere with the health, welfare, convenience, comfort or amenity of any person who is not on the premises.

Both Narrogin Beef and the Shire of Narrogin have requested the condition be either deleted or modified, to provide guidance on the meaning of an “unreasonable” emission.

It is considered that the intent behind condition A1 is justified, and that it is appropriate for the conditions to include a requirement that clearly specifies that odour from the premises shall not unreasonably interfere with persons outside the feedlot.

It is noted however that the receiving location of odour is an important element of whether odour is unreasonable. For example, an offensive odour affecting a residential area will be more “unreasonable” than an offensive odour received on vacant agricultural land. It is therefore recommended that consideration be given to condition A1 being refined to clarify that its purpose is to prevent offensive odours at sensitive places outside the feedlot, such as the Agricultural College, residences and the town of Narrogin. As discussed further below, it is at these places that odour is likely to cause most adverse impact, and it is in respect to these places that odour control activities should be directed. That is, the focus of the condition should be on areas most sensitive to odour, not merely any place outside the premises.

This approach is consistent with that adopted in Queensland, where guidelines on odour impact assessment state:

... There is general agreement that frequency, intensity, duration, offensiveness and location (FIDOL) are factors that ought to be considered when attempting to judge the likelihood of odour nuisance. These so called FIDOL factors are not easy to quantify individually, let alone when they interact. It is therefore not possible to develop criteria that set a “pass” or “fail” benchmark for air dispersion model odour estimates, rather guidance can be derived from the estimates on

estimates on likely impacts which can then be further refined through consideration of such things as the observed impacts of similar facilities, the sensitivity of the receiving community and "offensiveness" of the odours likely to be emitted. Proponents must first ensure that their proposals incorporate best practice environmental technology to manage odours.

Odour impact assessments need to reflect the levels of exposure that result in nuisance in communities affected by the odour impact. The odour impact assessment for a new facility or for modifications to an existing facility needs to be conducted for the purposes of achieving an environmental outcome, which meets a typical environmental authority condition for odour:

"There must be no release of noxious or offensive odours or any other noxious or offensive airborne contaminants beyond the boundary of the site that causes environmental harm at any odour sensitive place."

Odour sensitive places include residences, schools, hospitals, caravan parks, national parks, shops and business premises that may be affected by odour. Noxious odours are harmful or injurious to health or physical well-being. An example is gaseous ammonia. Offensive odours are those that cause unreasonable offence, displeasure, are unreasonably disagreeable to the senses or are disgusting, nauseous or repulsive. These are typically though not universally complex mixtures. Whether an odour is unreasonable is determined subjectively taking into account the FIDOL factors mentioned above. Note that such a condition allows the licensee autonomy in how to achieve the objective.<sup>9</sup> (emphasis added)

In the event a condition similar to that applying in Queensland is not possible in the context of the EP Act, there is merit in the suggestion of Narrogin Beef and the Shire of Narrogin for the DEC to publish guidelines which assist members of the community understand the DEC's interpretation as to the meaning of "unreasonable" odours, with particular reference to factors such as odour frequency, intensity, duration, offensiveness and location.

In relation to NEAT's request for a condition to be reinserted into the licence requiring Narrogin Beef to undertake an odour assessment, the DEC has advised that it will undertake this task, and that as a result, the condition is unnecessary. Given the DEC's advice, this is considered appropriate at this time. Should circumstances arise where additional surveys are required, it is open to the DEC to amend the licence accordingly.

### Stock holding and management practices

Three issues are raised by this element of the appeals:

1. level of risk posed by odour in respect to the Narrogin feedlot;
2. extent to which management practices have been implemented to address odour; and
3. what other measures (if any) should be implemented to minimise odour impacts at sensitive places outside the feedlot.

### *Odour from the Narrogin feedlot*

In discussions with Narrogin Beef and the Shire during the appeal investigation, it was suggested that odour conditions were unwarranted as complaints received in respect to the premises had not been validated. It was suggested that a number of complaints were unsubstantiated; motivated by an ulterior purpose; or related to odours from other sources. In support of this contention, Narrogin Beef submitted that the number of complaints received by the DEC was unrelated to the stock numbers at the feedlot.

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<sup>9</sup> *Guideline – Odour Impact Assessment from Developments*, Queensland Environmental Protection Agency, July 2004, pages 5 to 6.

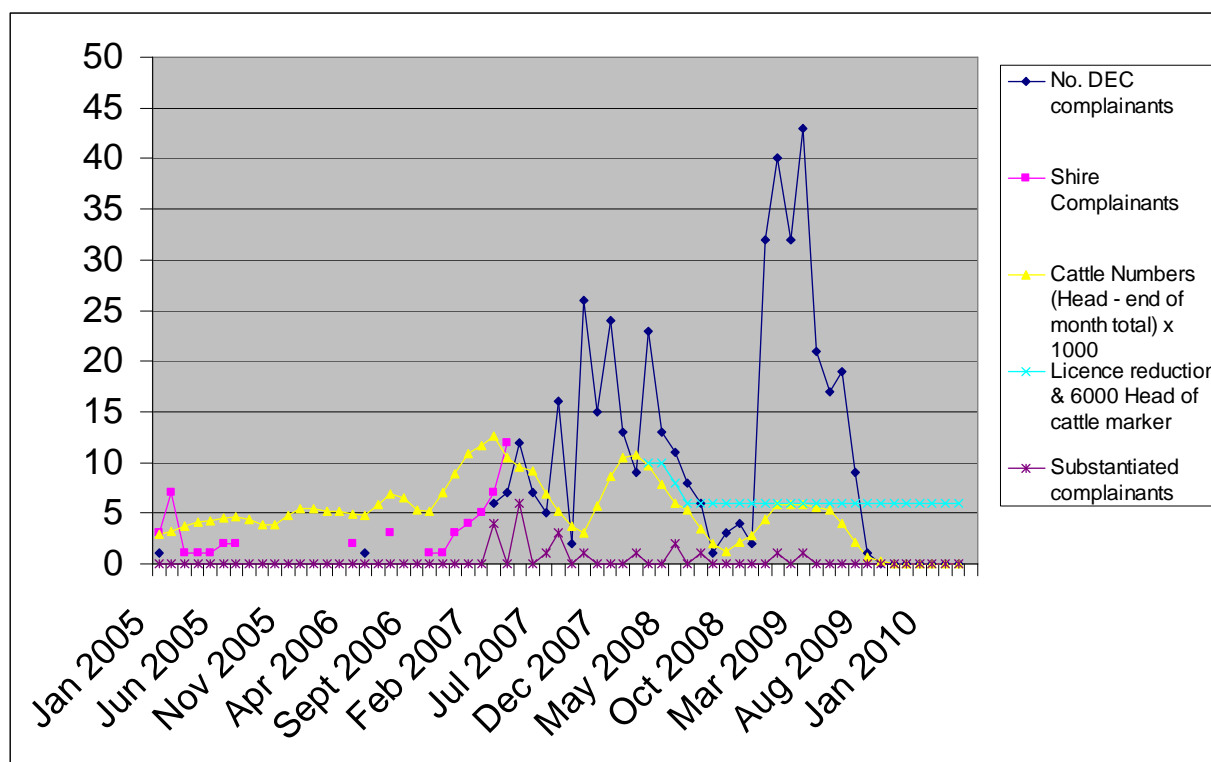
The question raised by this element of the appeal is whether the feedlot emits unreasonable odours, which is taken to mean odours which are offensive to an ordinary person, due to the frequency, intensity, duration, offensiveness and location of the odour.

Table 2 shows logged complaints with the DEC against cattle numbers held at the site for the period between 2005 and 2010. This data suggests that the number of complaints are not necessarily aligned to the number of stock, although there appears to be some correlation. It is noted that the DEC has recorded no odour complaints since September 2009, from which time it is understood no stock have been held at the premises.

To provide an objective measure of odour from the feedlot impacting on surrounding sensitive places (residences, Agricultural College, town of Narrogin), approaches in other Australian States were examined.

In all mainland States, with the exception of Western Australia, feedlot guidelines assess location and stocking number rates in a similar way. This involves consideration of a number of variables, including climatic conditions (rainfall, prevailing winds); topography; buffering vegetation; and standard of on-site management practices.

**Table 2 – Stocking number and complaints received by DEC<sup>10</sup>**



In the consideration of appeals lodged in respect to decision of the EPA not to assess a proposed feedlot at Moora in 2005, the Appeals Convenor's report noted:

The New South Wales EPA has produced Odour Control Guidelines which note the potential for cattle feedlots to cause odour pollution. The Guidelines state:

For large area sources like sewage treatment farms, cattle feedlots, composting, household or industrial tips and manure spreading, there are only two proven methods that can be used to reduce odour complaints. These are:

<sup>10</sup> Pers comm., P. Byrnes, May 2010.

- excluding development close to the site
- ensuring that the operation is carried out under best management practice.

If development close to the site is to be excluded, a reasonable 'buffer zone' around the area source has to be determined. The actual size of this zone will depend upon a number of factors, including the size of the area from which the odour emanates, the intensity of the odours being emitted, the duration and frequency of the odour emissions, the actual process being undertaken, the topography of the site, the weather conditions that prevail at the site and the neighbours' perception of offensiveness of the odours being produced.<sup>11</sup>

The Queensland Department of Employment, Economic Development and Innovation recognises feedlots produce odour, and advises that the elimination of odour at a feedlot is "impractical" and instead recommends attention should be directed to taking action to eliminate odour nuisance to neighbours.<sup>12</sup>

On the basis the above, it is accepted that feedlots produce odour, and that depending on size, location and management practices, odour has the potential to adversely impact on people outside of the feedlot. Figure 4 shows the closest sensitive receptors to the feedlot, and the approximate distance from the feedlot to the nearest residential building at each receptor.

Using feedlot guidelines applying in other States,<sup>13</sup> the proximity of the Narrogin feedlot to nearby sensitive receptors was analysed. This identified the Agricultural College (which the Department of Education advised has residential accommodation for around 120 students and staff) as being most at risk to odours from the feedlot.

#### *Management of odour at Narrogin feedlot*

Accepting that the Narrogin feedlot has the potential to emit odour which may adversely affect sensitive places outside the feedlot boundaries, this section examines what practices Narrogin Beef has put into place to ensure these impacts are eliminated.

As noted above, the question of odour was the subject of consideration through the 2008 appeals, which were determined by the Minister in January 2009. In that decision, the Minister agreed with the DEC that it was appropriate to limit the number of cattle at the site to 6,000 head, but with an increase in stock holding of up to 10,000 head subject to Narrogin Beef demonstrating to the satisfaction of the DEC that:

- the approved Waste Management Plan has been satisfactorily implemented at a feedlot capacity of 6,000 head of cattle;
- odour reductions have been achieved and validated at a feedlot capacity of 6,000 head of cattle; and
- an acceptable level of waste management and odour reduction can be maintained at an increased capacity of up to 10,000 head of cattle.

Conditions were incorporated into the licence giving effect to the Minister's decision by the amendment dated 31 July 2009.

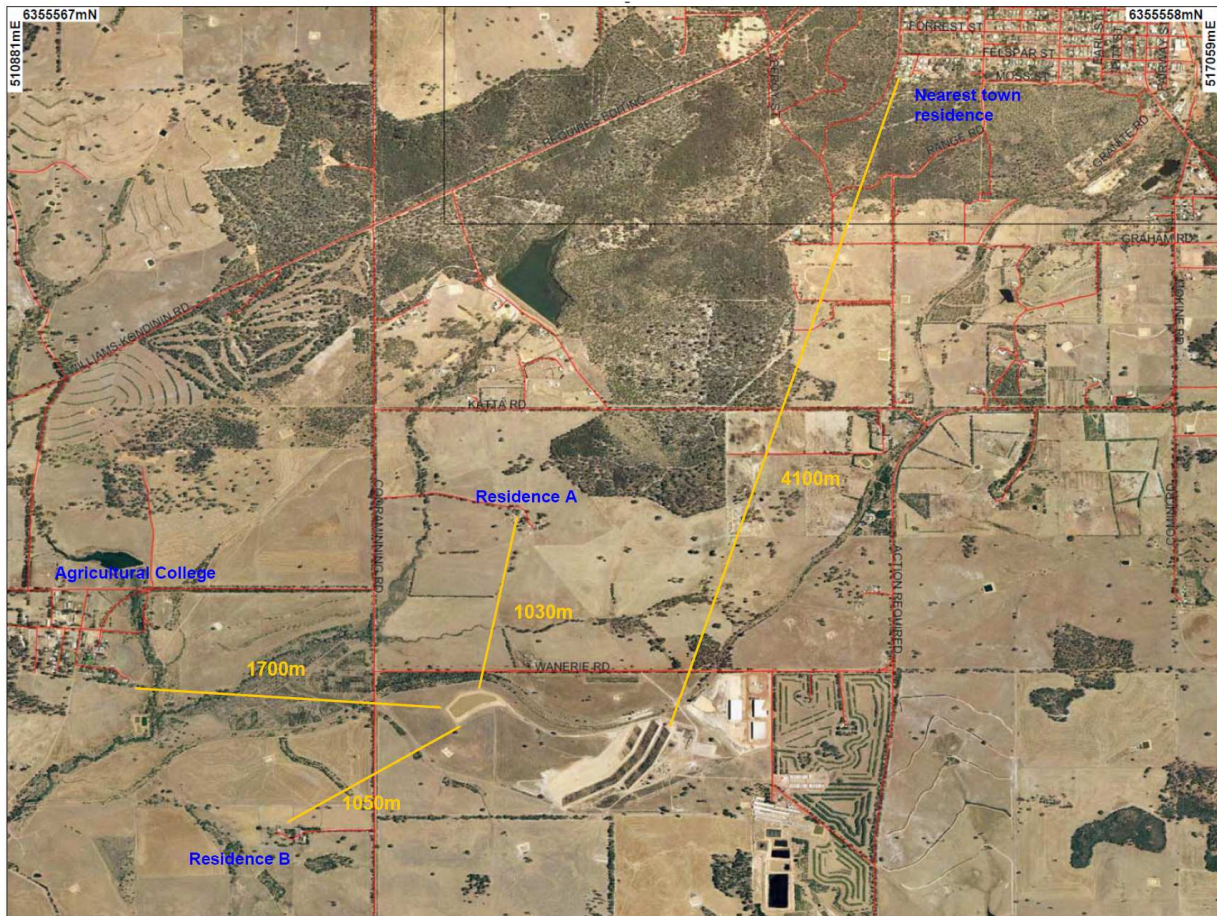
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<sup>11</sup> Appeal Report, Killarney Cattle Feedlot, Office of the Appeals Convenor, March 2006, page 25.

<sup>12</sup> <http://www2.dpi.qld.gov.au/environment/5252.html>

<sup>13</sup> For example, *Technical Notes: assessment and management of odour from stationary sources in NSW*, Department of Environment and Conservation NSW, November 2006.

**Figure 4 – Approximate distances between Narrogin feedlot and sensitive places**



As previously noted, the Minister appointed Mr Barry Carbon to chair the LCCC to advise the DEC on or before 30 September 2009 on the extent to which Narrogin Beef Producers has met the above and, based on this assessment, the environmental merits of increasing the feedlot capacity up to 10,000 head of cattle.

In a letter from the Chairman of the LCCC to the Director General of the DEC dated 13 May 2009, it was stated that:

Our deliberations relating to expectations for odour have given primacy to Narrogin town as a focus, but for some immediate neighbours of the Beef Lot there is an odour. On some occasions, mostly at night, and under atmospheric conditions that are still or are in very light wind (inversion conditions) there is a narrow plume of odour and there are complaints from some of the neighbours ...

The Committee agrees that there is an improved management plan and there is improved management ...

The Committee agrees that there is improved validation and improved transparency ...

There has been an improvement in odour measured this year (May 08 to March 09) ... in Narrogin compared to the previous May 07 to May 08 year. It is essential to make the disclaimer in making any comparison from year to year, month to month or even day to day, that there are variables in timing, especially of climatic conditions. Wind conditions would make a significant impact on the likelihood or not for the potential for any odours to reach Narrogin. The

comparison here has a large number of observations taken over a long time, and the improvement from this year to last is obvious.<sup>14</sup>

By letter to Narrogin Beef dated 31 July 2009, the Deputy Director General Environment of the DEC advised:

I approve NBP increasing the capacity of the feedlot up to 10,000 head of cattle subject to NBP adhering to its [waste management plan] and the odour surveys (undertaken by DEC) showing that odour from [the premises] is maintained below the 2007 baseline levels.<sup>15</sup>

In a subsequent letter to Narrogin Beef dated 14 August 2009, the Acting Director, Environmental Regulation Division of the DEC confirmed:

The Department of Environment and Conservation (DEC) advises that Narrogin Beef Producers has satisfied conditions G3(i-iv).

It is noted that Narrogin Beef Producers has not provided evidence that a an odour reduction has been achieved, however, DEC has acknowledged in correspondence to you dated 31 July 2009 that the Department of Agriculture and Food (DAFWA) odour survey provides some evidence that Narrogin Beef Producers has met condition G3(iii).

DEC is using DAFWA's odour survey and the report from the Local Community Consultative Committee as Narrogin Beef Producers' compliance with G3(iv) in the absence of any other notification from Narrogin Beef Producers<sup>16</sup>

From this information, it appears that Narrogin Beef implemented changes to its management practices between 2008 and 2009 which were sufficient to satisfy the DEC that odour levels had been reduced.

It is apparent that under the previous licence, the DEC gave notice to Narrogin Beef that the requirements of conditions G3(i)-(iv) of the July 2009 licence had been met, and that the number of cattle could be increased up to 10,000 head. Given this occurred during the currency of the previous licence, it is arguable that the conditions relating to 6,000 head should be deleted from the present licence. This is for the reason that the conditions were, in the view of the DEC, met under the terms of the 2009 licence. By re-including them in the current licence (which is a new instrument) suggests the licence holder will need to re-satisfy the DEC of all the matters that were the subject of consideration under the previous licence – that is, the licence holder would require the DEC to issue a new notice under condition G4, notwithstanding the DEC has previously indicated these matters were met to DEC's satisfaction.<sup>17</sup>

Against this are concerns expressed by NEAT and the Department of Education that the licence should be amended to limit the stock holding to 6,000 head, with any increase being subject to a separate licence amendment process.

The DEC is the agency responsible for the management of prescribed premises under the EP Act. In undertaking this task, it is considered that the DEC has access to appropriate technical expertise and knowledge to oversee the operation of prescribed premises, and ensure that emissions from the premises comply with the licence and the EP Act. In this case, the DEC has assessed the information available to it, and determined that Narrogin Beef has implemented improvements to its management practices which resulted in a reduction in odour levels.

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<sup>14</sup> Letter from Barry Carbon to Director General, DEC, 13 May 2009, pages 1-2.

<sup>15</sup> Page 3.

<sup>16</sup> Page 1.

<sup>17</sup> Note that condition G3 in the July 2009 licence is the same as condition G4 in the March 2010 licence.



In the above circumstances, it is considered that the DEC has formed the view that the intent of the Minister's previous determination had been met, and was prepared to approve the stock limit for the premises being increased up to 10,000 head subject to Narrogin Beef complying with the waste management plan, with subsequent odour surveys to be conducted by the DEC confirming a reduction against the 2007 baseline. In this background, it is considered appropriate for the conditions to be amended to remove those conditions that the DEC has determined have been satisfied by Narrogin Beef.

It is noted that the analysis undertaken by DAFWA in relation to odour reductions relate to observations made within the town of Narrogin. It is apparent, however, that the most sensitive place within proximity to the feedlot appears to be the Agricultural College. From information provided by the Department of Education, and noting the minutes of LCCC meetings, it is apparent that the DEC was aware of the concerns of the Agricultural College in relation to odour, and that the decision to permit an increase in stock numbers took into account impacts at the Agricultural College.

It is noted finally that the limit on stock holding to a maximum of 10,000 head of cattle is subject to the licence holder complying with condition A1, which was discussed above. This essentially means that so long as Narrogin Beef can operate the feedlot such that odours do not unreasonably interfere with sensitive places outside the feedlot, it can stock up to 10,000 head of cattle. Thus, the actual number of cattle capable of being held at the premises will be dependent on the licence holder's ability to implement whatever management practices are necessary to address offsite impacts, such as odour.

#### *Additional measures to address odour*

Notwithstanding the decision taken by the DEC to approve up to 10,000 head of cattle, given the potential for the feedlot to adversely affect sensitive places outside the feedlot, it is considered essential that (consistent with the Minister's previous appeal determination) the conditions retain a requirement for the odour levels to be monitored at 6,000 head under the approved waste management plan to confirm odour reductions have been achieved.

It is also considered important for the waste management plan to be reviewed and amended to ensure management practices are identified and implemented that ensure emissions from the feedlot do not unreasonably interfere with people outside the feedlot. In this regard, it is recommended that the waste management plan be the subject of a review by an independent feedlot specialist, commissioned by Narrogin Beef, with a focus on identifying management practices that should be adopted to ensure odour reductions can be maintained at a stock holding of up to 10,000 head of cattle. It is recommended that the review specifically address methods for avoiding offsite impacts at all relevant sensitive places, including the planting of vegetation; pen cleaning regimes; management of manure storage and disposal; and management of the effluent disposal system.

The review should be undertaken as soon as possible, with the final report of the independent specialist being made available to the DEC and the public no later than nine months from the date the Minister's appeal decision is given effect under section 110 of the EP Act. It is recommended this report be made available to the public and DEC to ensure transparency.

Depending on the recommendations of the review by the independent specialist, the DEC may amend the licence to incorporate changes to the waste management plan or any other required changes.

It is also recommended that Narrogin Beef be required to engage an independent specialist to review management procedures and compliance with the waste management plan on an annual basis for the duration of the licence (five years), with the review made available to the public. This will provide ongoing and objective guidance to Narrogin Beef, the DEC and the community generally as to the effectiveness of on-site management practices.

To provide rigour to this process, the independent specialist should be a person with no less than 10 years experience in an audit or assessment role for large (>5,000 head feedlots) in Australia, and who has demonstrated knowledge of feedlot guidelines applying in Queensland, New South Wales and/or Victoria.

In relation to the Department of Education's request for the feedlot to be subject to odour emission limits, the DEC advised this was impractical and no such conditions had been placed on licences in Western Australia. Further officer level advice from the DEC was that other jurisdictions (such as Victoria) were considering setting odour emission limits in the context of single compounds associated with odours (for example, hydrogen sulphide), but that there is no exposure limits set for these compounds in Western Australia.<sup>18</sup>

The Department of Education is understood to be prepared to undertake emission monitoring at its site in the event the feedlot is reactivated. The results of this monitoring may be of assistance to the DEC, and both agencies should be encouraged to share the results. In addition, should the monitoring being contemplated by the Department of Education prove effective, the DEC should be asked to consider its application to odour producing premises in the future.

It is also considered that, consistent with the National Beef Cattle Feedlot Environmental Code of Practice,<sup>19</sup> the conditions should be amended to provide for Narrogin Beef to maintain a complaints register, which includes all responses and measures taken to address any perceived problems and the time and date of complaints. The complaints procedure should be available to the public, such as through the Narrogin Beef website, with details of complaints being made available to the DEC upon request. The purpose of this condition is to provide a mechanism for Narrogin Beef to respond to feedback and identify management responses to avoid future complaints. For example, the feedback may indicate that activities undertaken at the feedlot at certain times of day are more likely to cause nuisance off-site. In response, Narrogin Beef could alter its activities such that they are not undertaken at times of day or certain climatic conditions which generate complaints from people outside the feedlot.

### Reports on stock numbers

By this element of the appeal, Narrogin Beef has requested that condition G6 be amended to require reporting of stock numbers "within 21 days" rather than seven days, as in the view of Narrogin Beef, the requirement is harsh and inconsistent with normal commercial reporting timelines (Narrogin Beef cited bank and Australian Taxation Office reporting timelines as examples). Narrogin Beef specifically submitted that the condition may unintentionally be breached where there is a computer failure or where key personnel are on holiday.

The DEC stated that this condition was added to the preceding licence issued on 31 March 2008, and has been satisfactorily met by Narrogin Beef since that time.

Given the connection between stock numbers and odour potential, the requirement to report daily stock numbers is considered appropriate. It is also understood that Narrogin Beef maintains a computer system which accurately measures all stockholding information on a daily basis. It is expected that Narrogin Beef will have adequate systems in place to ensure that all of the licence conditions are being met at all times, which means ensuring that a person in charge of the premises is aware of all management and reporting requirements.

It is expected however that the DEC will request stocking information from Narrogin Beef when required, for example, in investigating a complaint. As a result, the requirement to report stock numbers within seven days of the end of each month is not considered essential

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<sup>18</sup> Pers comm., DEC Air Quality Branch, May 2010.

<sup>19</sup> *The National Beef Cattle Feedlot Environmental Code of Practice*, Meat and Livestock Australia, 2000.



as a compliance tool, and that reporting within 21 days of the end of the month is considered acceptable, and that this ground of appeal should be allowed to that extent.

It is also recommended the condition be strengthened to require Narrogin Beef to report on both the number of stock and their average weight to enable the DEC to assess the number of standard cattle units present, consistent with approaches in other states.

### **Recommendation**

It follows from the above that it is recommended that the appeals be allowed to the extent that the DEC be requested to review the conditions relating to odour along the following lines:

1. In relation to condition A1 Odour Control, the DEC should:
  - a. Amend the condition to define unreasonable odour by reference to sensitive places outside the boundaries of the feedlot, which would be defined to include residential buildings, schools, hospitals etc; or
  - b. If amendment of the condition is not possible, prepare and publish guidelines to assist the community understand how the DEC will interpret condition A1, with particular reference to factors such as odour frequency, intensity, duration, offensiveness and location.
2. Insert condition limiting stock holding for the feedlot to a maximum of 10,000 head of cattle, subject to the licence holder complying with condition A1.
3. Delete conditions requiring licence holder to satisfy the previous appeal determination consistent with the DEC's determination that the conditions had been satisfied (e.g. delete conditions G4 and G5).
4. Insert condition requiring confirmation of odour reductions at 6,000 head of cattle under the approved waste management plan.
5. In relation to monthly reporting under condition G6, amend to require the monthly report to:
  - a. be provided to the DEC within 21 days of the end of the month; and
  - b. include the average daily weight of cattle held at the feedlot.
6. Insert requirement for licence holder to commission an independent specialist (being a person with no less than 10 years experience in assessing/auditing large feedlots in Australia) to review the waste management plan and report within nine months of the date the licence is amended recommending changes to the plan (if any) which will ensure condition A1 is met, noting the proximity of the feedlot to the Agricultural College, rural residences and the town of Narrogin.
7. Insert requirement for licence holder to commission a review of the feedlot operations against the waste management plan on an annual basis, with particular emphasis on measures to manage odour generation.
8. Insert requirement for the report/reviews referred to in 6 and 7 to be made available to the public and the DEC.
9. Insert requirement for licence holder to implement and publish a complaints procedure, to maintain a register of all complaints, and responses made to complaints, which will be available to the DEC upon request.

It is recommended that an "independent specialist" be defined to mean a person with no less than 10 years experience in an audit or assessment role for large (>5,000 head feedlots) in Australia, and who has demonstrated knowledge of feedlot guidelines applying in Queensland, New South Wales and/or Victoria.

It is considered the final wording of the conditions should be a matter for the DEC to determine under section 110 of the EP Act.

In relation to odour emission limits, the DEC's advice that this is not included in licences in Western Australia is noted. It is recommended that the Minister requests the DEC to liaise with the Department of Education in relation to any deployment of new technology odour measuring equipment at the Agricultural College with a view to assessing its effectiveness in assessing odour emissions from the feedlot, and the potential for the technology to be considered more widely.

It is otherwise recommended appeals relating to odour be dismissed.

### **GROUND 3 – WASTE WATER MANAGEMENT**

#### **Sedimentation basin and evaporation ponds**

By this ground of appeal, Narrogin Beef and the Shire of Narrogin submitted that the existing effluent management at the site was sufficient for the capacity of the feedlot, and that the requirement in the licence for the construction of the effluent system to be completed in accordance with the original proposal specifications was unreasonable.

Narrogin Beef specifically submitted that the existing evaporation pond is containing runoff as intended, and that it has been approved by the DEC for more than six years, and has only now become a focus, and written onto the licence.

Narrogin Beef contended that the assessment of the evaporation ponds was based on MEDLI modeling using Queensland summer conditions, and does not take into account the dry, high-wind conditions of the summers in Narrogin. Narrogin Beef claimed that it was clear that, in practice, the size of the retention pond is sufficient, and that the condition requiring that the pond not overtop is sufficient.

Narrogin Beef also submitted that the requirement to expend the significant amount of money to build a retention pond within just over two months of the date of the licence (i.e. 31 May 2010) indicates the supreme lack of understanding of the complexity of these issues. Narrogin Beef also submitted that cash flow difficulties caused by the limitation on throughput to half of submitted capacity caused the business to close in December last year. It stated that to expect it to obtain alternative financing and contract for such extensive and unnecessary earthworks by 31 May, adding hundreds of thousands of dollars to the current debt, is unacceptable.

In addition, Narrogin Beef submitted that the requirement to undertake the works in accordance with the original works approval is inconsistent with the DEC's advice that the works approval has expired.

Narrogin Beef stated that it is committed to managing the retention pond so as to avoid an overtopping event, thereby complying with condition W6(i) of the licence, and the waste management plan.

### DEC advice

The DEC advised that a works approval application by Narrogin Beef in 2002 for the construction of its cattle feedlot detailed the construction of a sedimentation system and two evaporation ponds. The DEC stated that it approved this design as it provided acceptable protection for the environment and complied with the National Guidelines for Beef Cattle Feedlots in Australia.

The DEC stated that the "as built" sedimentation system and evaporation pond did not comply with the works approval. Whilst Narrogin Beef made some modifications in 2009 to its sedimentation system, the DEC stated that it does not comply with the National Guidelines.

The DEC therefore included conditions in the current licence to direct Narrogin Beef to construct the sedimentation system and evaporation ponds as detailed in the 2002 works approval.

The DEC stated that if Narrogin Beef can demonstrate that it can adequately protect the environment through alternative means, the DEC will consider amending the licence conditions, provided that an equivalent or better environmental outcome can be achieved. To date, the DEC stated that Narrogin Beef has not demonstrated any alternative means.

In light of the above, the DEC advised that it is reasonable to incorporate the requirement to construct a wastewater management system that meets an approved design standard to prevent or minimise adverse impacts on the environment, consistent with National Guidelines, into a licence.

### **Overtopping condition**

Narrogin Beef requested condition W6 be amended, as it is unrealistic to expect that no overtopping occurs. Narrogin Beef submitted that in extreme flood events, overtopping will occur.

Narrogin Beef stated that the original works approval application quoted the National Guidelines for Beef Feedlots which provided that "storage volumes should be sufficient to ensure that the average spill frequency does not exceed 1 in 20 years."

### DEC advice

The DEC understands that the evaporation pond at Narrogin Beef's cattle feedlot incorporates a weir and a spillway, designed to safely pass an extreme rainfall event without damage to the earthen structure of the pond.

An evaporation pond should have sufficient freeboard above the spillway (usually 900mm) to adequately protect the pond's embankments from over-topping during extreme rainfall events, and from wave erosion on windy days. Also, an evaporation pond should have a safety margin (25 per cent spare capacity or ~300mm freeboard below the spillway) that exceeds the minimum wastewater storage requirement.

The DEC considers it is a reasonable expectation that Narrogin Beef's evaporation pond, or any other wastewater treatment pond, does not overtop, but has a controlled discharge through an engineered spillway during an extreme rainfall event.

If the subject cattle feedlot was located in Queensland, the DEC stated that it would be required to comply with Queensland's cattle feedlot guidelines which are also based on the National Guidelines.

## Consideration

This ground of appeal relates to the management of effluent at the feedlot, and whether existing infrastructure is sufficient to ensure effluent is appropriately managed to avoid discharge into watercourses or otherwise impacting on land outside the premises boundary.

The DEC has added to the licence a requirement that Narrogin Beef constructs the effluent management system to the design specified in the original works approval application. Narrogin Beef and the Shire of Narrogin have submitted that this requirement is inconsistent with the fact that the premises have not been fully developed to cater for the originally planned 14,940 head of cattle, and that as a result, the original effluent management system is not required.

The currently constructed effluent management system consists of drainage lines from the pens linking to a main contour drain which passes through a single weir, which is intended to operate as a sedimentation basin, before draining to the evaporation pond. The original proposal was to construct two sedimentation basins and an evaporation pond, which is understood to be consistent with the National Guidelines.

Through the appeal investigation, it was noted that the Department of Agriculture and Food (DAFWA) had, through the LCCC process, undertaken an assessment of the effluent management system at the site. In this advice, DAFWA stated:

### Drains Maintenance and Cleaning

Comment:

- *Present State* – The reference to the weir creating a sedimentation basin is incorrect. (See comments under sedimentation basin)

### Sedimentation Basin

Comment:

- The use of a single weir does not meet what the Department of Agriculture and Food would consider best practice. The principle behind a sedimentation basin is to dramatically slow down water velocity so as suspended solids fall out. Weir's are likely to achieve that in low run off events but in large runoff events they are more likely to exacerbate the problem.

### Retention Pond

In considering retention pond capacity, the following assumptions were applied:

- Initial indications suggest the catchment to the retention pond is 44-52 ha.
- Industry best practice is to maintain 1m of freeboard plus an additional 0.2 m for dams with fetch over 50 m.
- The planning return interval is 20 years.
- Runoff threshold is between improved and natural catchments conditions, closer to improved.
- Recent calculations of the existing retention pond size indicates that the pond is 41 ML in capacity.

Departmental modelling utilising Damcat5 indicates that a 52 ha catchment with the current surface condition of the controlled drainage area of Narrogin Beef and the long term average rainfall experienced in that location, indicate that there is a mismatch between the size of the retention pond and the catchment. This also assumes **no** other management is taking place.

Appropriate management could consist of:

- Decrease catchment size by reducing the controlled drainage area. The initial action should involve reducing controlled drainage area by inserting grade banks to divert clean water away from the western side of the controlled drainage area.

- Utilise water from the existing dam for irrigation.
- Reduce the run-off potential of the non-contaminated areas that can not be removed from the controlled drainage area. This could be done by revegetation or contour ripping.
- Expand current dam or construct additional dam.<sup>20</sup>

It is apparent from the DAFWA comments that the capacity and design of the existing effluent system is inadequate.

In discussions at officer level with the DEC, it was also indicated that the existing evaporation pond is too deep, and as a result, has lead to the odour producing sediments at the bottom of the dam rising to the surface due to temperature differences. It is understood this resulted in a significant odour release.

Narrogin Beef and the Shire have submitted that the existing facility has proven adequate for the current size of the facility, and the required changes should not be implemented. Given the advice of DAFWA and the DEC, it is considered that the existing effluent management system is inadequate for the feedlot as currently constructed, and Narrogin Beef should be required to construct the facility according to the original proposal or provide evidence demonstrating that an alternative method or design is appropriate for managing offsite impacts.

In relation to overtopping, Narrogin Beef has submitted that the requirement for no overtopping is unrealistic, as overtopping can occur in extreme weather events. The DEC has advised that the condition is justified, as its purpose is to prevent uncontrolled discharge from the structure other than through a properly designed spillway.

From the information provided in relation to this issue, it appears that Narrogin Beef has misconstrued the condition as preventing any discharge from the pond in extreme weather events. This is not case: rather, the condition is intended to prevent discharge over the pond walls, with a view to preventing wall failure and associated uncontrolled discharge. It is therefore considered the condition is appropriate, and that no amendment is required.

## **Recommendation**

It is recommended that the DEC be asked to review the existing conditions and identify the appropriate mechanism to require the licence holder to either:

- a. Construct the evaporation pond/sedimentation basins in accordance with the plans submitted with the original works approval, as defined in the current conditions; or
- b. Implement an alternative method of effluent management which meets the National Guidelines, and which is verified by an independent specialist to the satisfaction of the DEC, consistent with the DEC's appeal advice.

The time for complying with the above should also be modified to within nine months of the date of the amended conditions taking effect, or prior to the number of cattle reaching 6,000 head, whichever is later, with conditions W5 and W8 amended accordingly.

The wording of the amended condition should be determined by the DEC under section 110 of the EP Act.

It is otherwise recommended this ground of the appeals be dismissed.

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<sup>20</sup> *Environmental Waste Management Plan for Narrogin Beef Producers: DAFWA Comment, July 2009.*

## OTHER MATTERS

In its appeal, Narrogin Beef raised a number of economic and social issues in support of its appeal. This included correspondence in support of the proposal and a petition signed by several hundred persons expressing support for approval being granted for the feedlot to be permitted to stock 14,940 head of cattle.

The details of these submissions are provided to the Minister for her consideration.

## CONCLUSION

For the reasons stated above, the DEC is to review and (where required) amend the licence to achieve the following outcomes:

1. In relation to condition A1 Odour Control, the DEC should:
  - a. Amend the condition to define unreasonable odour by reference to sensitive places outside the boundaries of the feedlot, which would be defined to include residential buildings, schools, hospitals etc; or
  - b. If amendment of the condition is not possible, prepare and publish guidelines to assist the community understand how the DEC will interpret condition A1, with particular reference to factors such as odour frequency, intensity, duration, offensiveness and location.
2. Insert condition limiting stock holding for the feedlot to a maximum of 10,000 head of cattle, subject to the licence holder complying with condition A1.
3. Delete conditions requiring licence holder to satisfy the previous appeal determination consistent with the DEC's determination that the conditions had been satisfied (e.g. delete conditions G4 and G5).
4. Insert condition requiring confirmation of odour reductions at 6,000 head of cattle under the approved waste management plan.
5. In relation to monthly reporting under condition G6, amend to require the monthly report to:
  - a. be provided to the DEC within 21 days of the end of the month; and
  - b. include the average daily weight of cattle held at the feedlot.
6. Insert requirement for licence holder to commission an independent specialist (being a person with no less than 10 years experience in assessing/auditing large feedlots in Australia) to review the waste management plan and report within nine months of the date the licence is amended recommending changes to the plan (if any) which will ensure condition A1 is met, noting the proximity of the feedlot to the Agricultural College, rural residences and the town of Narrogin.
7. Insert requirement for licence holder to commission a review of the feedlot operations against the waste management plan on an annual basis, with particular emphasis on measures to manage odour generation.
8. Insert requirement for the report/reviews referred to in 6 and 7 to be made available to the public and the DEC.

9. Insert requirement for licence holder to implement and publish a complaints procedure, to maintain a register of all complaints, and responses made to complaints, which will be available to the DEC upon request.
10. Consider the appropriate mechanism to require the licence holder to either:
  - a. Construct the evaporation pond/sedimentation basins in accordance with the plans submitted with the original works approval, as defined in the current conditions; or
  - b. Implement an alternative method of effluent management which meets the National Guidelines, and which is verified by an independent specialist to the satisfaction of the DEC, consistent with the DEC's appeal advice.
11. Extend time for the licence holder to meet conditions W4 and W7 to within nine months of the date of the amended conditions taking effect, or prior to the number of cattle reaching 6,000 head, whichever is later, with conditions W5 and W8 amended accordingly.

Note: the precise wording of the conditions is a matter for the DEC in giving effect to this decision under section 110 of the Act.

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