GREAT SOUTHERN REGIONAL CATTLE SALEYARDS ADVISORY COMMITTEE MEETING

MINUTES

SECTION 5.9(2)(a) LGA 1995

Committee Brief

The duties of the committee shall be to:

- *Make recommendation to the Council regarding the strategic direction of the Saleyards;*
- *Make Recommendation to the Council regarding the Environmental Action Plan for the Saleyards;*
- *Bring to the attention of the Chief Executive Officer, industry matters regarding the cattle industry that may not be readily available to persons external to that industry; and*
- *Make recommendation to the Council regarding development works on the site.*

An Ordinary Meeting of the Great Southern Regional Cattle Saleyards Advisory Committee was held in the Committee Room, Lowood Road, Mount Barker WA 6324, 12.00pm Tuesday 6 September 2011.

Rob Stewart
CHIEF EXECUTIVE OFFICER

Committee Members
Cr B Bell, Cr M Skinner, Cr L Handasyde, Cr S Grylls 11/10

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Chairperson:
Cr M Skinner

Membership
Cr B Bell
Cr L Handasyde
Cr S Grylls

1 DECLARATION OF OPENING / ANNOUNCEMENT OF VISITORS

12.00pm The Presiding Member declared the meeting open.

2 RECORD OF ATTENDANCE / APOLOGIES

Members Present

Cr M Skinner (Presiding Member)
Cr B Bell
Cr L Handasyde
Cr S Grylls

Staff

Mr John Fathers, Deputy Chief Executive Officer
Mr Stewart Smith, Saleyards Manager
Mrs Erika Henderson, Saleyards Casual Employee

3 CONFIRMATION OF MINUTES

Moved Cr L Handasyde, seconded Cr B Bell:

That the Minutes of the Ordinary Meeting of the Great Southern Regional Cattle Saleyards Advisory Committee, held on 16 August 2011 as circulated, be taken as read and adopted as a correct record.

CARRIED

4 DISCLOSURE OF MEMBERS' INTERESTS

A Financial Interest was disclosed by Cr M Skinner
Nature and Extent of Interest: Farming - 400 head of cattle

Authority to participate pursuant to Section 5.69 (3) (a) and (b) of the Local Government Act 1995

Approval has been received from the Department of Local Government via letter dated 10 December 2010, giving permission for Cr M Skinner and Cr J Moir to participate in matters relating to the Great Southern Regional Cattle Saleyards until 31 December 2011.

Mr J Fathers read aloud the letter, a copy of which is attached to these minutes.

5 REPORTS OF COMMITTEE MEMBERS AND OFFICERS

5.1 SALEYARDS – ENVIRONMENTAL PROPOSALS

File No:	**N19563**
Responsible Officer:	**Rob Stewart** **Chief Executive Officer**
Author:	**John Fathers** **Deputy Chief Executive Officer**
Proposed Meeting Date:	**6 September 2011**

PURPOSE

The purpose of this report is to recommend a position which would enable the Council to progress a number of operational and infrastructure improvements relating to effluent management at the saleyards.

BACKGROUND

The Great Southern Regional Cattle Saleyards Advisory Committee (Saleyards Committee) has been attempting to progress a solution to the environmental problems at the saleyards for some years. A recent history is as follows:

- The Council's 2009 Annual Environmental Report noted an increase in nutrient levels in the groundwater down gradient of the waste water treatment ponds. One of the two ponds was de-sludged during 2008 however water quality in down gradient bores was elevated compared to other bores. The report recommended that consideration be given to the de-sludging of the second pond.
- In a letter dated 12 April 2010, the Department of Environment and Conservation (DEC) noted the results of the 2009 Annual Report and advised that:

  'It is recommended that further investigation into the management of nutrients on site be undertaken. DEC Supports a mid-year review of nutrient loading rates as recommended in the AER; however DEC also recommends that the Shire of Plantagenet explore the elevated nutrient concentrations in the irrigation water and groundwater, the potential environmental impacts of these levels, and possible mitigation measures. Elevated nutrient levels in the groundwater beyond ANZECC guideline trigger values may be an indicator that pollution is occurring from the activities on site.

  The de-sludging of the treatment pond in 2008 does not appear to have improved groundwater quality as suggested in the 2008 AER, and as such it is recommended that this issue now be explored further.'

- In July 2010, Charles Williams from West Coast Laboratories was appointed as the Council's new contractor for environmental and monitoring services. Mr Williams met with the Committee and the trend of elevated nutrients was discussed. The Council wrote to DEC and requested an extension of time to investigate this matter. Mr Williams was requested to further investigate a solution in conjunction with the Deputy Chief Executive Officer.
- In September 2010, the Committee sought advice from DEC on the planting and irrigation of trees such as bluegums between the ponds and the soak, in order to facilitate the uptake of nutrients.

- In October 2010, DEC advised that any change or expansion to the current irrigation area will require a works approval application and licence amendment. The planting of trees does not require approval from DEC but the irrigation of wastewater to land or trees would. Any new wastewater disposal (irrigation) area would also require some form of formal approval from DEC (depending on proposed storage and volumes irrigated may require a works approval to construct and licence to operate). A Nutrient Irrigation Management Plan would need to be prepared to manage the new irrigation areas.
- In December 2010, a letter was received from DEC in relation to breaches of licence conditions. DEC also advised of a requirement to decommission the pond 3 overflow system and contoured infiltration drain.
- In December 2010, Shire staff and Mr Williams met with representatives of Ecolab (a firm approached by Mr Williams to provide specialist advice) to explore options for waste water treatment. A series of questions was received and answered.
- In April 2011, after they had done some investigations, EcoLab pulled out of the discussions as they were of the view that their technology could not provide a solution which would enable environmental performance to be improved to the extent sought by DEC in its letter dated 12 April 2010. Mr Williams started looking for other firms that may be in a position to assist.
- Also in April 2011, the Saleyards Committee resolved to seek advice from DEC on a proposal to:
  - Decommission the waste water overflow on the southern sullage pond by installing a cap on the discharge pipe on the outside of the pond;
  - Install a valve on that pipe in cases of emergency due to large rainfall events, with the submission to include historical rainfall records; and
  - Amend the DEC licence for the Saleyards to incorporate the allowance in Clause 2.
- In May 2011, DEC responded to this letter, advising that a minimum of 400mm freeboard is recommended on treatment ponds specifically to handle rainfall events and wave action. Within the final pond, this would equate to maintaining a surface water level 400mm below the top of the overflow pipe. This requirement is being considered by DEC for addition to the Shire's licence. The proposed installation of a cap and valve is only supported by DEC if adequate freeboard is maintained. To facilitate any future emergency discharges via the overflow pipe, DEC would require discharges to be measured (eg: by a magnetic flow meter) and reported to the DEC. This is also being considered for incorporation into the licence.
- Also, in May 2011, Mr Williams sought assistance from a water treatment firm called Klen International. An initial meeting was held on site.
- In July 2011, Cr Michael Skinner, Deputy CEO John Fathers and Saleyards Manager Stewart Smith attended the Rural Press 2011 Australian Livestock Markets Association Conference held in Dubbo. During this trip, they also visited saleyards in Muchea, Dubbo, Carcoar and Forbes. A number of conclusions came from those visits. In brief:

  The Forbes' truckwash grate and effluent system is simple yet effective and in particular the use of aerators and additives in ponds was very beneficial. The use of additives seems to be important and has since been dealt with in Klen's presentation.

While not a direct impact on environmental factors, it was evident that the provision of soft floors is becoming more important from an animal welfare point of view. At the conference, contact was made with RPS Industries, a firm that supplies rubberised soft floors. The firm has offered to install the product free of charge on a trial basis at our saleyards.

RPS will be sending enough matting to cover the first selling pen and one of the loading ramps. RPS advises that not only will this have a positive impact on animals, but should provide savings in wash down of around 60%.

It was concluded that, if the claims are correct, a full covering of the entire concrete areas could be more important than the extra yard space that is currently in the budget. From a marketing point of view, this may encourage producers to sell in the saleyards rather than on-farm and therefore could also increase throughput. Just as importantly, the reduction in water usage will not only result in cost savings, but as pointed out by Klen International, is an important factor in improving environmental performance.

- In August 2011, following the conclusion of the investigations by Klen International, a presentation was made to the Saleyards Committee by its representative, Gerrit Van Rensburg. At that meeting, the Committee arrived at a preliminary plan for further consideration. It was also agreed to hold a strategic planning session on 6 September 2011, to which all councillors should be invited, in order to progress this and other long term plans.

STATUTORY ENVIRONMENT

The Council is required to fulfil its obligations under a licence granted by DEC issued in accordance with the provisions of the Environmental Protection Act 1986.

EXTERNAL CONSULTATION

Consultation has occurred with Charles Williams from West Coast Laboratories, Gerrit Van Rensburg from Klen International. Discussions have also been held with numerous saleyards staff at sites visited in July 2011.

FINANCIAL IMPLICATIONS

The 2011/2012 budget includes a sum of $50,000.00 for capital environmental improvements, which was funded from the State Government contribution that paid off the saleyards loans. The budget also includes a maintenance amount of $40,000.00 for sludge removal. The cost of the improvements proposed is dealt with in the Officer Comment section.

POLICY IMPLICATIONS

There are no policy implications for this report.

STRATEGIC IMPLICATIONS

The Strategic Plan does not mention the saleyards specifically, however protection of the environment is a recurring theme in the document.

OFFICER COMMENT

Investigations by Klen International

A summary of the presentation by Gerrit Van Rensburg is as follows:

Problem Definition

There are high nutrient levels in inspection boreholes (phosphorous and nitrogen), resulting in a nutrient plume in the soil under the ponds. The assumption is that at least one or all of the ponds are leaking waste water into the ground. It is anticipated that the plume will slowly dissipate after a solution is found to reduce the sludge and nutrient levels.

There is also a build-up of solids in the effluent ponds, resulting in decreased efficiency, decreased pond volume, blockages of irrigation nozzles and increased likelihood of seasonal pond overflows. As de-sludging doesn't necessarily provide an answer in the short term, it would be best to ensure sludge build-up didn't occur in the first place.

Nutrient Levels

Effluent Characteristics	Raw Effluent Screen	Final Effluent SW1	Required Effluent
BOD (mg/L)	147	72.0	
COD (mg/L)	528	282.0	
TSS (mg/L)	1656	220	
pH	7.7	7.2	
Nitrogen (mg/L)	162.0	64.0	<5.0
Phosphorus (mg/L)	28.0	12.0	<0.06
Oil & Grease	NoT tested	NoT tested	

Possible Strategies

Possible strategies involve either the removal, reduction or the utilisation of nutrients or a combination of these. Solids removal can be by microbial digestion, mechanical or chemical means. Nutrient reduction can be achieved by microbial digestion or chemical means. Nutrients can also be contained and managed, in a similar way to what we are doing now with irrigation on adjacent paddocks.

Solids removal can be achieved in a variety of ways:

- Filtration (sand, multi-media, activated carbon);
- Mechanical (belt filter press, centrifuge);
- Chemical (coagulation, flocculation).

However, this will not necessarily remove all the nutrients. Soluble nutrients have the ability to leach through the soil into ground water.

Options Considered – Treatment of Waste Water

1. Chemical Treatment

- Nitrogen removal:

- pH to 11 with lime;
- Bubble with air;
- Neutralise with acid;
- Possible odours;

- Phosphorous removal:
  - Metal salt;
  - Sludge handling;
  - Equipment – clarifier;
  - High cost of chemicals.

2. Biological Nutrient Removal (BNR)

   Although the exact configurations of each system differ, BNR systems designed to remove Total Nitrogen (TN) must have an aerobic zone for nitrification and an anoxic (absence or deficiency of oxygen) zone for denitrification. BNR systems designed to remove Total Phosphorous (TP) must have an anaerobic zone free of dissolved oxygen and nitrate. Often, sand or other media filtration is used as a polishing step to remove particulate matter when low TN and TP effluent concentrations are required. Common BNR systems cost from approximately $300,000.00 upwards.

3. Constructed wetlands and intermittent sand filters

   Advantages:

   - Natural;
   - Low maintenance;
   - Environmentally friendly;
   - Optional to irrigate;

   Disadvantages:

   - Expensive to construct;
   - Take up considerable space;
   - Low solids and nutrient recovery;
   - High risk in flooding events;
   - Sand filtration as polishing step;
   - Anaerobic conditions (smell);
   - High cost;
   - Not extensively developed / proven.

4. Biological Enhancement

   - Activated sludge process (anoxic, aerobic)
     - Expensive equipment;
     - Require skilled and consistent operation;
     - Power bills – aeration;
   - Wetlands
     - Harvest plant material;
     - Construction;

- Space;
- Leaching of nutrients still possible;
- Not fully researched;

- Ponds (anaerobic, aerobic)
  - Limited success;
  - Can be enhanced with chemicals;
  - Aeration / agitation.

Options Considered – Treatment of Ponds

- Aerobic Ponds
  - Bubble air or agitate or add peroxide;
  - Enhance nutrient removal with Klenzyme F;
- Anaerobic pond
  - Remove Nitrogen;
  - Settling of solids and to precipitate Phosphorous add a coagulant;
  - Reduce sludge with Klenzyme F.

This should result in an immediate reduction in nutrients. Seepage will continue, but should be greatly reduced.

Options Considered – Lined Ponds

- Time to construct;
- Risk of lining damage;
- Medium cost;
- Total elimination of seepage;
- No need to reduce nutrients (less chemical costs);
- Sludge management still needed, but mechanical means can be considered.

Proposed Short and (if necessary) Longer Term Solutions

1. Practise direct irrigation as far as possible to reduce volume in ponds and amount of nutrients to be treated.
2. Set up to reduce nutrients with an aerobic ponds followed by the anaerobic pond. Chemical addition will be needed to ensure nutrient reduction (Klenzyme F and Bioxide WW 1632).
3. Line the ponds to reduce operating costs and maximise on nutrient.
4. Install a sand filter with backwash back into the last pond to reduce blockage of irrigation system.
5. Install belt filter press to remove more solids prior to feeding to the ponds.

Cost of Chemicals (Based on 300kl/week)

- Klenzyme F
  - Chemical $ 10,316.00 per annum;

  - Equipment $ 2,000.00 (Optional – 200 Litre drum, agitator and dosing pump).

- Bioxide WW1623 (Alternative to aeration)
  - Chemical $18,240.00 per annum;
  - Equipment $ 2,000.00 (1,000 Litre IBC tank and dosing pump).

Further Officer Comment

The Council needs to be taking some affirmative action and also be seen by DEC to be doing so. Nevertheless, the Council has limited funds and must spend that money in the most cost effective way.

From the site visits and advice from Klen International, the use of aerators and enzyme additives seem to be an effective and cost effective way of encouraging bacterial action and maintaining ponds in good order. The reduction in water throughput into the ponds is also critical to reduce volume in ponds and amount of nutrients to be treated.

The Committee will recall that the Council spent around $20,000.00 in 2008 to remove sludge from ponds 1 and 2. This was not entirely successful in that the long reach excavator could not reach to all parts of the ponds. It is unlikely that the Council could adopt this method in the future due to environmental licence restrictions. Prior to that, contractors had been engaged to remove sludge using skimming equipment and flocculants. This method was completely unsuccessful and was abandoned.

One of the impressive things observed at Forbes saleyards was the ability of the combination of aeration and enzyme additives to digest sludge. If we can replicate these results, the Shire could achieve significant cost savings in sludge removal.

Waste water currently discharges to ponds 1 and 2 at the same time (1 and 2 then 3). In order to most effectively facilitate biological waste water treatment, the pipework should be adjusted such that the ponds can operate in series (1 then 2 then 3). Quotations would need to be sought to carry out this work.

During site visits, the initial sludge pond at Muchea was thought to be a good idea. At Dubbo, three ponds are in place, two long, narrow primary ponds and one secondary pond. Only one primary pond is used at any one time with the other one drying out. At Forbes, the primary ponds are relatively small and narrow (approx 4m x 16m). Due to the apparent ease with which Forbes keeps its ponds clean, the use of smaller anaerobic ponds is thought to be beneficial. At its 16 August 2011 meeting, the Saleyards Committee considered that a clay barrier could be installed to effectively cut pond 1 in half, to enable easier access, more effective enzyme action and allow cleaning out of solids if required. This is probably more a stage 2 option and would need further investigation to see if it is viable.

This is the extent of works proposed at the current time. It is anticipated that the results will be monitored and further decisions made on the more significant and costly works such as pond liners and filters. It should be remembered that some of the recommendations will take time to implement and it will take even longer to see any appreciable positive impacts.

Following the presentation by Gerrit Van Rensburg, the Saleyards Committee only had a limited time to discuss the way forward, although there was consensus for the following preliminary plan:

- Short term
  - Investigate soft floor and reduce water use;

- Further investigate enzyme additives;
- Further investigate installing aerators and progressively clean up ponds 3 then 2 then 1;
- Re-configure the ponds to be 1 then 2 then 3 in series;

- Medium Term
  - Install a clay barrier to effectively cut pond 1 in half, to enable easier access, more effective enzyme action and allow cleaning out of solids if required;
- Longer term
  - Depending on the results of these actions, further investigate the use of a sand filter and pond liners.

Subject to further consideration at the meeting to be held on 6 September 2011, a draft recommendation is presented below. It is proposed that a report then be submitted to the Council for information.

VOTING REQUIREMENTS

Simple Majority

OFFICER RECOMMENDATION

That it be a recommendation to the Council:

That:

1. An environmental action plan for the saleyards, consisting of the following:
   - A. Short term
     - i) Investigate soft floor and reduce water use;
     - ii) Further investigate enzyme additives;
     - iii) Further investigate installing aerators and progressively clean up ponds 3 then 2 then 1;
     - iv) Re-configure the ponds to be 1 then 2 then 3 in series;
   - B. Medium Term
     - i) Install a clay barrier to effectively cut pond 1 in half, to enable easier access, more effective enzyme action and allow cleaning out of solids if required;
   - C. Longer term
     - i) Depending on the results of these actions, further investigate the use of a sand filter and pond liners.

   Be noted;
2. A further report be presented to the Council on the efficacy of the action plan when the results become available.

COMMITTEE DECISION

Moved Cr L Handasyde, seconded Cr S Grylls:

That it be a recommendation to the Council:

That:

1. An environmental action plan for the saleyards, consisting of the following:

A. Short term

ii) Investigate soft floor and reduce water use;
iii) Further investigate and implement enzyme additives;
iv) Further investigate and install aerators and progressively clean up ponds 3 and 2 then 1;
v) Re-configure the ponds to be 1 then 2 then 3 in series;

B. Medium Term

i) Subject to the results of the short term actions, consider the installation of a clay barrier to effectively cut pond 1 in half, to enable easier access, more effective enzyme action and allow cleaning out of solids if required;
ii) Undertake appropriate tree planting in the contoured infiltration drain, south east of pond 3.

C. Longer term

i) Depending on the results of these actions, further investigate the use of a sand filter and pond liners.

Be noted;

2. A further report be presented to the Council on the efficacy of the action plan when the results become available.

CARRIED

Reason for Change

The Committee considered that the short term objectives should include statements about implementation rather than just investigation. Also, the Committee considered that appropriate tree planting in the contoured infiltration drain, south east of pond 3 would also be beneficial in reducing nutrients in that area.

6 GENERAL BUSINESS

6.1 ISSUES RELATING TO WEIGHBRIDGE COMPUTER FAILURES

The Saleyards Manager advised that in the last two sales, computer and PDA problems had caused some issues and delays. The most recent occasion had occurred due to a computer which had been repaired but the ports had not been set up properly to communicate with the Livestock Exchange software on the server. Paperwork had not been printed for several pens and buyers had to rely on weights being called.

One particular vendor, (ML & JF Phillips) has argued that the price obtained was much lower than it would have been if the usual standard of service had been in place. Landmark has waived its fee and has requested the Council to do the same. Fees amount to $150.00 (plus GST) for 20 animals.

While the argument about the reduction in sale price was arguable, members of the committee considered that due to the problems caused by Shire equipment, the write-off was supported in order to maintain goodwill with the customer and agent.

Moved Cr B Bell, seconded Cr L Handasyde:

That it be a recommendation to the Council:

That saleyards fees for ML & JF Phillips totalling $150.00 (plus GST), be written off.

CARRIED

6.2 PROPOSALS FOR FURTHER CONSIDERATION

- Greater use of chlorinated water.
- Need for energy audit / additional power requirements.
- Joint advertising campaign with agents for vealer sales.

7 NEXT MEETING

TBA

8 MEETING CLOSURE

12.40pm The Presiding Member declared the meeting closed.

CONFIRMED: CHAIRPERSON_____DATE:_____/_____/_____