final report

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Re-use of steriliser water for contra-shear and hose down outside rendering

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Abstract

Australia is one of the driest continents in the world and water is without a doubt the most important of all the natural resources.
With Australia's population growing and our freshwater supply decreasing it is important that industry endeavours to find ways to reduce water usage.

Tatiara Meat Company is a large export lamb processor that consists of a Slaughterhouse, Boning Room and Rendering Plant. Meat processing requires the use of a lot of potable water and as a result generates a lot of waste water.

The aim of this project was to capture the steriliser water from the Boning Room and use it for the Contra-shears and to hose down outside the Rendering Plant. Both of these processes used potable hot water.

The project succeeded in saving up to 100 KL per day of potable water.

Industry would benefit from re-using water where it is fit for purpose as it will ultimately save water.

Executive Summary

The project of Re-use of steriliser water for contra-shear use and to hose down outside Rendering was carried out to try to reduce the amount of water used at Tatiara Meat Company.

The aims of the project were to:

- Capture the steriliser water from the Boning Room and store it at the Rendering Plant
- Use the captured steriliser water through the contra-shear jets and to hose down outside Rendering
- Eliminate the use of hot potable water through the contra-shear jets and the cleaning process outside of Rendering.
- Save up to 100KL per day of potable water.
- Not affect product quality in any way.

The steriliser water was captured, stored injected with steam to keep the temperature high and re-used for it’s intended purpose and the contra-shears no longer use hot potable water resulting in a water saving of up to 100KL per day.

1 Background

Tatiara Meat Company is a large export lamb processor which consists of a Slaughterhouse, Boning Room and Rendering Plant. The steriliser water used in the Boning Room is heated to a minimum temperature of 82 degrees celcius and once used in the Boning Room was being diverted straight to the waste water pit for treatment. At the back of the Rendering Plant is the waste water treatment plant which uses two large contra-shears to screen out the solids in the waste water before it is treated. The area where the waste water treatment plant is has hoses to wash down this area.

The water being used in these areas was hot potable water and the use of this high quality water was not required for the purpose for which it was being used.

2 Project Objectives

The objective of this project was to replace the hot potable water used by the contra-shears and hose down outside Rendering Plant with water sourced from the Boning Room sterilisers and to save up to 100KL of potable water per day.

To do this it had to be proven that there was no risk to any product and the water would be in fact suitable for it's designated purpose.

3 Methodology

The water from the Boning Room sterilisers was samples and sent to Australian Water Quality Centre and analysed.

A pipe was installed to transfer the steriliser water from the Boning Room to the holding tank outside Rendering, to screen out any solids a shaker screen was fitted in line prior to the tank, to keep the temperature up in the holding tank and to prevent bacterial growth a steam line was fitted to the tank

4 Results and Discussion

The analysis from the external Laboratory showed some micro-organisms were present in the water, however given the intended use and the steam injection to heat the holding tank this was not an issue.

The project was commissioned and the contra-shears and hoses outside rendering no longer use hot potable water resulting in water saving of up to 100KL per day.

5 Success in Achieving Objectives -

The following project objectives were met:

- Stop using hot potable water through contra-shears and hoses outside Rendering and replace with re-used steriliser water from the Boning Room.
- Up to 100KL of potable water is being saved daily.
- No risk to product due to location and intended use of re-used water.

6 Impact on Meat and Livestock Industry – now & in five years time -

It goes without saying that the water supply in Australia is extremely important to the Meat and Livestock Industry as it is to every other industry or person. Any way that water usage can be reduced without affecting the Quality of the product has got to be a positive outcome. This project would most likely be suited to a majority of Meat Processing plants across Australia.

7 Conclusions and Recommendations

- The intended use for the re-used water was not a threat to product quality in any way as it is in an isolated area.
- Previously hot potable water was used through the contra-shears and hose down outside Rendering which also had a cost to heat.
- The steam injection is a vital part of the project, without it the sprays on the contra-shears will block up.
- Up to 100KL of potable water is saved per day
- Money is saved through the cost of 100KL of water per day.