

COMPANY PROFILE:

SOUTH PACIFIC LAUNDRY

LOCATION: BRUNSWICK EAST,
AUSTRALIA

INDUSTRY: LAUNDRY

PRE-INSTALL STATS:

CONSUMING APPROX.
5.5 L/KG AND 4.5 MJ/KG

SAVINGS:

CONSUMING
3.5 L/KG AND 4.15 MJ/KG

SYSTEM:

2-STAGE FILTRATION SYSTEM

- CERAMIC MICROFILTRATION (CMF)
- REVERSE OSMOSIS (RO)



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BACKGROUND

The Non-Residential Laundries Water Efficiency Program is an initiative of the Victorian Government to promote water efficiency in non-residential laundries across Victoria.

The purpose of this case study is to:

- ➔ Increase awareness of the water efficiency opportunities that are available for large commercial laundries.
- ➔ To highlight the business savings that implementation of such opportunities could achieve.
- ➔ To assist other laundries looking at implementing a similar system to identify the issues they need to consider and how these issues may be overcome.

COMPANY PROFILE

South Pacific Laundry (SPL) is a large commercial laundry operation servicing the hospitality industry in metropolitan Melbourne and its surrounds, including the Mornington Peninsula and country Victoria. SPL has been operating from its Brunswick East facility since 2005 and the facility processes up to 350,000 kilograms (kg) of linen per week. The facility incorporates 4 x 50kg Continuous Batch Washers (CBW) and 12 x Washer Extractors (WE) of various capacities between 30kg and 80kg.

In early 2012, SPL was consuming approximately 5.5 litres of water/kg of linen processed (L/kg) and 4.5 MJ of energy/kg of linen processed (MJ/kg) in its operations. SPL are now consuming 3.5 L/kg and 4.15 MJ/kg.

PROJECT DESCRIPTION

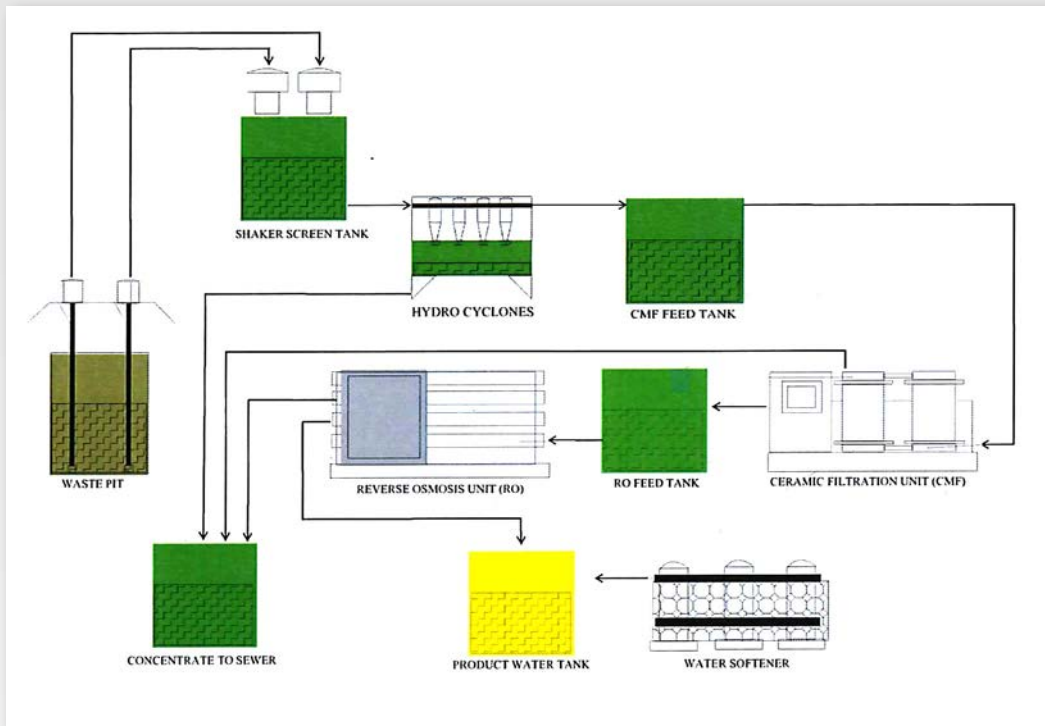
South Pacific received a grant of \$185,000 as part of the Laundry Water Efficiency Program in 2011 to implement a Kemco two stage filtration system comprising a ceramic micro-filtration system and a reverse osmosis system to deliver water (of a higher quality than drinking water) back to the laundry for reuse throughout all laundry equipment. The grant funded approximately 20% of the total project cost of approximately \$895,000.

The two stage filtration system incorporating a ceramic micro-filtration system and reverse osmosis system is a relatively untried technology in Australia with the technology more commonly used in commercial laundries in the United States.

The system also incorporates a sand filter required to remove grit from the wastewater prior to the ceramic micro-filter. A heat recovery unit allows waste heat to be recovered from the wastewater and reused within the facility.

The system is extremely effective as the ceramic filters are coated with fine porosity membranes which reject solids in the sub-micron size ranges and the reverse osmosis cross-flow filtration system has selective permeable membranes which removes dissolved ionic contaminants such as Magnesium, Calcium, and Carbonates which make up Total Dissolved Solids. (TDS).

TREATMENT SYSTEM SCHEMATIC DIAGRAM



RESULTS, CHALLENGES AND ISSUES

While the main driver for the implementation of this project was Corporate Social Responsibility (CSR), the two stage filtration system provided some impressive savings for SPL including:

- ➔ Water saving of 36,400 kl. per annum (36% reduction in total water use)
- ➔ Energy saving of 6,335 GJ per annum (9% reduction in total energy use)
- ➔ Recovery and use of 65% of the facility's wastewater

An 85% reduction in wastewater generated by the facility was expected, however the project delivered a slightly lesser reduction of 65% due to the following two main factors:

- ➔ 15% of wastewater is consumed in the system's sand filter to remove grit from the wastewater stream
- ➔ 20% of wastewater must be discharged directly into sewer due to chlorine content

