

Case Study – Regionsvaskeriet A/S Regional Laundry of Northern Jutland

Large savings and increased quality go hand in hand

The regional laundry of Northern Jutland, located in Aalborg, has invested in a new softening plant - and has made money on it



A view into Nordjyllands Regionsvaskeri.

About Regionsvaskerit A/S

Located on the outskirts of Aalborg, today there are about 120 employees.

Key customers are hospitals and workwear from a couple of municipalities. Approximately 240 cubic metres of softened water is used daily.

A couple of years ago, Nordjyllands Regionsvaskeri in Aalborg had an annual expense for waste water and salt of £17,000 the expense today is less than £4,700. Converted into percentages it means that today they buy 65% less salt and 80% less water.

The large savings have surprised technician Carsten Hansen of Nordjyllands Regionsvaskeri, because he says, it is obvious that the first time prospects of such large savings are mentioned, you are sceptical, it sounds too good to be true. However 18 months after the installation, it has proved accurate, and in fact it has delivered better results than anticipated.

When we purchased the plant, the payback time was calculated to be about 18 months. This calculation was based on savings in salt consumption and waste water. But we have had extra savings which were not included. For instance savings in soap, less demand for boiler blowdown's, and less expenses for operation and maintenance, as it is no longer necessary to replace valves which used to calcify, or clean washing pipes and nozzles quite so often.

One more gain, which was not included in the equation, is the savings on effluent charges since much less waste water now has to be discharged.

Savings on consumption of hydro-chloric acid should also be included. This acid is used for reducing the pH value in the washing water. The pH value must be below 9 before discharging the water to the public sewer system. Carsten Hansen adds that with the new softening plant it is evident that there are fewer nutrient salts and less lime in the water.

In addition to the installation of the new softening plant, it was also decided to replace the old boiler water treatment with a new reverse osmosis plant. This gave further savings and advantages and reduced dramatically the solids loading to the boiler.

Environmental Water Systems (UK) Ltd
Charwell House, Cheddar Business Park
Wedmore Road, Cheddar, Somerset BS27 3EB
Tel: 01934 741782 Fax: 01934 741783
Email: enquiries@reverseosmosis.co.uk



Environmental Water Systems (UK) Ltd
Total Capability in Water Purification and Water Treatment



Technical consultant Niels Kristian Houmann: - Our calculations in this case showed that the plant would be paid back in 18 months, after that it would be pure extra earnings.



Technician Carsten Hansen in Nordjyllands Regionsvaskeri: - It is obvious that when prospects of very large savings are first mentioned, then you are sceptical. But now, 1½ years after the installation, it has proved correct and in fact it has delivered better results than anticipated.



When the water turns into steam, all dissolved salts remain, these then have to be removed at intervals. Today the intervals between boiler blowdown's are far longer, providing further benefit.

Surprisingly Large Savings

Many laundries seldom dig deep into the detailed accounts and calculate consumption of salt, hydrochloric acid, soap and water consumption, Nordjyllands Regionsvaskeri hadn't until 2007 when the laundry was left with a worn-out softening plant. They then contacted technical consultant Niels Kristian Houmann for advice and he asked for a number of key figures to be able to calculate a possible saving. It was a big surprise when Niels Kristian came back and told the laundry about the payback time of 18 months.

"These are figures we have seen before", says Niels Kristian Houmann, "But they are definitely at the high end of the spectrum. In this case, calculations showed that the plant would be paid back in about 18 months, after

that it is a matter of pure earnings".

"However, everything cannot be evaluated in money. You also have to look at the washing result and the safe and continuous operation," says Carsten Hansen.

Reliable Control

On the new plant, which is equipped with a PLC, operation is monitored and runs with very small margins.

It is very important that we can be certain the water has a hardness degree below 0.1, because we dose the soap based on this hardness, and in that way we can be sure of a good washing result, Carsten Hansen explains.

The plant measures the conductivity of the rinse water, in that way we can ensure that as soon as the salt is out of the filter, the rinsing stops.

This typically happens two to three times a day. Today 1.6 cubic metres of water are used for each regeneration, compared to 2.9 cubic metres before. To ensure continuous operation, the laundry has established two spare tanks of approx. 160 cubic metres soft water each. This amount of water is adequate for the laundry to run its usual five to six hours of operation. Even the washing result and the preservation of the colours have been improved, now that the water quality is kept on a tight leash, Carsten Hansen adds.



A view of the water treatment plant in the basement below Nordjyllands Regionsvaskeri in Aalborg. To the right is the new HVD softening plant and to the left the RO plant and reservoir tank.

03/10

Environmental Water Systems (UK) Ltd
Charwell House, Cheddar Business Park
Wedmore Road, Cheddar, Somerset BS27 3EB
Tel: 01934 741782 Fax: 01934 741783
Email: enquiries@reverseosmosis.co.uk



Environmental Water Systems (UK) Ltd
Total Capability in Water Purification and Water Treatment

