

Reclamation system in the soft drinks manufacturing reduces water footprint

The Client

The customer is a world leader in convenient snacks, foods and beverages, especially carbonated softdrinks. Besides the efforts on product development the company is fully committed to protecting the natural resources and their efficient use in all operations.

As a result of an increasing population, urbanisation, agriculture and industrial expansion the quality of water at one of its production sites in Thailand has been rapidly degraded and the changing climate patterns (periods of drought in the dry season and flooding in the rainy seasons) call appeal for an effective water management.



Key Facts

- **Process water quality:** 20 $\mu\text{S}/\text{cm}$
- **Process water flow:** 130 m^3/h
- **Water footprint reduced**
by up to 200 m^3/day = 3%

The Client's Needs

Because of the company's growth an extension and optimisation of the existing water treatment system for soft drinks production in Thailand was inevitable. Water is one of the main ingredients in soft drinks. Its quality has to ensure the taste of the product is globally the same and thus fulfil the highest standards. Besides, water-use efficiency is an important factor for designing a new water treatment system. With its goal in mind to improve water-use efficiency by 20% by 2015, the customer decided to include a reclamation system treating backwash water and first permeate of reverse osmosis in the new solution.



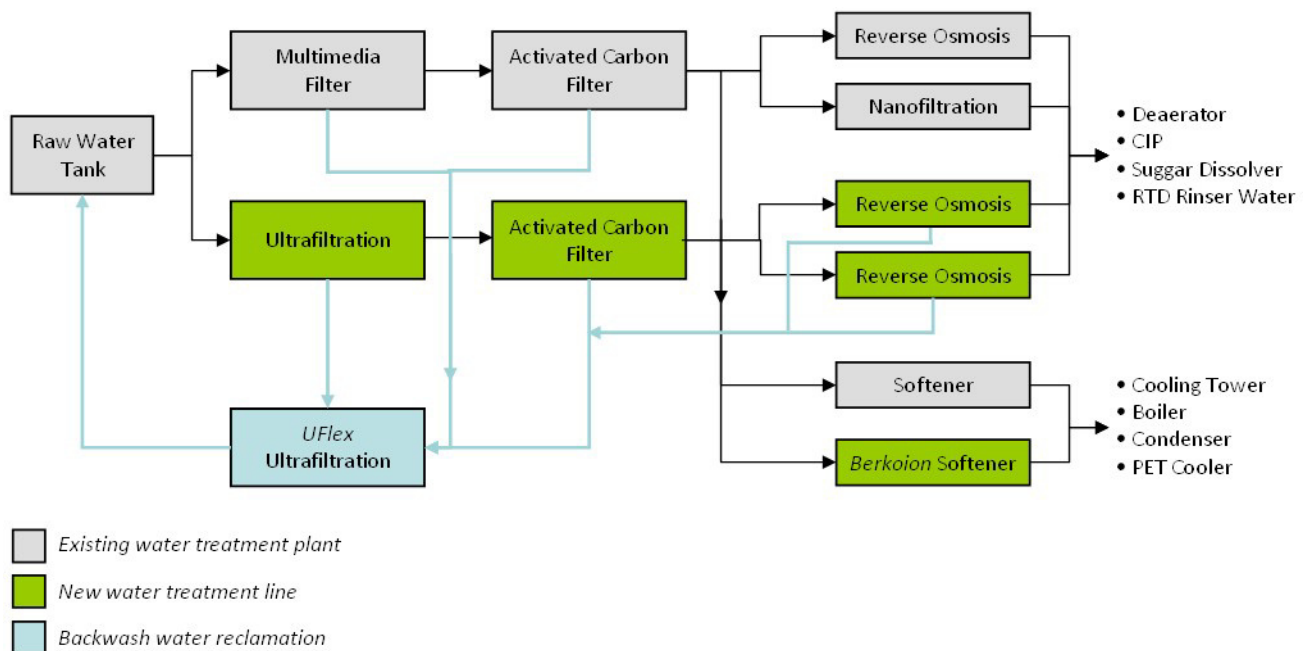
The Solution

The existing water treatment plant consisted of multimedia filtration, activated carbon filtration and either reverse osmosis and nanofiltration for process water applications or softening for utility feed water applications. Berkefeld extended the capacity of the plant by adding a new treatment line. In order to reduce raw water quantity in the process a reclamation system was implemented. It recovers up to 200 m^3 per day of backwash water from the multimedia and activated carbon filters, backwash water from pre-treatment ultrafiltration and first permeate of reverse osmosis by means of a standard ultrafiltration unit. The reclaimed water is then reused as raw water.

The Benefits

The extended and optimised water treatment plant enables effective water management by ensuring the **high water quality standard** as well as a **high water-use efficiency**. The new reclamation system **saves up to 3% of the raw water** quantity thus **reducing raw water** costs and waste **water discharge costs**.

Process Description



Amongst others, the new water treatment plant includes two standard units:

- **UFlex™ ultra filtration system for backwash water reclamation:**

This reliable and compact skid-mounted solution removes suspended solids as well as most bacteria and reduces the virus count by a factor of 10^4 . Fully automatic operation and backwash requires minimum operator involvement. Integrated controllers simplify operation and maintenance. Because UFlex filtrate quality fulfils the requirements on the raw water source, the filtrate can be recycled into the raw water tank and used again in the process.

- **Berkoion™ High Flow Duplex Softener to reduce the water hardness for utility feed water applications:**

The softening unit ensures a continual flow of treated water thanks to its proven Duplex design. Volume or sensor controlled automatic regeneration requires minimal operator involvement. Due to its counter current design the system reduces salt usage and waste and thus lowers cost per litre of treated water. Multiple individual valves reduce pressure loss by almost 50% compared to single valve systems.

Weitere Informationen:

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