xylem
Let's Solve Water

Norrvatten , Stockholm's second water supplier, has chosen WEDECO UV disinfection systems for their waterworks Görväln

Norrvatten – Northern Water Board, a municipality owned by 13 different municipalities in the north-east sector of Stockholm, produces and supplies drinking water of highest quality to the 500.000 inhabitants and industrial endusers of the 13 municipalities in Stockholm.

The untreated water is pumped from Mälaren and Görvälnfjärden. The main pipeline is about 240 km long and has six pumping stations and eight reservoirs. In order to guarantee that the water delivery is constant, there is a circular feeding of the water.

The water is stored and treated in the Görväln plant, which technically is the most advanced water plant in Sweden. The max. capacity is 200.000 m3 per day.

"A rather sophisticated control software ensures a minimum UV dose"

UV Disinfection of treated surface water with WEDECO K series

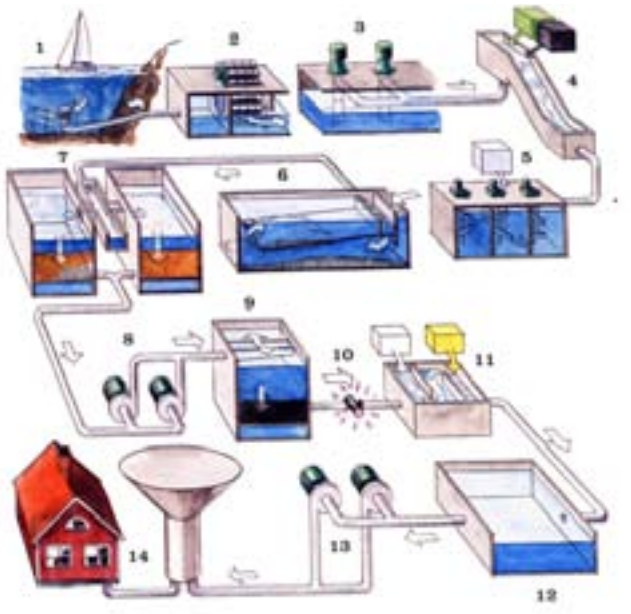
The lake water is eutrophic and contains a fairly high amount of humic substances. Norrvattens objectives have been to reduce disturbances like odour and taste from the raw water. Additionally re-growth possibilities of bacteria in the pipe net should be minimized by reducing AOC (assimilable organic carbon). Overall the use of chemicals in the process should be reduced. Ultraviolet light should be used as primary disinfectant and preformed chloramines as disinfectant in the distribution system. Low pressure systems have been preferred as of no change of water quality, for example no change of smell of the water.

Water Works Layout Görväln

The WEDECO K systems show excellent results with about 3 log reduction of Heterotrophic bacteria and zero coliform and E. Coli per 100 ml.
Together with the by 50 % reduced chloramines THM formation was negligible and much lower AOC levels were achieved and no production of odour.

A rather sophisticated control software ensures a minimum UV dose within certain ranges by switching on/off UV lamps and adjustment of UV power (vario) to different flow rates and UV transmittances.

1. Raw water intake
2. Rotosieve strainers
3. Raw water pumps
4. Mixing channel
5. Flocculation chamber
6. Sedimentation
7. Rapid sand filter
8. Pumps for lifting up to activated carbon filters
9. Activated carbon filters (charcoal filter)
10. UV Disinfection
11. Contact basin
12. Low reservoir
13. Drinking water pumps
14. Distribution net with water towers



Wedeco was chosen after an international tender evaluation of full life cycle costs (LCC) for 20 years. This included costs for equipment, installation and running costs (maintenance, power consumption and lamps). Low pressure lamps show lowest impact on any kind of change of water chemistry.

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Additionally technical criteria were judged like experience with similar installations, service organisation and design of the UV control system.

Detail: Installation Görväln, Stockholm

Xylem´s scope of supply:

» WWTP Görväln - 8300 m3/h; 250Joule/m2 biodosimetric
» 4 pcs. Wedeco K 3800 (three duty – one stand-by)
» PLC system for UV dose control
» Commissioning and start-up service
» Delivery in 2002

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