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HUBER CFSF for Post-Filtration of Wastewater from Tanneries



Five CONTIFLOW® sand filters installed in Montebello Vicentino

The wastewater treatment plant of Montebello Vicentino is designed for a total population (per freight) of 500,000. It treats 15,000 m³/d wastewater from the eponymous town and several other municipalities. A staggering 13,000 m³/d, or 87 %, is wastewater from tanneries. The municipal plant is in reality an industrial plant that also treats some domestic sewage. The plant includes the process steps of mechanical pre-treatment, primary sedimentation, an activated sludge process with nitrification and denitrification, and sand filtration. Sand filtration is necessary because sludge bulking leads to a suspended solids concentration in the effluent of the secondary clarifiers of normally 70 – 100 mg/l that rises seasonally to 300 mg/l and has peaks of up to 600 mg/l. The limit specified in the consent standard is 35 mg/l. The existing conventional sand filters, supplied by Sernagiotto, are overloaded and their effluent far exceeds this limit. The plant owners and operators did not want to increase its capacity because of its excessive backwashing costs. They were looking for a better system, preferably permitting continuous flow and backwashing, such as our CONTIFLOW® filters. They wanted to continue to treat 50 % of the flow in the existing sand filters and the other 50 % in new ones.

In view of the special wastewater characteristics we suggested to perform pilot tests with our CONTIFLOW® sand filter, and the customer agreed. We ran pilot tests from beginning of March to end of April 2005. To increase the inflow solids concentration, backwash water could be blended with the feed. We tested several filter sand qualities to find an optimal compromise between removal efficiency and head loss. Analysis of the test results showed that we could guarantee 20 mg/l in the effluent with a feed concentration of 300 mg/l and a filtration velocity of 8 m/h. We offered for a feed of 300 m³/h five stainless steel CFSF 72 units. After a long delay we finally received the order for supply and turn-key installation in October 2006.

We began installation of our filtration system in January and after only a few months it was commissioned in March 2007. Commissioning tests proved average reduction of suspended solids from 305 mg/l to an average of 18 mg/l suspended solids with a

300 m³/h flow. This means that our system easily complies with the 35 mg/l limit of the consent standard. Our customers are very happy with our filters simple operation and excellent performance; they are presently considering replacing their old filters with another unit of five CONTIFLOW® filters.

By Horst Schnarf, General Manager of Huber Technology G.m.b.H., Italy

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