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APPLICATION BRIEF

Online THM Data Help Aigües de Barcelona Minimize Energy Costs and Reduce Carbon Footprint

Aigües de Barcelona provides drinking water to more than 3 million people across the Barcelona metropolitan area from their Sant Joan Despí Drinking Water Treatment Plant (DWTP), with a capacity of 4.5 cubic meters per second.

Since 2014, Aigües de Barcelona has been using real-time THM data from Aqua Metrology System's online THM analyzer (THM-100™) to manage disinfection byproducts within its extensive network, minimize energy costs and reduce carbon footprint.

The online THM monitors have played an important role in Aigües de Barcelona's compliance and ESG strategy. They have helped the utility optimize their treatment processes, especially use of their reverse osmosis (RO) plant, assisted in monitoring water quality at handover points from their water supplier and reduce related expenses while ensuring regulatory compliance.

With accurate and reliable real-time data on THM levels, the company has been able to make more informed operational decisions at their Sant Joan Despí DWTP. When Aigües de Barcelona is experiencing low daily THM and THM formation potential levels a lower percentage of water is passed through the RO system. The facility adjusts the numbers of membrane racks in use to reduce energy consumption or elects to implement an altered water scheme (blending with a groundwater source) to minimize the throughput to the RO system. As an energy intensive treatment process, the RO system carries a high cost to operate and maintain. Through operational adjustments and their reduction in energy consumption, Aigües de Barcelona has been able to achieve an average cost savings of €30,000 per month.

Climate Action Policy

During 2021, Aigües de Barcelona defined its Climate Action Policy and established a roadmap to respond to the global climate agenda by implementing local policies, based on climate neutrality, adaptation to climate change and the involvement and capacity building of stakeholder groups. Among the milestones already achieved in terms of climate action, Aigües de Barcelona has delivered a reduction of the carbon footprint by 50.62%, from 2015 to 2020, and the regeneration of 38 hm^3 of water during 2021 (equivalent to 11,250 Olympic swimming pools). These efforts have made it possible to free up the use of conventional water resources, maintain the ecological flow of the Llobregat river, inject regenerated water into the recharge wells to avoid saline intrusion or use it for agricultural purposes.

Figure 1. RO Membrane System at Sant Joan Despí DWTP

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