

aquasource* Z-XS

Secured drinking water supply and simplified maintenance in the French Alps

Product	: 2 aquasource*Z-XS / 4 modules
Application	: Drinking water
Capacity	: 400 m ³ /day
Commissioned	: 2017
Location	: Le Raffort, France

challenge

The plant was built before the Water & Sanitation authority was acquired by the Arlysère urban Community in January 2018. Before this date, the water's authority was led by the Syndicat des Eaux du Fayet and its member municipalities (Cléry, Frontenex and Saint-Vital).

These municipalities are located in the French Alps, where they rely on the Le Fayet spring for their drinking water source. The municipality's existing equipment (UV + chlorination) did treat bacteria and microorganism issues but did not effectively treat the water when seasonal turbidity peaks occurred.

The municipalities wanted to manage the variability of their water resource while simplifying the maintenance operations.

solution

SUEZ Water Technology & Solutions, proposed **two aquasource* Z-XS** units to meet the 400 m³/day demand of ultra-filtered water.

In order to simplify the management of the 2 parallel units, they are controlled via an Ethernet connection (Modbus TCP protocol) by a master PLC that manages the operation of the entire treatment plant. The PLC controls the two units, in order to ensure that:

- the production volume meets the demand
- the raw water tank doesn't empty
- the treated water tank doesn't overflow.

. While one unit goes in backwash or is stopped for maintenance, the other continues to supply drinking water to the network.



Figure 1: The two aquasource*Z-XS on site

results

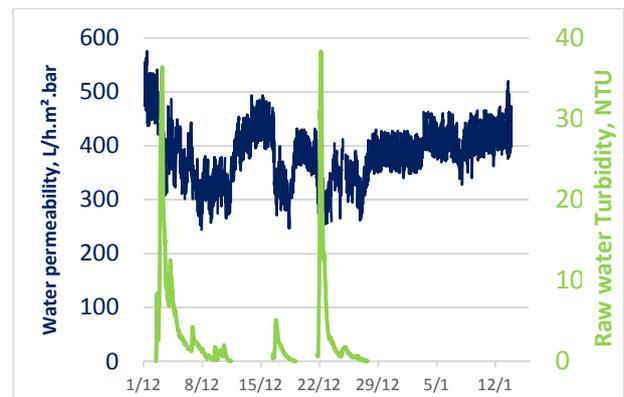


Figure 2: Units operation during turbidity peaks

The two aquasource Z-XS automatically adapt to seasonal events from Le Fayet spring and treat regular turbidity peaks up to 40 NTU by reducing permeability and increasing backwash frequency in order to maintain the membranes clean. Once the turbidity is back to normal, the units go gradually back to the initial operating regime, recovering full permeability without particular human intervention.

The parallel operation of two aquasource* Z-XS has allowed the water syndicate of Le Fayet to reach its goals:

- Constant and high quality water: <0.1 NFU regardless of raw water turbidity, exceeding French drinking water standards
- A physical barrier against pathogens: Bacteria (6 log) and viruses (4 log) are blocked by the membranes.
- Simplified operation thanks to the aquasource Z-XS's PLCs easily connected to the site common master PLC
- Trouble-free maintenance: each unit is able to operate independently, which secures water supply at any time.

aquasource * Z-XS enabled the water syndicate of Le Fayet to guarantee safe & clean water in sufficient quantity and at any time to its inhabitants while meeting the local regulations on drinking water.

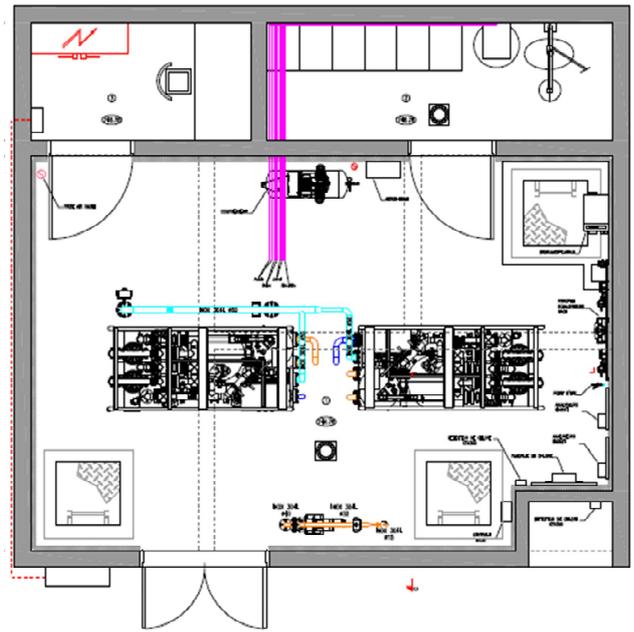


Figure 3: integration of the two aquasource Z-XS inside the building