

# MILK & DAIRY INDUSTRY

Waste Water Treatment Solutions



## CASE STUDY

The dairy industry has grown in most countries of the world because the demand for milk and milk products has steadily risen. It is one of the **largest sources of industrial effluents in Europe**. A typical European dairy generates approximately 500 m<sup>3</sup> of waste effluent daily. The dairy wastewater usually contains proteins, salt, fatty substances, lactose as well as **residues of chemicals used during cleaning processes**. Since the dairy industry produces different products, such as milk, butter, cheese, yogurt, condensed milk, dried milk (milk powder), ice-cream, various types of desserts and cheese, the characteristics of these effluents also vary greatly, depending on the type of system and the methods of operation used.

### What do they do?

The activity of this big Dairy Portuguese company, located in the south of Portugal, is the collection, treatment and processing of milk and the production of **dairy products and other food and beverage products**. The production is intended for the wholesale trade of milk, milk products and other food and beverage products.

### What are they trying to achieve?

Replacing standard or more sophisticated (although with limited performance) grease traps by **chemical treatment units**, with flotation devices (DAF), we manage to perform a proper chemical treatment to the waste waters, remove all solids, fats and greases, avoid bad odors, besides reducing drastically its organic loads, preparing these waters for a final **disinfection and filtration** which will allow them to be reintroduced into an internal feed line to flush waters and irrigation.



## SOLUTION

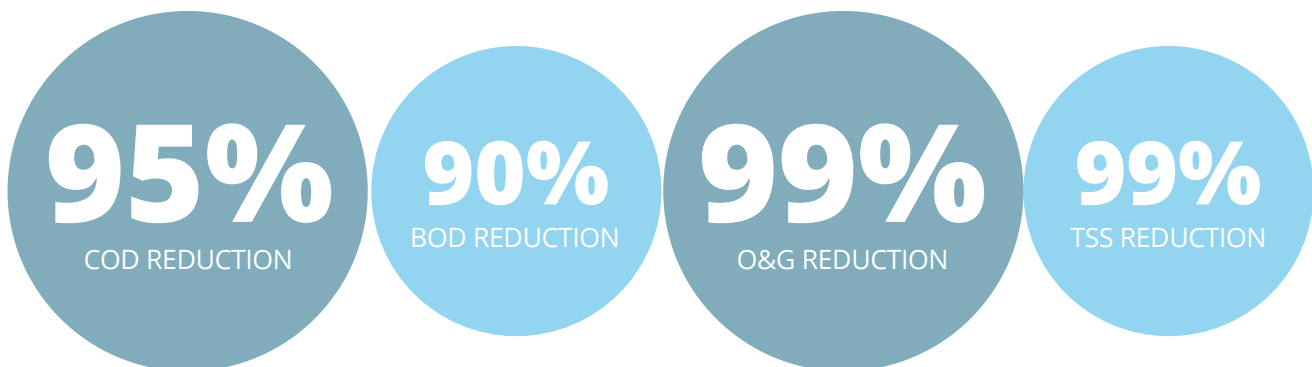
Keeping in mind the best systems to treat waters coming from milk, butter, and cream processing, we suggested the use of a batch biological oxidation process or a **SBR process** (sequence batch reactor), which in this case ended up using three SBR reactors, all under VentilAQUA's **SmartSBR system**, to treat together about **600m<sup>3</sup> daily**. This technology allows our client to partially recover water that may be reused in irrigation and current washing activities. Waters from the cheese production site are pre-treated on a **DAF system**, prior to the common biological oxidation step. The sludge produced on the oxidation process is dehydrated by a centrifuge unit.

## RESULTS

Full compliance with most stringent **environmental regulations** and 99,9% treated water recovery for irrigation, industrial washing procedures, truck washing. Technology fully treats all type of dairy effluents, from butter to normal milk, flavoured milks, cream, yogurts. **No chemical treatment used**, at all. Low sludge production, reuse of produced sludge for agricultural applications according to **EU regulations**.



## DATA RESULTS:



## TESTEMONIAL:

"Ever since the beginning of the wastewater treatment project, VentilAQUA responded to our need, expectation, and requirements, not only by efficiently treating the effluent which is typical of the industry at stake, but also by **allowing us to reuse water**, attracting savings of this scarce resource. From the construction until the launching of the plant, the availability and technical ability demonstrated, confirmed us that opting for VentilAQUA was the right decision, for it has been **establishing with us a trustful relationship**, beneficial to all interested parties." - General Manager