

Tine Cheese Factory, Oslo, Norway

The Client

Tine Meieriet Øst Lom & Skjåk is a cheese factory within the Norwegian Dairy Cooperative, located in the Norwegian mountains. The sold product is whey cheese, a Norwegian specialty.



Client's Needs

The factory has operated its own treatment plant since 1975. The plant was originally built with an aerated equalization basin, two trickling filters in series and a final settling tank. Due to operational problems and highly variable removal efficiencies, in addition to a large increase in production and more stringent effluent criteria, a major upgrade of this treatment plant was deemed necessary in 1994.



Key Figures

Design load:

Flow: 150 m³/d Average
(0,04MGD)
200 m³/d Maximum
(0,05MGD)

BOD₇: 200 kg/d

TP: 3.5 kg/d

The Solution

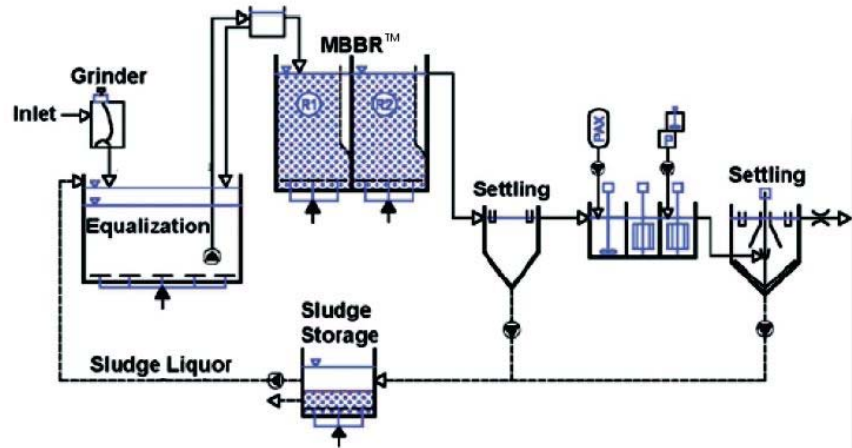
Remove the existing trickling filters and replace them with two significantly smaller AnoxKaldnes™ MBBRs.

FOOD & BEVERAGE

MBBR CASE STUDY

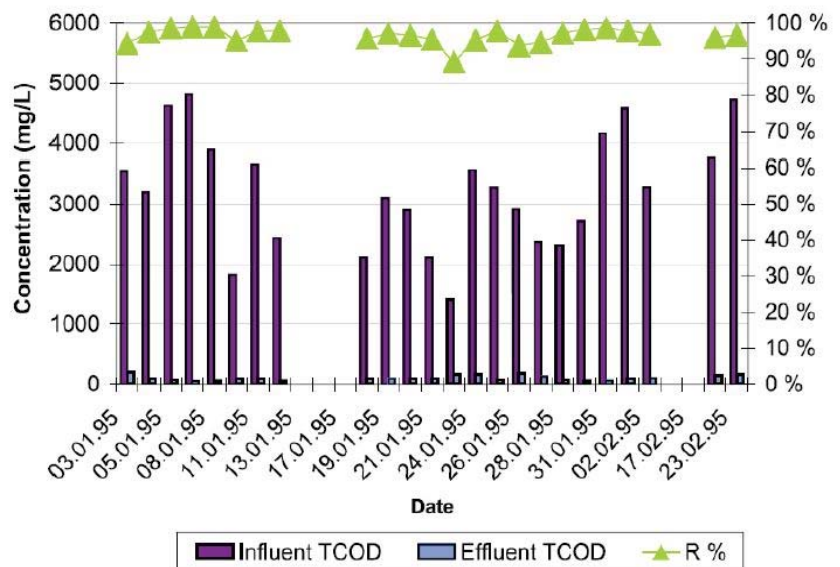
The Process

A grinder replaced the original bar screen and the former recycle basin was returned to its initial function as an aerated equalization basin. The original trickling filters were removed and replaced with two significantly smaller AnoxKaldnes™ biofilm reactors, followed by the original settling tank. The effluent from the initial settling tank was rerouted to the original flocculation basins and then to a new final settling tank.



Results

The results presented in the table were achieved during a test period after upgrading the plant using the AnoxKaldnes™ MBBR system. The results show that the upgraded plant can handle the high variable loads and concentrations in the cheese factory wastewater.



Flow 85 m ³ /d (0,02 MGD)	Influent (mg/l)	Effluent (mg/l)	Removal rate%
Total COD	4420	65	97.8
Suspended Solids*	600	6	99
Total Phosphorous	48	0.36	98.4

* = one sample



Solutions & Technologies

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