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CASE STUDY

How Pulp & Paper Operators Improved Dewatering Despite Sludge Variability

Background & Challenge

Our client in the **pulp and paper sector** operates an industrial wastewater treatment plant where sludge is dewatered using belt filter presses.

Despite achieving around 25% dry solids, **filtrate quality** remained poor, with **high TSS levels**, while the site also needed to increase throughput and reduce polymer use to control costs.

The challenge intensified as changes in the pulp process altered sludge characteristics, creating larger volumes of more difficult-to-dewater sludge.

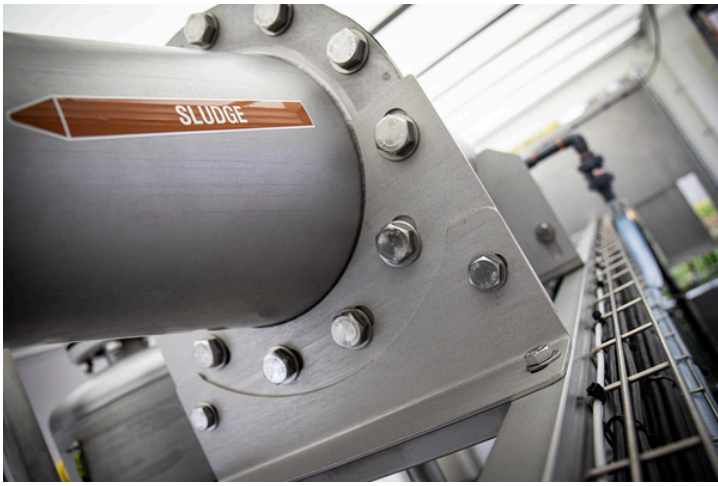
The site required a solution to improve performance amid **variable flow rates and peaks up to 30 m^3/h**, without stopping plant operations.

Orege's Solution & Service

Orege installed its SLG-based conditioning solution upstream of Sappi's belt filter presses to improve sludge preparation and dewatering performance.

The system was validated through 15 months of continuous operation, ensuring **consistent results** under **real-world plant conditions** and **varying sludge loads**.

Following this phase, the solution was implemented in continuous operation with **two SLG units** under a seven-year lease agreement, providing Sappi with operational flexibility and a sustainable path to long-term performance improvement.



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Results and Benefits

Orege's SLG solution significantly improved performance across key parameters.

Cake dryness increased by around 3 to 3.5 points, and filtrate quality saw a notable boost, with TSS decreasing from roughly 1.5 g/L to about 400 mg/L, producing a much cleaner filtrate.

The project also delivered strong operational benefits, **reducing polymer** use by approximately **20%** and **increasing throughput** per press from about **15 m^3/h to 22–25 m^3/h.**

This allowed the site to handle more sludge while **lowering operational costs**.

Importantly, the solution maintained stable operation during periods of deteriorating sludge conditions and higher discharge volumes.

Even under these more challenging circumstances, our client was able to **sustain acceptable cake dryness** and keep the dewatering line running **reliably**, thereby enhancing overall process **resilience**.

Orege enables pulp and paper sites to enhance dewatering efficiency and lower operating costs without capital investment.