



STREAMWISE

WASTEWATER IN A CEREAL PRODUCTION FACILITY: A CASE STUDY

The STREAMWISE Solution: AI Driven Control and Analytics Delivers Consistently Cleaner Wastewater While Reducing Plants Total Cost of

Operation

BACKGROUND

Cereal production is a water intensive operation. It generates a large quantity of wastewater containing high levels of total suspended solids and organics. Wastewater treatment presents a total cost impact on chemicals, trade waste charges and labor requirements. Food processors are looking for innovative ways to improve their wastewater treatment performance and lower their overall operating costs while increasing their personnel efficiency.

STREAMWISE technology for DAF is helping an Australian cereal manufacturer significantly lower its waste treatment operating costs through:

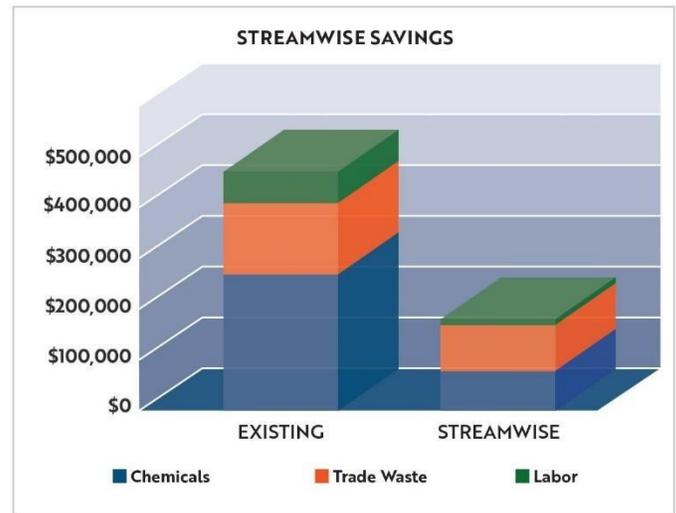
1. Reduced chemical consumption
2. Decreased trade waste charges
3. Lower operator oversight

OPPORTUNITIES

An Australian food manufacturing facility producing various cereal products generates on average 700kL of wastewater per week. Wastewater is processed through a Dissolved Air Flotation (DAF) unit using a manual chemical feed program to adjust pH and allow TSS removal.

With a need to reduce overall water consumption and the loss of experienced DAF operators, the plant processors searched for ways to automate and optimise the DAF operations. They consulted Waterwerx on the use of its STREAMWISE for DAF automation technology to:

1. Improve DAF efficiency and consistency, allowing for recycling opportunities to support the corporate water conservation objectives.
2. Reduce DAF Total Cost of Operation by lowering trade waste charges, optimising waste treatment chemical dosing and minimising operator oversight.



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STREAMWISE SOLUTION

Waterwerx's STREAMWISE technology continually optimises DAF operations, automatically responding to variations in feedwater quality and quantity. Reliable online sensors monitor DAF inlet and outlet water quality every 3 seconds, proprietary AI driven control algorithms optimise system performance in real-time and cloud-based analytics provides continuous improvement insights. This comprehensive IoT approach to DAF operations ensures the best performance at the lowest cost.

STREAMWISE RESULTS

In Table 1, we see how STREAMWISE's proprietary control vs manual control significantly lowers the plants total cost of operation. STREAMWISE control reduced trade waste charges by 19% and chemical costs by 75%. Ultimately, the STREAMWISE system will save this food processor over \$290,000 per year. In addition to considerable TCO savings given the more consistent low TSS effluent the plant is in the planning stages of running an MBR trial to recycle part of the waste stream.

CONCLUSION

STREAMWISE for DAF technology is helping this food processor produce cleaner and more consistent wastewater that is suitable for further inhouse processing to allow water reuse and recycle. In addition, this consistent and better-quality water is produced using significantly less treatment chemistry and operator involvement resulting in an overall TCO savings of 62%.

ANNUALISED TCO SAVINGS

EXISTING STREAMWISE IMPROVEMENT

Chemicals	\$280,000	\$70,000	-75%
Trade Waste	\$129,000	\$106,000	-19%
Labor	\$60,800	\$3,900	-94%
TOTALS	\$469,800	\$178,900	-62%

Table 2: Total Cost of Operation – Existing vs. STREAMWISE
Annual Savings = \$290,900