

Lutra.

Process Optimisation

Capability Statement

Our team of experienced engineers can look at your treatment data, samples, SCADA trends and more to discover ways in which to optimise any processes that may be either under-performing or costing too much.

Our deep knowledge of water and wastewater processes mean we can find ways to optimise that others can't. Lutra have a proven track record at delivering optimisations with meaningful outcomes – from cost savings to reduced callouts – all whilst delivering the same or even better levels of treatment.



Chemical Systems

Chemical dosing systems in both water and wastewater treatment are prime for optimisation. Dose rates are often overly cautious, or simply not checked against water conditions regularly enough, especially when you are reaching your current performance or compliance targets. The savings related dosing should not be underestimated, with hundreds of thousands of dollars per year possible. Lutra can dive into your data and perform onsite testing to identify the most efficient dose rates for all of your processes.

CO₂ Usage - Potential Reductions of \$700,000/year across 2 Wellington Water Treatment Plants.

Coagulant Usage - Proven Reductions of \$200,000/year at a MPDC WTP.



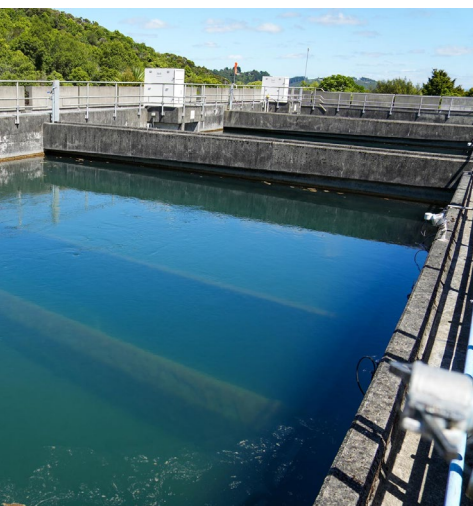
Aeration

Aeration at wastewater treatment plants is one of the largest energy consuming processes, making up significant OPEX costs and increasing your carbon footprint. Trimming the power usage of aerators even by as little as 10% can lead to significant savings without affecting performance.

Lutra's wastewater engineers can review your process, specific equipment, samples and performance data to identify the most efficient rate at which to run your aeration systems, saving you OPEX and reducing your carbon footprint.

Possible power reduction of between 10-25% Per Year.

Running blowers or aerators less will extend their service life.



Plant Production Performance

Are your filters or membranes running as efficiently as possible? By optimising filter backwash or CIP frequency, you can often improve the performance of the filters & extend their lifetime. This can be done to different degrees on all backwashable or chemically cleaned filters, from gravity to polymeric membranes. Lutra have experience with all kinds of media filtration systems and know how to get the best out of them.

By looking at data, water samples and through testing Lutra can find the best backwash frequency for your system – resulting in potential energy and water savings, whilst also increasing runtimes.

Increase treatment capacity without requiring new equipment or processes.

Increase in media/membrane life.

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Case Studies



Wellington Water CO2 Optimisation

New Zealand experienced a CO₂ shortage in 2023 due to industrial production reductions and supply chain issues. CO₂ is used across several Wellington Water plants to adjust pH and allow for added alkalinity. The increased cost and scarcity of CO₂ prompted Wellington Water to engage Lutra to optimise CO₂ dosing at their Te Marua and Wainuiomata treatment plants.

Estimated Savings \$700,000/year.

[Link to Full Case Study & Video](#)



Coagulant Optimisation MPDC WTP

After noticing operational issues at a their 5.8MLD surface water treatment plant MPDC employed Lutra to investigate and optimise the chemical dosing. Lutra found that the alum dose rates were higher than necessary and were able to make adjustments that halved their usage without reducing treatment levels. The reduction in alum had the compounding effect of allowing a reduction in pH adjusted chemicals.

Estimated Savings \$200,000/Year



Membrane Bioreactor (MBR) Optimisation MPDC

MPDC operates a flat sheet MBR plant at Te Aroha that treats 2,000 m³/d. After reviewing the filtration, relaxation, and aeration setpoints, operation, and performance onsite, Lutra's recommendations were implemented and resulted in 25-30% net flux capacity increase. The capacity increase resulted in more idle time for the MBR, reducing aeration power requirements.

Estimated Savings \$15,000/Year

Lutra Optimisation Videos

In these videos, some of our process engineers discuss what is involved with different kinds of process optimization, why it is so useful and how to achieve it.

CLICK THE IMAGES TO VIEW



Optimise Your Treatment Plant



What is Filter Optimisation?



More Case Studies and Blogs

Further case studies and blogs can be found at the link below:

[OUR WORK](#)